

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE _____ PAGE _____ OF _____ PAGES

2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY	CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i>		CODE

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(X)	9A. AMENDMENT OF SOLICIATION NO.
		9B. DATED <i>(SEE ITEM 11)</i>
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED <i>(SEE ITEM 11)</i>
CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)***13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>		<i>(Signature of Contracting Officer)</i>	

Item 14. Continued.

CHANGES TO VOLUME 1 OF THE SPECIFICATIONS

1. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013:"

SECTION C DESCRIPTION/SPECIFICATION/WORK STATEMENT
SECTION G CONTRACT ADMINISTRATION DATA
SECTION L INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS
SECTION M EVALUATION FACTORS FOR AWARD

2. Replace the pages referring to the Affirmative Action Plan and the Rates of Wages for laborers and mechanics to be added by amendment with the following new attachments, each bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013:"

ATTACHMENT J-11 (Wage Determinations Decisions)
ATTACHMENT J-12 (Affirmative Action Plan)

CHANGES TO VOLUME 2 OF THE SPECIFICATIONS

3. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013:"

SECTION 01454 CONTRACTOR QUALITY CONTROL

CHANGES TO VOLUME 3 OF THE SPECIFICATIONS

4. Replace entire Volume 3 of the Specifications with the accompanying new Volume 3, Job Order Contract Specifications, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013."

CHANGES TO VOLUME 4 OF THE SPECIFICATIONS

5. Replace entire Volume 4 of the Specifications with the accompanying new Volume 4, Unit Price Book, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013."

END OF AMENDMENT

SECTION C
DESCRIPTION/SPECIFICATION/WORK STATEMENT

C.1 MEDICAL TREATMENT FACILITIES

This contract shall apply to all Governmental medical facilities and facilities in the United States including Alaska, Hawaii and Puerto Rico.

Medical Installations (3)

Ft. Detrick, MD
Ft. Sam Houston, TX
Walter Reed, DC

Medical Centers (7)

Brooke-Ft. Sam Houston, TX	William Beaumont-Ft. Bliss, TX
Dwight D. Eisenhower-Ft. Gordon, GA	Womack-Ft. Bragg, NC
Madigan-Ft. Lewis, WA	Tripler-Honolulu, HI
Walter Reed-Washington, D.C.	

Community Hospitals (23)

Basset-Ft. Wainwright, AK	Lyster-Ft. Rucker, AL
Bayne Jones -Ft. Polk, LA	Martin-Ft. Benning, GA
Blanchfield-Ft. Campbell, KY	McDonald-Ft. Eustis, VA
Darnall-Ft. Hood, TX	Moncrief-Ft. Jackson, SC
DeWitt-Ft. Belvoir, VA	Munson-Ft. Leavenworth, MO
Evans-Ft. Carson, CO	Ray Bliss-Ft. Huachuca, AZ
Fox-Redstone Arsenal, AL	Reynolds-Ft. Sill, OK
GEN Leonard Wood-Ft. Leonard Wood, MO	Rodriguez-Ft. Buchanan, PR
Ireland-Ft. Knox, KY	Weed-Ft. Irwin, CA
Irwin-Ft. Riley, KS	William Kellar-USAMC, West Point, NY
Kenner-Ft. Lee, VA	Winn-Ft. Stewart, GA
Kimbrough-Ft. Meade, MD	

Clinics (420)

Health (241)
Dental (91)
Veterinary (88)

C.2 SCOPE OF WORK

C.2.1 Description

C.2.1.1 The contractor shall provide work plans, major repair, minor construction, and operations and maintenance (O&M) relating, but not limited to the civil, architectural, structural, mechanical, electrical, instrumentation, communication, security and safety systems of Government medical and other facilities in a timely, high quality and cost effective manner.

C.2.1.2 Codes and Standards. All work performed under this contract shall conform to the requirements herein, all applicable Federal, State, and local laws, regulations, codes, or directives. In addition, all work on facilities under this contract shall conform to the codes and requirements governing the operation of a medical facilities such as MEDCOM regulations,

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National Fire Protection Association, Joint Commission on Accreditation of Health care Organizations Center for Health Promotion and Preventive Medicine (CHPPM), the Joint Commission of Accreditation on Health Care Organization (JCAHO), and Management of the Environment of Care Standards Life Safety Management Standards. The contractor shall remain abreast of any changes in codes that impact these facilities. All codes and standard requirements shall be based on the latest edition of codes applicable at the time the task order is issued. All work shall comply with local, state, federal, national, or military codes, whichever is the most stringent. The contractor shall notify the Contracting Officer when major modifications are required to maintain code compliance. The contractor shall implement minor changes into his program. The contractor shall insure that all work provided meets or exceeds the scope of work for each task order, and any special specifications included with the individual task order or included in any applicable documents.

C.2.1.3 Work plan activities shall include but not be limited to consultations, reports, studies, analyses, calculations, surveying, detailed written scopes, specifications, architectural layout plans (i.e. functional analyses, bubble diagrams, comprehensive interior designs and renderings), sketches, drawings, budget estimates, cost proposals, and construction schedules.

C.2.1.4 Civil work shall include but not be limited to excavation, trenching, shoring, fill, compaction, erosion control, and fences.

C.2.1.5 Architectural work shall include but not be limited to windows, doors, hardware, cabinetry, and interior/exterior finishes.

C.2.1.6 Structural work shall include but not be limited to drains, culverts, bridges, walkways, roadways, parking lots, pilings, foundations and buildings.

C.2.1.7 Mechanical work shall include but not be limited to heating, ventilation, and air conditioning (HVAC) systems and components, refrigeration systems, material transport systems, automatic box conveyor systems, transient tubes, incinerators, fuel lines, elevators, escalators, dumb waiters, cascart lifts, pneumatic tube systems and sterilization systems, as well as plumbing systems including water, solid, and hazardous waste control, and medical gas and vacuum systems.

C.2.1.8 Electrical work shall include but not be limited to power and service supplies, distribution, and utilization systems (including lighting), power generators and uninterrupted power supplies (UPS).

C.2.1.9 Instrumentation work shall include but not be limited to plant management systems, using direct digital technology and fire alarm systems.

C.2.1.10 Communication work shall include but not be limited to medical nurse call, paging, telephonic, and computer networks.

C.2.1.11 Security work shall include but not be limited to perimeter barricades, and intrusion detection and surveillance systems.

C.2.1.12 Safety work shall include but not be limited to life safety, medical safety/hygiene, and fire suppression systems.

C.2.1.13 Asbestos and/or lead based paint (LBP) abatement may be required separately or in conjunction with work on the above-described facility systems.

C.2.1.14 Ancillary work necessary to support the repair/alteration/construction or to restore the work area to the condition prior to the repair/alteration/construction is required.

C.2.1.15 It is anticipated that approximately 20 percent of this contract may be for non-medical facility work.

C.2.1.16 This objective will be achieved through the implementation of task orders issued under the terms of this contract for all of the herein described tasks and/or additional tasks described in specific task orders.

C.2.2 Execution

C.2.2.1 The Contractor shall execute the work under the direction of a Contractor Program Manager approved by the Contracting Officer. All work shall be accomplished with adequate internal controls and review procedures which will eliminate conflicts, errors, and omissions and ensure the technical accuracy of all output.

C.2.2.2 The Contractor shall furnish, upon receipt of a Request for Proposal (RFP) or task order, all plant, labor, tools, equipment, and materials (except as indicated otherwise in the specifications) and perform all work in strict accordance with terms, conditions, special contract requirements, the specifications, drawings, attachments, and exhibits contained in the contract or incorporated by reference. The contractor may be required to meet compressed schedules to assist the facility staff with preparation for agency, command and JCAHO surveys. Facilities will be identified in each Task Order. Work will vary from site to site and will require extensive knowledge of the functional operation relating to the efficient use of the facility equipment, and facility support systems, and building structures. Since the facilities may be in full operation, the contractor shall minimize interference with the daily operation of the MTF.

C.2.2.3 The Contractor shall provide all planning, programming, administration, and management necessary to execute all work as specified. The contractor shall provide related services such as preparing and submitting required reports, performing administrative work and submitting necessary information as specified under this contract and within each task order.

C.2.2.4 The Government will provide the basic requirement to the Contractor detailing the work to be accomplished. The Contractor shall provide all labor, material and equipment in sufficient quantities to meet approved requirements. Upon receipt of a task order, the contractor shall coordinate the start of work with the Contracting Officer's Representative (COR) and the Medical facility point of contact identified in the task order. The Contractor shall complete all work under this contract in accordance with schedules established in each task order. Submittal dates will be included in the task order. These dates identify when submittals are due in the issuing office and other addresses identified in the task order. Types and numbers of submittals and dates and places for review meetings shall be established by each task order.

C.2.2.5 Task Orders: The activities to be performed by the Contractor under this contract and subsequent task orders are described in general terms below (this list is not all inclusive). The specific tasks to be performed will be identified in each task order. The Contracting Officer reserves the right to modify scopes and time periods in the task order. At the completion of each approved task order, the results, documented and conceptual, becomes the property of the Government. It remains the Contracting Officer's decision as to if there will be another task order awarded.

C.2.2.5.1 Work Plan: Work plan activities under this contract shall be conducted by and/or under the supervision of Registered Professional Engineers (PEs) according to the technical discipline(s) required for the work involved in conformance with the U.S. Army Corps of Engineers, Ft. Worth District Architectural and Engineering Instruction Manual (AEIM) (See Section J for AEIM). Throughout this contract, the term Engineers includes Architects. Work Plan activities may be ordered in several stages. Each stage is severable and distinct from the other stages:

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- a. Stage 1: Schematic Design Submittal (5% Design) (Army)
- b. Stage 2: Pre-Concept Control Data Submittal (10% Design) (Army)
- c. Stage 3: Project Engineering Brochure Submittal (15% Design) (Army)
- d. Stage 4: Concept Design Submittal (35% Design) (Army)
- e. Stage 5: Preliminary Design Submittal (65% Design)
- f. Stage 6: Final Design Submittal (100% Design)

C.2.2.5.1.1 Work plan activities may be ordered in several stages. Each stage shall be executed unilaterally or bilaterally by task order depending on clarity of requirement as defined in the UPB. Each stage is severable and distinct from the other stages. Each Stage stands alone as a complete deliverable from 0% Design, however, adjustments to prices shall be made accordingly if previous stages/tasks have already been performed by deducting the applicable line item(s). If a bilateral task order is desired, the COR will issue to the contractor a Request for Proposal (RFP). The contractor shall be responsible for describing the work involved and estimating the level of effort required to perform the requested work. Within the timeframe prescribed in the RFP (i.e. typically within seven (7) and not less than three (3) calendar days, however, there may be occasions when proposals may be required within twenty-four (24) hours), the contractor shall return to the COR a detailed description and cost proposal for items required to perform the work requested. Upon approval of the contracting officer and receipt of a task order, the contractor shall coordinate the start of work with COR and the Medical facility point of contact identified in the task order. The work shall be completed within the performance times provided on the task order. Work shall be in compliance with applicable codes. See Section H for Ordering Procedures.

C.2.2.5.1.2 Upon approval of the contracting officer and receipt of a task order, the contractor shall coordinate the start of work with the COR and the Medical facility point of contact identified in the task order. The work shall be completed within the performance times provided on the task order. Work shall be in compliance with applicable codes and references. All work plan documents shall be provided in a bound document or document set(s) which is/are clearly tabbed, indexed, and/or marked for easy use. As the Government expands its collaborative capability via the internet, the Contractor shall be required to interface work plan documents in part or whole with government computer systems for informational, collaborative and historical purposes. See Section H for Ordering Procedures.

C.2.2.5.1.3 The contractor shall provide work plan documents as specified in each task order. The contractor shall provide functionally complete and technically credible work plan documents regardless of how much information is initially provided by the Government. The contractor shall submit a draft of the work plan documents for government review within the time frame specified. Upon receipt of government comments, unless otherwise specified, the Contractor shall re-submit the document with all changes incorporated in the time frame specified. Each revision shall include a discrete revision number, date revised, summary of revisions referencing location in document(s), and revision number at point of revision. The final document shall be endorsed by the Facility Manager's signature. The approved final document shall bear the signature of the COR and be marked "approved final," signifying that the document is complete. See Section H for Ordering Procedures; See specifications for Design Quality Control (DQO) requirements.

AM#0001

a. **When professional services are ordered, the** document requires endorsement by PE Stamp(s) obtained or provided by the contractor according to the technical discipline associated with the work involved.

b. The document cover page (including cover pages of subsequent revisions) shall bear the signatures of the contractor's quality control, project and program managers, indicating their full review of and concurrence with the entire document submitted, attesting to its technical merit, quality and completeness.

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C.2.2.5.1.4 Work Plans at any stage may be regarded as execution documents and used as a basis to negotiate and awarded for construction, if deemed, by the Contracting Officer, that it is sufficient for use to negotiate and construct. Unless otherwise specified in each task order, to the extent required by the AEIM for that stage or provided in the contractor's coefficient, the execution documents shall include, but not be limited to, the following basic components, at no additional cost to the government, each separately endorsed by the Facility Manager's signature:

- a. Site Visit Memorandum
- b. Project Phasing Data Sheets
- c. Photographs of Existing Conditions
- d. Engineering Analysis and Calculations
- e. Detailed written Scope of Work
- f. Drawings
- g. Detailed Cost Proposal
- h. Specifications (from contract for pre-priced items, from other sources for non-pre-priced items, and for pre-priced items where specifications are not included in the contract)
- i. Catalog Cuts
- j. Detailed Construction Schedule (submittals, NTP, long lead items, phases, trades, etc.)
- k. Phasing Plan
- l. ENG FORM 4288 (RMS) Submittal Register
- m. DA Form 1354 (RMS) Transfer and Acceptance of Military Real Property

AM#0001 When professional services are ordered, documents c., d. and e (above) require endorsement by PE Stamp(s) obtained or provided by the contractor according to the technical discipline associated with the work involved.

The Execution Document Package (EDP) cover page (including cover pages of subsequent revisions) shall bear the signatures of the contractor's quality control, project and program managers, indicating their full review of and concurrence with the entire execution document package submitted, attesting to it's technical merit, quality and completeness.

The contractor shall submit a draft of the EDP for government review in the time frame specified. Upon receipt of government comments, unless otherwise specified, the Contractor shall re-submit the document with all changes incorporated within the time frame specified.

Upon receipt of the fully endorsed EDP, the COR will schedule and conduct negotiations with the Contractor to establish final construction scope and cost, and definitize the EDP. Upon completion of negotiations, unless otherwise specified, the Contractor shall re-submit the EDP with all negotiated changes incorporated within seven (7) calendar days from the date of negotiations.

Each revision shall include a discrete revision number, date revised, summary of revisions referencing location in document(s), and revision number at point of revision. The approved EDP shall bear the signature of the COR and be marked "approved final," signifying that the EDP is complete.

C.2.2.5.1.5 Errors, Omissions and Clarifications: Any engineering and technical services required to correct errors and omissions, and provide clarifications due to ambiguities in work plans shall be at no additional cost to the government.

C.2.2.5.2 Construction: The Contractor shall perform major repair and minor construction defined in each task order. The Contractor shall provide all labor, material and equipment in sufficient quantities to meet approved requirements. Upon receipt of a task order, the contractor shall coordinate the start of work with Contracting Officer's Representative (COR) and the Medical facility point of contact identified in the task order. The Contractor shall be capable of

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mobilizing the required work force within ten (10) calendar days of Notice to Proceed (NTP) which may be issued at the time of task order award. The work shall be completed within the performance times provided on the task order. Work shall be in compliance with applicable codes as described in this contract (See Section H for Ordering Procedures; See Specifications for Contractor Quality Control (CQC) requirements)

a. **Submittals:** Prepare and submit project specific documents in accordance with the submittal requirements under the task order and this contract.

b. **Pre-Construction Conference:** Schedule a pre-construction conference with the Contracting Officer's Authorized Representative for review and coordination of the items of work as described in the final negotiated scope of work.

c. **Work Progress:** Begin work in accordance with the approved work plan following the approved work schedule. As work progresses, the contractor shall meet, but not be limited to, the following basic requirements:

1. **Safety:** Adhere to the approved plan for site safety and health, prepared and submitted for the individual task order.

2. **CQC:** Adhere to the approved quality control program, prepared and submitted for the individual task order.

3. **Weekly Progress Reports:** Submit weekly progress reports starting second week after issuance of the task order and post to Contractor's Internet Web Site.

4. **Monthly Progress Photographs:** Submit monthly progress photographs starting with first invoice for progress payment. These photographs shall be furnished in the form of high resolution digital *.jpg images on 3-1/2" floppy computer disks, provided with each progress invoice and posted to Contractor's Internet Web Site.

5. **As-Built Drawings:** As the project progresses, the contractor shall maintain redline as-built drawings at the site, which reflects the status of the project. At the completion of the project the contractor shall submit final as-built drawings.

6. **Tests:**

(a) Conduct tests of new and modified system/equipment and obtain Government inspection/approval.

(b) At an agreed time stated in the task order, prior to the completion of the installation/modification, the Contractor shall submit to the Contracting Officer and Authorized Installation Representative a copy of a proposed testing plan necessary to prove the system/equipment meets the operating standards promulgated by the design. This testing shall meet JCAHO standards. As a minimum, this testing plan shall contain:

- 1) Project number
- 2) System/Equipment description
- 3) Specific requirements for system/equipment test
- 4) Results of test

(C) After approval by the Contracting Officer, the Contractor shall schedule the implementation of this testing plan at a time convenient for the Contracting Officer to have Authorized Installation Representative observe.

7. **O&M Manuals:** Prepare operation and maintenance manuals, for the new and/or modified system/equipment.

(a) Operating manuals will be used by Government personnel at the installation to operate the modified system/equipment, and maintenance manuals will be used to identify and perform required preventive and corrective maintenance on the installed/modified system after completion of all work. (See Section H: operation and Maintenance 52.9020-4001 MED)

(b) Operation and maintenance procedures and documentation utilized in the operating and maintenance manuals shall meet JCAHO, AHA, and NFPA standards.

(c) Operating manuals shall be in accordance with ER 25-345-1, comprehensive, and cover the total operation. The operating manuals shall contain step-by-step methods for operating each separate component and for operating the systems in a systematic manner. These manuals shall show the location of the item being described and provide a clear and concise narrative description of the item, its operating function, characteristics, and its interrelationship with other system components. The maintenance manual shall provide comprehensive details of complex components and parts with illustrations of how the components and parts are systematically

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arranged and located. The maintenance instructions shall prescribe the manufacturer's recommended schedule for preventive maintenance plans. The instructions shall clearly identify seasonal maintenance requirements and state the frequencies for all maintenance and/or operations.

(d) The manuals shall include the manufacturer's name, model number, service manual, and parts list for each major system component and subcomponent.

(e) Framed instructions, encased in environmentally protective covering, shall be prepared in a manner consistent with the final configuration of the system/equipment at the end of the task order. They shall include system/equipment diagrams and condensed operating and maintenance instructions. A complete set shall be placed at strategic operating locations on the system/equipment. The operating and maintenance manuals shall be provided in a bound document which is clearly tabbed, indexed, and marked for easy use.

8. O&M Training:

(a) Prepare training program and train Government personnel in operation and maintenance of new and modified system/equipment

(b) The training program shall be based on ER 25-345-1 and in accordance with JCAHO standards as specified below.

(c) The program shall provide instruction on operation, troubleshooting, maintenance and repair of equipment and systems modified or installed under each task order. Instructions shall include both a classroom phase and a practical application phase. The course material shall include the operation and maintenance plans and manuals as instructional materials. The program shall be conducted in facilities directed by the Government.

(d) At an agreed time stated in the task order, prior to the completion of the installation/modification, the Contractor shall prepare a training outline and submit to the Government for review. The training course outline shall identify for each block of instructions: the teaching objectives, the time and length of instruction, the location of instruction, the training aids required, the recommended audience, and a brief description of the contents. The training course outline shall be assembled in a notebook, tabbed for each block of instructions.

(e) The Contractor shall provide training for Government personnel to operate, maintain, and repair equipment and systems after the completion of system testing in accordance with each task order.

9. Warranties: Provide equipment and construction warranties.

10. Submit certified list of standard equipment and MFRP service organizations.

11. Certify computer media.

12. **Final Payment:** All task order and contract requirements must be met prior to request for final payment.

13. **Problem Identification:** The Contractor shall identify and document utility problems, failures, and user errors that are or may be a threat to the patient care environment, user mission, safety, security and any other code requirement. When problems are identified, the Contractor shall notify the Contracting Officer for decision on corrective action.

14. Warranty Service Calls:

(a) The Contractor shall furnish to the Contracting Officer the names of local service representatives and/or Contractors that are available for warranty service calls and who will respond to a call within the time periods stated in Section H, WARRANTY.

(b) The names, addresses, and telephone numbers for day, night, weekend, and holiday service responses shall be furnished to the Contracting Officer and also posted at a conspicuous location in each mechanical and electrical room or close to the unit.

C.2.2.5.3 Negotiations:

C.2.2.5.3.1 The negotiations, between the Contracting Officer, or Contracting Officer's Authorized Representative and the Contractor, shall begin at a time prescribed by the Government, and convenient to the Contractor. Details covered shall include, but not necessarily be limited to any Work Plan element.

C.2.2.5.3.2 Implementation of the action shall not begin until agreement has been reached between the Contractor and the Government on all Work Plan element(s) and a task order is issued accordingly.

C.2.2.6 **Public Affairs:** The Contractor shall not publicly disclose any data generated or reviewed under this contract. The Contractor shall refer all requests for information concerning site conditions to the Contracting Officer for comment.

C.2.3 Medical Facility Staff Interface:

C.2.3.1 The Contractor shall work in conjunction with the Medical Treatment Facilities staff and other contractor personnel providing services in the facility.

C.2.3.2 The Contractor's Project Manager shall provide a briefing to the staff prior to starting work. The briefing will provide the scope of work of the task order and a schedule for completion of the work. While the contractor is on site, weekly coordination meetings shall be conducted with the facility points of contact. The purpose of these meetings is to anticipate and schedule all operations where mutual effort by both groups is required.

C.2.4 Safety:

C.2.4.1 The Contractor shall comply with Corps of Engineers Manual EM-385-1-1 and safety requirements as specified herein.

C.2.4.2 The Contractor shall establish a comprehensive safety program that shall consist of engineering, education, training, and enforcement of safety standards. All equipment and facilities shall be maintained in accordance with safe engineering practices. In general, safety engineering involves controlling the work situation to minimize safety hazards.

C.2.4.3 The Contractor shall be responsible for planning, organizing, implementing and managing an effective Safety Program that complies with regulatory directives; accident prevention and control, safety education and promotion accident investigation, analysis, and reporting; and coordination in support of occupational health and sanitation.

C.2.4.4 The Contractor shall conduct a monthly safety meeting for all employees. These meetings shall be documented and maintained on file by the contractor.

C.2.4.5 Accident Reports. The Contractor shall comply with accident reporting requirements as outlined in the U.S. Army Regulation No. 385-40, that will be furnished by the Contracting Officer. All accident reports shall be submitted to the Contracting Officer or Contracting Officer Representative designated in each task order.

C.2.5 Building Security:

C.2.5.1 The Contractor will be provided with keys to allow access to all rooms when required to perform the work. Keys provided to the contractor shall not be removed from the premises of the medical facilities buildings, duplicated, or issued to any individual to be retained in his possession while not physically performing duties included in this specification. All lost keys shall be replaced at the contractor's expense. In the event that a master key is lost by contractor personnel, the contractor shall, at the discretion of the contracting officer, replace all keys and locks in that system. A keying scheme compatible with the remaining building lock system and an equal number of keys existing in the old system shall be furnished at the contractor's expense.

C.2.5.2 Whenever rooms or areas are locked, Contractor employees shall not permit the use of keys in their possession by other persons for the purpose of gaining access to such locked rooms or areas, and, likewise, contractor employees shall not open locked rooms or areas to permit

entrance by persons other than the contractor's employees in the fulfillment of their duties. All rooms found locked shall not be left unattended during the assessment process and shall be locked by contractor personnel after completion of their assigned duties.

C.2.5.3 Upon the completion of their duties, Contractor personnel shall turn off all lights in unoccupied areas, unless otherwise coordinated with the Facility Manager/MEDCOM Quality Assurance(QA) Personnel/designated point of Contact (POC/COR). It shall be the responsibility of contractor personnel observing open and/or unlocked windows in their respective work areas to close and secure such windows. Where difficulty is encountered in keeping areas locked or windows closed and locked, the Facility Manager/MEDCOM QA Personnel/designated Point of Contact (POC)/COR shall be notified.

C.2.5.4 There are areas in the facility that require all personnel entering that area to sign a sign-in/ sign-out sheet. The Contractor shall comply with local MEDCOM policies in these areas.

C.2.6 Site Security: The Contractor shall provide site security (fencing, lighting, or guard services) as may be required by each task order. However, at a minimum, the contractor shall maintain the site and all other contractor controlled areas in such a manner as to minimize the risk of theft, vandalism, injury, or accident. The contractor shall comply with site security regulations.

C.2.7 Documentation: The Contractor shall implement, maintain, and control a system for identification, preparation, reproduction, distribution, and maintenance of all documentation, dates and information necessary for its internal management as well as for Government management of the individual projects and the total program.

C.2.8 Presentations and Meetings: During the life of this contract and individual task orders numerous meetings (i.e. project line item reviews, and site problem resolutions) will be held between representatives of the Government and the Contractor at no additional cost to the government. Time and locations of these meetings shall be identified as required. The Prime Contractor shall be responsible for preparing the minutes of all such meetings. A written draft of the minutes shall be submitted, within 2 working days after the meeting, to the Contracting Officer for review. Upon agreement of the text, the Contractor will transmit the minutes to the Contracting Officer by a serial letter. This document will become the official record of the meeting. Include in the minutes, as a minimum, names of attendees, firms represented, date and place of meeting, subjects discussed, commitments made, conclusions and decisions reached. (See Section 01043 Correspondence)

C.2.9 Permits: The Contractor is responsible for identifying and obtaining all permits from Federal, State, local, or installation agencies (See Section B)

C.2.10 Contractor Quality Control (CQC) Program: The Contractor shall develop, implement, and document an effective quality control program. This requirement shall be performed in accordance with Contract Section E, INSPECTION AND ACCEPTANCE and Specification CONTRACTOR QUALITY CONTROL (CQC) as they apply. The QCP shall include a generic site quality control plan. This generic site quality control plan shall be submitted to the Contracting Officer for approval within 30 days, or an agreed to shorter period, after contract award. This plan shall be capable of being adapted to the sites specified on the individual task orders.

C.2.11 Contractor Performance: The above outline of the principle features of work does not in any way limit the responsibility of the contractor to perform all work and furnish all plant, labor and equipment required by the specifications, plans, and drawings referred to herein.

C.2.12 Environmental Compliance

C.2.12.1 Responsibility: The Contractor is responsible for knowledge of and compliance with all environmental laws, regulations, and programs of the installation, and County, State and Federal agencies whose programs, policies, or laws may relate to the performance of this contract. Compliance with the Environmental Protection Program is included by complying with applicable standards for the prevention, control and abatement of environmental pollution in full cooperation with the Installation, Federal, State, and local Governments, but compliance is not limited to this program alone.

C.2.12.2 Penalty: Penalty charges resulting from citations against Department of Defense, Department of the Army, or its agents, officers, or employees due to the contractor's failure to comply with environmental laws, regulations, and programs that relate to or may arise under the performance of this contract may be deducted or set-off by the Government from any monies due the contractor, and with respect to such citations, the contractor shall further take any remedial actions as directed by such agencies.

C.2.12.3 Asbestos and Lead-Based Paint: When work is in areas suspected of containing asbestos or lead-based paint, the contractor shall notify the Contracting Officer's Authorized Representative immediately. If asbestos and/or lead-based paint are encountered during the course of a project, work shall cease immediately and the Contracting Officer's Authorized Representative notified.

C.2.12.4 Environmental Protection: The Contractor shall perform all work in such a manner as to minimize the pollution of air, water, or land and to control noise and dust within reasonable limits and in accordance with federal, state, and local environmental laws.

C.3 MANAGEMENT

C.3.1 Management Plan: The manpower and staffing requirements for work will vary. Work requirements are set forth herein. The Contractor shall employ adequate manpower capabilities to perform Medical Treatment Facility maintenance, repair and minor construction as specified in each individual task order. The Contractor shall prepare and maintain a management plan to perform tasks orders as they are assigned by the Contracting Officer. The plan shall indicate all categories of personnel employed by the contractor and any subcontractors that will be utilized by the contractor. The plan shall delineate how the contractor will perform work (i.e. Standard Operating Procedures) and maintain adequate staffing and span of control in all of the areas and on multiple task orders, which shall include a comprehensive staff phasing rationale at the corporate, regional and site-specific levels, based on workload volume, dollar value and distribution. This plan shall also provide the lines of communication for both the contractor's organization and how the contractor will manage subcontract work. This plan shall delineate procedures for solving non-performance/non-compliance issues in a timely manner including verification of solution progress within the contractor's organization and feedback to MEDCOM components (i.e. MTF, RMCs, HFP, MEDCOM HQ, etc) and COR. This plan shall include outlines and schedules for a professionally produced MEDJOC Program Video, MEDJOC Program User Guide, MEDJOC Program Brochure, and MEDJOC Program Internet Web Page. The plan shall delineate how the Contractor will provide for and maintain face-to-face collaboration capability with the MEDCOM Support Team, Ft. Worth. The contractor shall clearly quantify all elements that make up the resulting coefficients in the bid schedule. This plan shall be submitted with the Contractor's Technical Proposal.

C.3.1.1 MEDJOC Program Video: The MEDJOC Program Video shall be used to broadcast, to Contractor's employees, subcontractors, government administrator's, and government users alike, the contractor's and government's corporate philosophies and visions as it relates to the MEDJOC Program, with endorsements from past users, and be used to quickly acclimate all viewers to it's requirements and processes. In addition to contractor and government corporate segments, the video shall include but not be limited to segments describing and displaying the MEDJOC Program's mission, process, projects, deliverables, coordination requirements (i.e.

within the contractor's organization, with its sub-contractor's, with the government, etc.), lines of authority and communication within the government's and contractor's organizations, geographic boundaries and locations of government and contractor sites, contractor's expectations of its own personnel and sub-contractors (i.e. quality, cost, responsiveness, and customer care, etc.) based on the awarded contract which includes the contractor's technical proposal. All aspects of video development shall be coordinated with the COR and other government offices as required for review and approval. The video shall be appropriate in length to cover all aspects of the MEDJOC process and is anticipated to be not more than 1 hour long. The approved video shall be completed and posted on the contractor's Internet website for unlimited free access to the government with 2 copies on CD-ROM or DVD and 2 copies on Video Cassette submitted to the Contracting Officer within 180 calendar days of contract award. The approved video shall become the property of the government. See Section J for Video Production Standards.

C.3.1.1.1 MEDJOC Program Marketing and Training Video Outline: The outline for a professionally produced MEDJOC Program video shall include but not be limited to a general description of how the video will be produced, what the video is intended to accomplish, and structure of the video (i.e. a list of proposed segments and their topics).

C.3.1.1.2 MEDJOC Program Marketing and Training Video Schedule: The schedule for a professionally produced marketing and training video shall include the basic steps for producing the video. The schedule shall show the durations and interrelationships of all steps. The total schedule duration shall not be more than 180 calendar days.

C.3.1.2 MEDJOC Program User Guide: The MEDJOC Program User Guide is a supplement to the MEDJOC Program video and is intended to be used as a "handy reference" tool for Contractor's employees, subcontractors, government administrator's, and government users alike to quickly and properly utilize the MEDJOC Program at any step in the process. The guide shall be an Internet web-based interactive tool. The guide shall incorporate the contractor's and government's corporate vision and mission statements as it relates to the MEDJOC Program, and shall contain summary and intermediate steps depicting the program's requirements and processes (i.e. within the contractor's organization, with its sub-contractor's, with the government, etc.), lines of authority and communication within the government's and contractor's organizations, geographic boundaries and locations of government and contractor sites, contractor's expectations of its own personnel and sub-contractors (i.e. quality, cost, responsiveness, and customer care, etc.) based on the awarded contract which includes the contractor's technical proposal. All aspects of guide development shall be coordinated with the COR and other government offices as required for review and approval. The guide shall be appropriate in length to cover all aspects of the MEDJOC process. The approved guide shall be completed and posted on the contractor's Internet website for unlimited free access to the government with 2 copies each on separate CD-ROMs and 2 bound paper hardcopy sets submitted to the Contracting Officer within 90 calendar days of contract award. The approved guide shall become the property of the government. See Section J for Web Page Standards.

C.3.1.2.1 MEDJOC Program User Guide Outline: The outline for a professionally produced user guide shall include but not be limited to a general description of how the guide will be produced, what the guide is intended to accomplish, and structure of the guide (i.e. a list of proposed topics and their layouts).

C.3.1.2.2 MEDJOC Program User Guide Schedule: The schedule for a professionally produced user guide shall include the basic steps for producing the guide. The schedule shall show the durations and interrelationships of all steps. The total schedule duration shall not be more than 90 calendar days.

C.3.1.3 MEDJOC Program Brochure: The MEDJOC Program Brochure is a supplement to the Marketing and Training video and User guide. The brochure is intended to be used as a "quick reference" tool for Contractor's employees, subcontractors, government administrator's, and

government users alike to quickly obtain an understanding of the significant features of the MEDJOC Program it's mission, process, projects, and endorsements. The brochure shall incorporate the contractor's and government's corporate vision and mission statements as it relates to the MEDJOC Program, and shall contain major steps depicting the program's basic requirements and process based on the awarded contract which includes the contractor's technical proposal. All aspects of brochure development shall be coordinated with the COR and other government offices as required for review and approval. The brochure is anticipated to be printed on both sides, and not less than a 3 color process on a tri-folded, 8-1/2" x 11", 28 pound photo/laser paper. The approved brochure shall be completed and posted on the contractor's Internet website for unlimited free access to the government with 2 copies each on separate 3-1/2" double sided, high density, IBM compatible floppy computer disks and 500 paper hardcopy sets submitted to the Contracting Officer within 30 calendar days of contract award. The Contractor shall provide any necessary software at no additional cost to the government. The approved brochures shall become the property of the government.

C.3.1.3.1 MEDJOC Program Brochure Outline: The outline for a professionally produced user brochure shall include but not be limited to a general description of how the guide will be produced, what the guide is intended to accomplish, and structure of the guide (i.e. a list of proposed topics and their layouts).

C.3.1.3.2 MEDJOC Program Brochure Schedule: The schedule for a professionally produced user brochure shall include the basic steps for producing the brochure. The schedule shall show the durations and interrelationships of all steps. The total schedule duration shall not be more than 30 calendar days. C.3.1.1

C.3.1.4 MEDJOC Program Internet Web Page: The MEDJOC Program Internet Web Page shall be used to provide a single point unlimited free access to all information regarding the MEDJOC Program for Contractor's employees, subcontractors, government administrator's, and government users alike. The contractor shall design and maintain a summary and any subsequent web pages required to provide continual, reliable and virus free online access (i.e. 24 hours/day, 7 days a week) to a minimum of the following information:

- a. MEDJOC Program Marketing and Training Video
- b. MEDJOC Program User Guide
- c. MEDJOC Program Marketing Brochure
- d. MEDJOC Contract
- e. Contractor's Standard Operating Procedures
- f. Map of Government and Contractor Sites and MEDJOC Project Locations
- g. Project Documentation Keyed to Map (i.e. status, photos, daily reports, evaluations, etc.)
- h. Organization Charts Keyed to Map (i.e. personnel, titles, phone #'s, e-mail links, etc.)
- i. Links to Government Web Pages (i.e. MST-Ft. Worth, AMEDD, ACSIE&FM, HFFA, etc.)

All aspects of web page development shall be coordinated with the COR and other government offices as required for review and approval. The Contractor shall provide any necessary software at no additional cost to the government. The approved web page shall be completed and ready for unlimited free access to the government for items C.3.1.4.c through C.3.1.4.i within 30 calendar days, item C.3.1.4.b within 90 calendar days, and item C.3.1.4.a within 180 calendar days respectively of contract award. See Section J for Web Page Standards.

C.3.1.4.1 MEDJOC Program Internet Web Page Outline: The outline for a professionally produced internet web page shall include but not be limited to a general description of how the web page will be produced, what the web page is intended to accomplish, and structure of the web page (i.e. summary page layout, a list of proposed links and their layouts).

C.3.1.4.2 MEDJOC Program Internet Web Page Schedule: The schedule for a professionally produced internet web page shall include the basic steps for producing the web page. The

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schedule shall show the durations and interrelationships of all steps. The total schedule duration shall not be more than 180 calendar days.

C.3.1.5 Face-To-Face Collaboration: The Contractor shall delineate how they will provide for and maintain flexible, reliable, clear and uninterrupted face-to-face collaboration capability with the MEDCOM Support Team, Ft. Worth. The purpose of this collaboration shall include but not be limited to weekly project progress reviews, negotiations, over the shoulder work plan reviews, and other program meetings as needed. The Contractor intends to use Video Teleconferencing technology in lieu of "in-person" face-to-face collaboration, then the Contractor shall provide and maintain any necessary connectivity, equipment and/or software at no additional cost to the government. The approved collaboration method shall be ready for use within 30 calendar days of contract award. The approved brochures shall become the property of the contractor. See Section J for Video Teleconferencing and Collaborative Equipment Standards.

C.3.2 Management Staff Stability: The Contractor's Management Plan shall delineate management practices to maintain a stable management staff with ability and experience as required under this contract.

C.3.3 Staff Changes: The Contractor's Management Plan shall delineate management practices to effectively manage staff changes. Any changes from the proposed and accepted management staff must be approved by the Contracting Officer. A request for change to the approved staff, as set forth in his technical proposal, must be submitted in writing to the Contracting Officer 30 days in advance of proposed changes, and shall include current resume(s) as they apply.

C.3.4 Temporary Assignments: The Contractor's Management Plan shall delineate management practices to effectively manage temporary assignments (not to exceed 90 days). Other equally credentialed individuals may be designated to temporarily act for approved staff members; however, forty-eight (48) hours advance notice in writing of such change shall be provided to the Contracting Officer and shall include current resume(s) as they apply.

C.3.5 Restrictions: The contractor shall establish and maintain clear lines of authority with its own personnel and subcontractors.

C.3.5.1 Contractor Staff: The contractor shall establish and maintain a policy restricting personnel relationships (i.e. "personal" or perception of nepotism) that may cloud objectivity within the contractor's chain of command.

C.3.5.2 Subcontractors: The contractor shall not engage in layering of subcontractors. The contractor shall manage all subcontractors directly, rather than through another subcontractor. Program Manager, Project Managers, Project Superintendents, CQC System Manager, and Safety Engineer may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.6 Resumes: Resumes of all management and engineering personnel shall be submitted as part of the technical proposal. Resumes that have been previously submitted to the Government need not be a part of the individual task order proposal. Military and civilian employees of the U.S. Government shall not be employed by the contractor in performance of any work under the contract, e.g., during off-duty hours, regular hours, or while on annual leave.

C.3.7 Identification Badges: The Contractor shall provide Identification Badges to each employee. The badge shall have the company name, employee's photograph, name, and position title displayed. All Contractor employees must wear the badge in a visible location at all times while working in any Medical Treatment or other Facility under this contract.

C.3.8 Management Staff:

The Contractor must possess a variety of skills in order to perform this effort. There is no limitation on the use of employees with qualifications exceeding those listed minimum qualification standards as set forth below. Unless otherwise specified under this contract, the management staff shall be full-time employees of the prime contractor.

C.3.8.1 Program Manager

C.3.8.1.1 Qualifications: The Program Manager shall have a four-year degree in engineering or construction management; minimum experience of ten years managing and supervising general commercial construction (two years of which included managing and supervising multiple general commercial construction projects in several different locations over several states, five years of which included managing and supervising engineering and medical facilities construction, repair, and alteration, one year of which included Job Order Contracting experience); must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract; possess strong ability to recruit and manage qualified subcontractors and personnel in all associated trades and disciplines; must be able to respond in a timely manner to all contractual agreements, instructions, and inquiries from authorized government personnel; must understand and have knowledge of government service and construction requirements, and this contract in total; must be capable of preparing project proposals, be authorized to negotiate, and accept individual task orders issued under this contract.

C.3.8.1.2 Responsibilities: The Program Manager shall have the direct responsibility for the entire Medical Program executed under this contract and shall report directly to the Head of the Company. The Program Manager shall oversee task accomplishment, administration of all instructions in the task orders during the life of the contract. The Program Manager shall be responsible for the complete coordination of all work under the individual task orders. The contractor Program Manager shall be responsible for ensuring that adequate internal controls and review procedures are followed in order to eliminate conflicts, errors and omissions and for ensuring that all technical requirements are met. This individual shall serve as the single point of contact and liaison between the Contracting Officer and the Contractor. The Program Manager shall conduct weekly progress reviews on all projects with the Contracting Officer and/or Representative.

The Program Manager may provide, at no additional cost to the government, professional engineering and technical services. If the Program Manager elects to provide professional engineering and technical services, then all qualifications and responsibilities of the Project Engineer and Technical Support and Engineering Services requirements under this contract must be met.

The Program Manager may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.2 Project Managers:

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C.3.8.2.1 Qualifications: The Project Managers shall have a four-year degree in engineering or construction management; minimum experience of **five years (or minimum experience of ten years in lieu of a four year degree)** managing and supervising general commercial construction (one year of which included managing and supervising multiple general commercial construction projects in several different locations over several states, one year of which included managing and supervising medical facilities construction, repair, and alteration, one year of which included Job Order Contracting experience); must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract; possess strong ability to recruit and manage qualified subcontractors and personnel in all associated trades and disciplines; must be able to respond in a timely manner to all contractual

agreements, instructions, and inquiries from authorized government personnel; must understand and have knowledge of government service and construction requirements, and this contract in total; must be capable of preparing project proposals, be authorized to negotiate, and accept individual task orders issued under this contract.

C.3.8.2.2 Responsibilities: The Project Managers shall execute the work under the direction of the Program Manager. The Project Managers shall be responsible for the overall management and coordination of individual task orders and shall be the central points of contact with the Government for performance of all work under their assigned oversight.

The Project Managers may provide, at no additional cost to the government, professional engineering and technical services. If the Project Managers elects to provide professional engineering and technical services, then all qualifications and responsibilities of the Project Engineer and Technical Support and Engineering Services requirements under this contract must be met.

Full-time on-site Project Managers may also serve as a Superintendent, Site CQC Officer, and/or Site Safety Officer for a combined role position. However, if this combined role position is chosen, then all qualifications and responsibilities of each requirement under this contract must be met.

Project Managers may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.3 Project Superintendents:

C.3.8.3.1 Qualifications: Project Superintendents shall have five-years experience as superintendents in general commercial construction (one year of which included medical facilities construction, repair, and alteration) as it applies under this contract; must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract.

C.3.8.3.2 Responsibilities: These individuals shall provide full-time supervision for the execution of the work on site as stated in the individual task order(s) as they apply. The Project Superintendents shall report directly to a designated Project Manager. The Project Superintendents shall conduct weekly progress reviews on all projects under their assigned oversight with the Facility Managers and/or Representatives.

This requirement may be combined with the requirement for a Site Project Manager, Site CQC Officer, and/or Site Safety Officer for a combined role position. However, if this combined role position is chosen, then all qualifications and responsibilities of each requirement must be met.

Project Superintendents may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.4 Project Engineers:

C.3.8.4.1 Qualifications: Project Engineers must have a degree in engineering in their unique technical disciplines from a recognized four-year college; shall be registered professional engineers with ten-years experience in engineering, design and design review of medical facilities construction, repair, and alteration projects as they apply to the task order or shall at a minimum have three-years experience in engineering, design and design review of medical facilities construction, repair, and alteration projects as they apply to the task order under the supervision of a registered professional engineer with ten-years experience in engineering, design and design review of medical facilities construction, repair, and alteration projects as they apply to the task

order. These Professionals must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract.

C.3.8.4.2 Responsibilities: These individuals shall provide professional engineering and technical services in their unique technical disciplines as stated in the individual task orders as they apply.

This requirement may be subcontracted. However, if this requirement is subcontracted, then all qualifications and responsibilities of this requirement under this contract must be met.

C.3.8.5 Technical Support Staff, Non-Engineer:

C.3.8.5.1 Qualifications: Individuals shall have three-years experience in the related technical field in service or construction work as it applies; must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract.

C.3.8.5.2 Responsibilities: The Technical Support Staff shall include but not be limited to technicians (i.e. estimators, draftsmen, and CADD operators) and instrumentation specialists (i.e. DDC, fire, security/intrusion detection).

This requirement may be subcontracted. However, if this requirement is subcontracted, then all qualifications and responsibilities of this requirement under this contract must be met.

C.3.8.6 Contractor Quality Control (CQC) System Manager:

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C.3.8.6.1 Qualifications: The CQC System Manager must have a degree in engineering from a recognized four-year college; shall be a registered professional engineer; shall have formal QC education and/or training (see Specification, Contractor Quality Control) in building construction inspection; must have a minimum of five years **(or ten years in lieu of a four year degree and professional registration)** experience as a CQC manager and/or senior CQC inspector in construction work as it applies under this contract; must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract. CQC System Manager must be capable of establishing and maintaining an effective quality control system that is in compliance with Contract Section E, INSPECTION AND ACCEPTANCE and Specification, CONTRACTOR QUALITY CONTROL as they apply.

C.3.8.6.2 Responsibilities: This individual shall have direct responsibility for the CQC Program and shall report directly to the Head of the Company. The CQC System Manager shall participate in the weekly program level progress review and report on CQC compliance regarding all projects with the Contractor's Program manager, the Contracting Officer and/or Representative.

This requirement may be combined with the requirement for a Safety Engineer for a dual role position. However, if this dual role position is chosen, then all qualifications and responsibilities of each requirement under this contract must be met.

The CQC System Manager may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.7 CQC Officers:

C.3.8.7.1 Qualifications: Full-time on-site and Program level CQC Officers shall have formal QC education and/or training (see Specification, Contractor Quality Control) in building construction inspection. These CQC Officers shall have five-years experience as CQC Officers in construction work as it applies under this contract. The contractor shall furnish written proof of adequate CQC experience and training for government consideration of this dual role; must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and

other work covered by this contract. CQC Officers must be able to execute all CQC Program requirements.

C.3.8.7.2 Responsibilities: These individuals shall report directly to the CQC System Manager and have direct responsibility for the site quality control.

This requirement may be combined with the requirement for a Safety Officer for a dual role position. However, if this dual role position is chosen, then all qualifications and responsibilities of each requirement under this contract must be met.

CQC Officers may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.8 Safety Engineer:

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C.3.8.8.1 Qualifications: The Safety Engineer must have a degree in engineering from a recognized four-year college; shall be a registered professional engineer with five-years **(or ten years in lieu of a four year degree and professional registration)** safety engineering experience in commercial construction. The Safety Engineer must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract. The Safety Engineer must be capable of establishing and maintaining an effective safety program that is in compliance with this contract.

C.3.8.8.2 Responsibilities: This individual shall have direct responsibility for the Safety Program and shall report directly to the Head of the Company. The Safety Engineer shall participate in the weekly program level progress review and report on Safety Program compliance regarding all projects with the Contractor's Program manager, the Contracting Officer and/or Representative.

This requirement may be combined with the requirement for a CQC Manager for a dual role position. However, if this dual role position is chosen, then all qualifications and responsibilities of each requirement under this contract must be met.

Safety Engineer may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.9 Safety Officers:

C.3.8.9.1 Qualifications: Full-time on-site and Program level Safety Officers shall have formal Safety education and/or training in building construction inspection. These Safety Officers shall have five-years experience as Safety Officers in commercial construction work as it applies under this contract. The contractor shall furnish written proof of adequate safety experience and training for government consideration; must be familiar and conversant with the various codes and standards applicable to Medical Treatment Facility and other work covered by this contract. Safety Officers must be able to execute all Safety Program requirements.

C.3.8.9.2 Responsibilities: These individuals shall report directly to the Safety Engineer and have direct responsibility for the site safety.

This requirement may be combined with the requirement for a CQC Officer for a dual role position. However, if this dual role position is chosen, then all qualifications and responsibilities of each requirement under this contract must be met.

Safety Officers may not oversee a sub-contractor that they worked for within a 1-year period of being assigned to oversee work under this contract.

C.3.8.10 Contract Administrator (CA):

C.3.8.10.1 Qualifications: As a minimum, the CA should have extensive background in accounting and bookkeeping, should have computer experience and be a proficient typist. Must be capable of dealing with all levels of management, with Government officials, as well as with subcontractor personnel. Must be capable of establishing, managing, and maintaining file systems. Must be familiar with proposal preparation; must know and understand the Job Order Contract and concept. Must have knowledge and understanding of Government Labor laws and regulations as well as subcontractor payrolls. The CA should also have the capability of acting as a purchasing agent.

C.3.8.10.2 Responsibilities: This individual shall have direct responsibility for contract administration.

C.4 REFERENCES

The publications listed below form the basis for the work under this contract. Additional references may be identified as required in task orders. Work done under individual task orders shall utilize the latest issue of the publication dated at the time of award of the task order. When a required publication is not referenced in this list or the task order, the Contractor shall utilize one that has national applications. Where conflicts arise between publications, the most stringent shall apply.

C.4.1 American Hospital Association (AHA):

AHA Maintenance Management for Health Care Facilities

C.4.2 American National Standards Institute (ANSI):

ANSI C2 National Electric Safety Code
ANSI Z88.2 Practices for Respiratory Protection

C.4.3 American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE):

Handbooks Refrigeration Fundamentals
HVAC System and Equipment
HVAC Applications

Standard 15 Safety Code for Mechanical Refrigeration

Standards Ventilation for Acceptable Indoor Air Quality

C.4.4 American Society of Mechanical Engineers (ASME)

ASME-13 Boiler and pressure Vessel Code; Section IV, Heating Boilers
ASME-16 Boiler and Pressure Vessel Code; Section VIII, Pressure Vessels Division 1
Basic Coverage
ASME-17 Boiler and Pressure Vessel Code; Section IX, Welding and Brazing
Qualifications

C.4.5 Americans with Disability Act (ADA):

Handbook

C.4.6 Code of Federal Regulations (CFR):

29 CFR 1910 Occupational Safety and Health Standards - General Construction

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29 CFR 1926 Occupational Safety and Health Standards - Construction Industry

C.4.7 Department of the Air Force Regulations (AFR):

AFR 88-50 Air Force Facilities

C.4.8 Department of the Army, Corps of Engineers Manual (EM):

EM 385-1-1 Safety and Health Requirements Manual

C.4.9 Department of the Army, Corps of Engineers Regulation (ER):

ER 25-345-1 Military Publications System Operation and Maintenance Documentation

C.4.10 Department of the Army Regulation (AR):

AR 385-40 Accident Reporting Standards

C.4.11 Department of the Army Technical Manuals (TM):

TM 5-810-1 Mechanical Design, Heating, Ventilating, and Air Conditioning

TM 5-810-4 Compressed Air

TM 5-810-5 Plumbing

TM 5-811-1 Electric Power Supply and Distribution

TM 5-811-2 Electric Design, Interior Electrical System

TM 5-811-14 Coordinated Power Systems Protection

TM 5-815-3 Heating, Ventilation, and Air Conditioning (HVAC)

C.4.12 Department of the Army, Corps of Engineers, Architectural and Engineering Instructions (AEI):

AEI Design Criteria

AEI Medical Design Standards

C.4.13 Department of the Army, Corps of Engineers, Ft. Worth District Manual:

Engineering Guidance Design Manual for Architect Engineers

C.4.14 Joint Commission for the Accreditation of Health Care Organizations (JCAHO):

JCAHO Joint Commission for the Accreditation of Health Care Organizations

C.4.15 Military Handbooks (MIL-HDBK):

MIL-HDBK-1008B Fire Protection

MIL-HDBK-1191 Medical and Dental Treatment Facilities, Design and Construction
Criteria

C.4.16 National Institute of Technology and Standards:

Handbook 135 Life Cycle Cost Analysis

C.4.17 National Fire Protection Association, Inc. (NFPA):

NFPA 31 Installation of Oil Burning Equipment

NFPA 54 National Fuel Gas Code

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NFPA 70	National Electric Code
NFPA 99	Health Care Facilities
NFPA 101	Safety to Life from Fire in Building and Structures

C.4.18 National Association of Plumbing - Heating - Cooling Contractors (NAPHCC):

NAPHCC	National Standard Plumbing Code (NSPC)
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C.4.19 Air Conditioning and Refrigeration Institute (ARI):

ARI 210/240	Unitary Air-Conditioning and Air-Source Heat Pump Equipment
ARI 310	Packaged Terminal Air Conditioners
ARI 320	Water-Source Heat Pumps
ARI 325	Ground Water-Source Heat Pumps
ARI 360	Commercial and Industrial Unitary Air-Conditioning Equipment
ARI 380	Packaged Terminal Heat Pumps
ARI 410	Forced-Circulation Air-Cooling and Air-Heating Coils
ARI 460	Remote Mechanical-Draft Air-Cooled Refrigerant Condensers
ARI 490	Remote Mechanical-Draft Evaporative Refrigerant Condensers
ARI 550	Centrifugal or Rotary Screw Water Chilling Packages
ARI 560	Absorption Water-Chilling Packages
ARI 590	Reciprocating Water-Chilling Packages

C.4.20 Underwriters Laboratories (UL):

UL 06	Gas and Oil Equipment Directory
UL 296	Oil Burners
UL 484	Room Air Conditioners
UL 726	Oil-Fired Boiler Assemblies
UL 795	Commercial-Industrial Gas-Heating Equipment
UL 1995	Heating and Cooling Equipment

C.4.21 Building Codes

All work shall be performed in compliance with the following National Standards and Codes, applicable:

American Institute of Steel Construction (AISC)
American Concrete Institute (ACI)
Uniform Building Code (UBC)
Uniform Plumbing code (UPC)
Uniform Mechanical Code (UMC)
National Electrical Code (NEC)
Life Safety Codes
Joint Commission for the Accreditation of Hospital Organizations (JCAHO)

C.4.22 Federal Specifications (FS):

FS BB-F-1421 (Rev B) Fluorocarbon Refrigerants

C.4.23 Code of Federal Regulations, (CFR):

OSHA General Industry Safety and Health Standards (29 CFR 1910), Publication V2206; and OSHA Construction Industry Standards (29 CFR 1926). One source of these regulations is OSHA Publication 2207, which includes a combination of both Parts 1910

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and 1926 as they relate to construction safety and health. Contact the Superintendent of Documents. U.S. Government Printing Office Washington, D.C. 20402

National Emission Standards for Hazardous Air Pollutants (40CFR, Part 61)

Federal Standard (Fed. Std. 313A, Material Safety Data Sheets, Preparation and the Submissions)

C.4.24 MEDCOM:

Plant Management, Fire Detection & Alarm System, and Integrated Security System Specification 1000

Architectural criteria required for building modification, addition, or new building shall be extracted from Corps of Engineers Guide Specifications (CEGS) 13120: STANDARD METAL BUILDING SYSTEMS

C.5 GENERAL INFORMATION

This section consists of the following documents to be used in the execution of the work under this contract:

C.5.1 Job Order Contract Technical Specifications, Volume II.

C.5.1.1 The Technical specifications, Volume II, are numbered and organized by the 1983 Edition of the Construction Specification Institute's (CSI) Master Format. All specifications are filed in Division 1 through 16 as per CSI guidelines. A division 19 was created specifically for this contract to cover demolition.

C.5.1.2 The index to the Technical Specifications, Volume II, provides cross references to the Unit price Book (UPB), Volume III. Some specifications are broad scope in nature and contain a variety of items; therefore, they will have several UPB designators. Other specifications will not have UPB pricing information; these items are those that are special ordered from the manufacturer or the items involved would be proprietary to each manufacturer's own equipment.

C.5.1.3 The intent of these specifications is to furnish concise industrial and/or commercial standards for maintenance and repair of Government facilities.

C.5.1.4 All work shall meet or exceed applicable Building Codes.

C.5.2 Unit Price Book (UPB), Volume III.

C.5.2.1 The UPB, Volume III, contains pricing information for the description of work to be accomplished and for the unit of measure specified.

C.5.2.2 The UPB, Volume III, consists of Division 1 through 16 that are applicable to Division 2 through 16 and 19 of the Job Order Contract Technical Specifications, Volume II.

C.5.4 Job Order Contracting Guide, dated August 1997

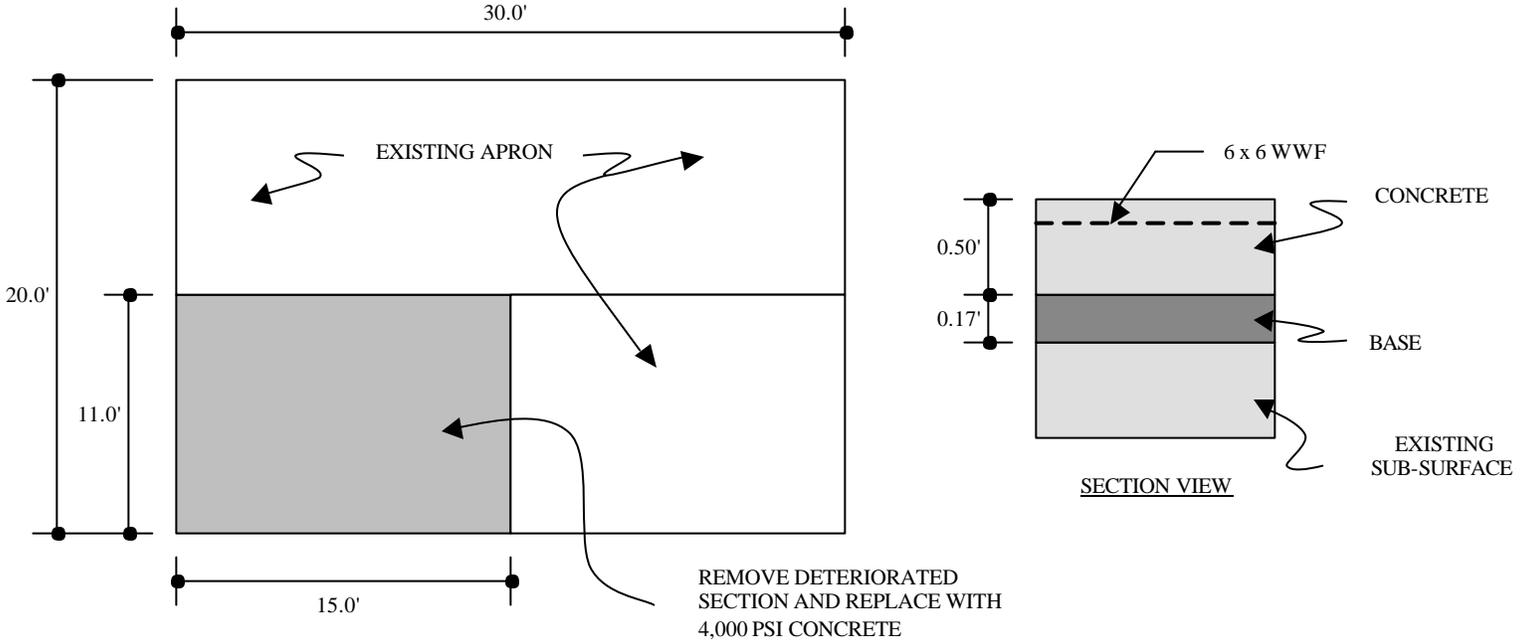
C.5.3 Abbreviations

A list of abbreviations to be used in the UPB, Volume III.

C.6 SAMPLE CALCULATION

The sample calculation that follows illustrates the use of the UPB. All dollar figures are fictitious.

PARKING APRON DEMOLITION AND REPAIR



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PARKING APRON DEMOLITION AND REPAIR
SAMPLE CALCULATIONS

1. DEMOLITION - $\frac{11 \times 15}{9} = 18 \text{ SY}$

$\frac{11 \times 15 \times .5}{27} = 3 \text{ CY}$

2. REPAIR -

A. BASE - $\frac{11 \times 15 \times .17}{27} = 1 \text{ CY}$

B. CONCRETE - $\frac{11 \times 15 \times .5}{27} = 3 \text{ CY}$

C. MESH - $11 \times 15 = 165 \text{ SF}$

D. FORMWORK - 26 LF

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PARKING APRON DEMOLITION AND REPAIR
SAMPLE COST PROPOSAL

<u>LINE ITEM</u>	<u>UPB #</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
DEMOLITION					
0001	02112-6005	SAW-CUT PAVEMENT	26 LF	\$ 0.67	\$ 17.42
0002	02112-1201	CONCRETE PAVEMENT W/MESH	18 SY	\$ 3.60	\$ 64.80
REPAIR					
0003	02619-1001	BASE COURSE	1 CY	\$20.27	\$ 20.27
0004	02222-4202	COMPACTION	1 CY	\$ 3.57	\$ 3.57
0005	03110-1611	FORMWORK	26 LF	\$ 1.48	\$ 38.48
0006	03220-1164	WELDED WIRE	165 SF	\$ 0.32	\$ 52.80
0007	03220-1164	CONCRETE (3,000 PSI)	3 CY	\$48.01	\$144.03
0008	03311-3005	MOD FOR (4,000 PSI)	3 CY	\$ 5.67	\$ 17.01
0009	03311-4101	SCREED CONCRETE	165 SF	\$ 0.22	\$ 36.30
0010	03305-1004	CURING COMPOUND	<u>1.65 CSF</u>	<u>\$ 6.23</u>	<u>\$ 10.28</u>
				TOTAL DIRECT COST	\$404.96
				<u>*COEFFICIENT</u>	x 1.05
				SUBTOTAL PRICE	\$425.21
				<u>*AREA COST FACTOR</u>	x 1.09
				TOTAL PRICE	\$453.48

*Assumptions:

1. Contractor coefficient of 1.05 for Normal Working Hours
2. Area Cost Factor (ACF) of 1.09 for the jobsite location

END OF SECTION C

SECTION G
CONTRACT ADMINISTRATION DATA

G.1 252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

AM#0001

G.2 ACCOUNTING AND APPROPRIATION DATA (INDEFINITE DELIVERY)

a. The supplies/services/construction to be obtained by this instrument are authorized by, for the purpose set forth in, and are chargeable to the following allotments, the available balances of which are sufficient to cover the cost of the same except as otherwise indicated herein.

Guaranteed minimum amount to be paid under the contract is **\$80,000.00** based period and **\$40,000** for each option period. Funds other than the stated guaranteed minimum shall be obligated by issuance of individual task orders and not by this contract.

b. The appropriate evidence of availability of military/civil funds shall be cited on each individual task order issued under the contract. Individual task order amounts must be a minimum of **\$2,000.00**, and they may not exceed the AFARS (Army Federal Acquisition Regulation Supplement) threshold applicable at the time of issuance of any task order.

c. The AFARS task order threshold is currently \$300,000.00. Notwithstanding this threshold and the limits specified, these limits are subject to change.

G.3 PERFORMANCE EVALUATION OF CONTRACTOR

a. As a minimum, the Contractor's performance will be evaluated upon final acceptance of the work. However, interim evaluations (per task order, per quarter, etc.) may be prepared at any time during contract performance when determined to be in the best interest of the Government.

b. The format for the evaluation will be Standard Form (SF) 1420, and the Contractor will be rated either outstanding, satisfactory, or unsatisfactory in the areas of Contractor Quality Control, Timely Performance, Effectiveness of Management, Compliance with Labor Standards, and Compliance with Safety Standards. The Contractor will be advised of any unsatisfactory rating, either in an individual element or in the overall rating, prior to completing the evaluation, and all contractor comments will be available to all DOD Contracting offices for their future use in determining contractor responsibility, in compliance with DOD FAR SUPP 36.201 (C)(1).

G.4 IDENTIFICATION OF CORRESPONDENCE

All correspondence and data submitted by the Contractor under this contract shall reference the contract number, Work Order Serial Number, and the Task Order number if any.

G.5 CONTRACT ADMINISTRATION

Administration of the task orders under this contract will be performed by the Corps of Engineers, Fort Worth District, Fort Worth, Texas. No changes, deviations, or waivers shall be effective without a modification of the contract, executed by the Contracting Officer, to authorize such changes, deviations, or waivers.

G.6 PRINCIPAL CONTRACTING OFFICER

The Contracting Officer who signs this contract will be the Principal Contracting Officer for this contract. However, any Contracting Officer assigned to the Fort Worth District, contracting within his or her authority, may take formal action on this contract when a contract action needs to be taken and the Principal Contracting Officer is unavailable.

G.7 PAYMENT OFFICE ADDRESS

Special Disbursing Agent
U.S. Army Engineer District, Fort Worth
Corps of Engineers
P. O. Box 17300
819 Taylor Street
Fort Worth, Texas 76102-0300

G.8 PAYMENT

a. Payment will be made in accordance with Section I, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. Payment for those task orders for which performance time is less than sixty (60) days will be in one final payment, provided the work has been completed and accepted within that time frame. Task orders with a performance time longer than sixty (60) days will allow the Contractor the opportunity to submit monthly invoices for progress or partial payments.

b. Partial payments will not be made without the following documents:

1) Payrolls must be submitted and approved by the Government as acceptable for the period for which payment is requested.
2) All requested submittals, shop drawings, schedules, and other requirements identified in the RFP and Memorandum of Negotiations have been fulfilled and approved by the Government.

3) All Quality Assurance Inspection Reports have been submitted for the period for which payment is requested.

4) Percentage of payment is approved by the Government's Quality Assurance Evaluator.

c. Final payment will not be made without the following:

1) Three (3) copies of O & M manuals.
2) As-builts in accordance with Section H.
3) Final, certified payrolls for all subcontractors.
4) Release of claim letter signed by the contractor's project manager and business manager.
5) Submission of all warranties.

G.9 INVOICES

The Contractor shall submit an original and three copies of all invoices directly to the Contracting Officer and one copy to the Contracting Officer's Authorized Representative identified in each task order. All invoices shall reflect the contract number and the applicable task order number. Each invoice shall be certified by the Contractor as being true, complete, accurate, and due for payment.

END OF SECTION G

SECTION L
INSTRUCTIONS, CONDITIONS AND NOTICES TO BIDDERS

LOCAL INSTRUCTION

L.1 PROJECT INFORMATION

- a. For technical information regarding plans and specifications contact Fort Worth District Office, Corps of Engineers, Fort Worth, Texas, telephone, (817) 978-3032.
- b. For information regarding proposal procedures or bonds, contact Contracting Division (817) 978-4413, or visit Room 2A19, 819 Taylor Street, Fort Worth, Texas. Collect calls not accepted.
- c. Offers will NOT be publicly opened. Information concerning the status of the evaluation and/or award will NOT be available after receipt of proposals.

L.2 GENERAL NOTICES

- a. In the technical specifications wherever the term "stabilized aggregate base course" is used, or wherever a reference is made to a section entitled "Stabilized Aggregate Base Course," it shall be deemed to mean "Aggregate Base Course."
- b. Offerors must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in Offers is prescribed in 18 USC 1001. (FAR 52.214-4)
- c. The Affirmative Action Requirement of the Equal Opportunity Clause may apply to any contract resulting from this RFP.

L.3 OFFEROR'S QUALIFICATIONS

Pursuant to FAR 9.1, before an offer is considered for award, the offeror will be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

L.4 NOTICE REGARDING POTENTIAL EMPLOYMENT ON MILITARY INSTALLATION

If the work called for by this request for proposal is located on a military installation, offerors should check with post/base security to determine if potential employees will be allowed on the base/post to seek employment.

L.5 SUBCONTRACTING PLAN

- a. This notice applies to Large Businesses only.
- b. Reference FAR 52.219-9, SMALL BUSINESS SUBCONTRACTING PLAN. The bidder/offeror shall take into consideration only those subcontracts that he/she will award when preparing the subcontracting plan required by the FAR.
- c. The Contracting Officer will NOT make award under this solicitation without an APPROVED subcontracting plan.
- d. To be approved, the plan must contain at a minimum, the eleven elements set forth in FAR 52.219-9, paragraph (d). Pursuant to AFARS 19.705-4(d), your plan will be reviewed and scored in accordance with AFARS Appendix CC to ensure it clearly represents your firm's ability to carry out

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the terms and conditions set forth in the contract clauses. AFARS Appendix CC may be accessed via the Internet at <http://acqnet.sarda.army.mil/library/afar/afartoc.htm>.

e. Subcontracting Plan Floors. These are the minimum percentages of subcontracted dollars that will be approved. The current floors for Fiscal Year 2001 are as follows:

Small Business	61.4%
Small Disadvantages Business	9.1%
Women-Owned Small Business	5.0%
American Veteran-Owned Small Business	3.0%
Historically Black Colleges/Universities and Minority Institutions (where applicable)	2.0%
HUBZone Small Business	1.0%

f. Current copies of Standard Form 294 and 295 can be found at <http://www.gsa.gov/forms/farnumer.htm>.

L.6 AMENDMENT TO THIS REQUEST FOR PROPOSALS (RFP)

All amendments to this RFP n will be made through the use of the Internet. No additional media (CD ROMS, Floppy Disks, Faxes, or paper) will be provided unless the Government determines that it is necessary. Contractors may view/download this solicitation and all amendments from the Internet after solicitation issuance at the following Internet address: <http://ebs.swf.usace.army.mil>. All offerors are required to check the Ft. Worth District Contracting Division website daily to be notified of any changes to this solicitation.

L.7 SPECIAL NOTICE CONCERNING INDIVIDUAL SURETIES

The Security interest, including pledged assets as set forth in the FAR 52.228-11, PLEDGES OF ASSETS, and executed Standard Form 28 entitled "AFFIDAVIT OF INDIVIDUAL SURETY" shall be furnished with the bond. Failure to provide with the bid bond a pledge of assets (security interest) in accordance with FAR 28.203-1 will result in rejection of a bid which is bonded by individual sureties.

L.8 ESTIMATED CONSTRUCTION COST

The estimated cost of the proposed construction is not-to-exceed \$20,000,000.00 for each contract.

L.9 PARTNERING

In order to accomplish this contract, the government is encouraging the formation of a cohesive partnership with the contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget, and on schedule. This partnership would be bilateral in make-up and participation would be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price.

L.10 PRINCIPAL CONTRACTING OFFICER

The Contracting Officer who signs this contract will be the Principal Contracting Officer for this contract. However, any Contracting Officer assigned to the Fort Worth District, contracting within his or her authority, may take formal action on this contract when a contract action needs to be taken and the Principal Contracting Officer is unavailable.

L.11 PERFORMANCE OF WORK BY CONTRACTOR

The successful bidder/offeror must furnish the Contracting Officer within 20 days after award the following a description of the work which he intends to perform with his own organization (e.g., earthwork, paving, brickwork, or roofing), the percentage of the total work this represents, and the estimated cost thereof.

L.12 BASIS OF AWARD

(a) The Government will award a firm fixed-price contract to that responsible Offeror whose proposal, conforming to the solicitation, is fair and reasonable, and has been determined to be most advantageous to the Government, quality (comprised of technical approach and performance capability factors), price and other factors considered. The rated/scored technical evaluation criteria and price are considered approximately equal. As technical scores and relative advantages and disadvantages become less distinct, differences in price between proposals are of increased importance in determining the most advantageous proposal. Conversely, as differences in price become less distinct, differences in scoring and relative advantages and disadvantages between proposals are of increased importance to the determination.

(b) The Government reserves the right to accept other than the lowest priced offer. The right is also reserved to reflect any and all offers. The basis of award will be a conforming offer, the price or cost of which may or may not be the lowest. If other than the lowest priced offer is accepted, that offer must be sufficiently more advantageous than the lowest priced offer to justify the payment of additional amounts.

(c) Offerors are reminded to include their best technical and price terms in their initial offer and not to automatically assume that they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of a conforming proposal without discussions, if deemed to be within the best interests of the Government.

L.13 PREPROPOSAL CONFERENCE

a. A preproposal conference will be held:

DATE: June 29, 2001
LOCATION: Fort Worth, Texas
SITE: Federal Office Building
Room 1A03/Training
819 Taylor Street
TIME: 10:00 a.m.

An information meeting is scheduled. Seating is limited. The first 80 requests will be accepted. Please limit your request to two participants. Those wishing to attend should fax a request to 817/978-4547, ATTN: Frank Wilson, voice 817/978-4413. Please provide your company name, phone and fax numbers and name and title of participant(s). Prospective offerors are encouraged to submit, in writing prior to the preproposal conference, any questions they desire to be discussed and answered at the conference. Although questions will be accepted at the conference, it is highly recommended that inquires be submitted in writing not later than 3 working days prior to the conference to assure all questions can be appropriately answered at the conference.

Your questions may be submitted to the following:

By FAX: (817) 978-4547

By Mail:

US Army Corps of Engineer District, Fort Worth
ATTN: CESWF-CT-C (Wilson)
Post Office Box 17300
819 Taylor Street, Room 2A19

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Fort Worth, Texas 76102-0300
By Email: Frank.A.Wilson@swf02.usace.army.mil

FAR INSTRUCTIONS

L.14 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The price in this offer have been arrived at independently, without, for the purpose of restricting competition, and consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contradictory to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as an agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above

_____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

L.15 52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.

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- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

L.16 52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

(a) From the ASSIST database via the Internet at <http://assist.daps.mil>; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

L.17 52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

(End of provision)

L.18 52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

L.19 52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

L.20 52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAR 2001)

(a) Definitions. As used in this provision--

"Discussions" are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal. In writing, writing, or written means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

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"Proposal modification" is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

"Proposal revision" is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

"Time", if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the

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solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represent the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or

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counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

- (i) The overall evaluated cost or price and technical rating of the successful offeror;
- (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
- (iii) A summary of the rationale for award; and
- (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

L.21 52.215-5 SOLICITATION DEFINITIONS (JUL 1987)

"Government" means United States Government.

"Offer" means "proposal" in negotiation.

"Solicitation" means a request for proposals (RFP) or a request for quotations (RFQ) in negotiation.

(End of provision)

L.22 13 52.215-7 UNNECESSARILY ELABORATE PROPOSALS OR QUOTATIONS (APR 1984)

Unnecessarily elaborate brochures or other presentations beyond those sufficient to present a complete and effective response to this solicitation are not desired and may be construed as an indication of the offeror's or quoter's lack of cost consciousness. Elaborate artwork, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor wanted.

(End of provision)

(AV 7-2003.40 1969 OCT)

L.23 52.215-8 AMENDMENTS TO SOLICITATIONS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Offerors shall acknowledge receipt of any amendment to this solicitation by (1) signing and returning the amendment, (2) identifying the amendment number and date in the space provided for this purpose on the form for submitting an offer, (3) letter or telegram, or (4) facsimile, if facsimile offers are authorized in the solicitation. The Government must receive the acknowledgment by the time specified for receipt of offers.

(End of provision)

L.24 52.215-9 SUBMISSION OF OFFERS (JUL 1995)

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(a) Offers and modifications thereof shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the offeror.

(b) Telegraphic offers will not be considered unless authorized by the solicitation; however, offers may be modified by written or telegraphic notice.

(c) Facsimile offers, modifications or withdrawals will not be considered unless authorized by the solicitation.

(d) Offers submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

(e) Item samples, if required, must be submitted within the time specified for receipt of offers. Unless otherwise specified in the solicitation, these samples shall be (1) submitted at no expense to the Government, and (2) returned at the sender's request and expense, unless they are destroyed during preaward testing.

(End of provision)

L.25 52.215-10 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF PROPOSALS (JUL 1995)

(a) Any proposal received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it--

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail or, if authorized by the solicitation, was sent by telegram or via facsimile and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation;

(3) Was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and U.S. Federal holidays;

(4) Was transmitted through an electronic commerce method authorized by the solicitation and was received by the Government not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(5) Is the only proposal received.

(b) Any modification of a proposal or quotation, except a modification resulting from the Contracting Officer's request for "best and final" offer, is subject to the same conditions as in subparagraphs (a)(1), (2), and (3) of this provision.

(c) A modification resulting from the Contracting Officer's request for "best and final" offer received after the time and date specified in the request will not be considered unless received before award and the late receipt is due solely to mishandling by the Government after receipt at the Government installation.

(d) The only acceptable evidence to establish the date of mailing of a late proposal or modification sent either by U.S. Postal Service registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the proposal, quotation, or modification shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors or quoters should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(e) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the proposal wrapper or other documentary evidence of receipt maintained by the installation.

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(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (d) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors or quoters should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(h) Proposals may be withdrawn by written notice or telegram (including mailgram) received at any time before award. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision entitled "Facsimile Proposals." Proposals may be withdrawn in person by an offeror or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the proposal before award.

(End of provision)

L.26 52.215-12 RESTRICTION ON DISCLOSURE AND USE OF DATA (APR 1984)

Offerors or quoters who include in their proposals or quotations data that they do not want disclosed to the public for any purpose or used by the Government except for evaluation purposes, shall--

(a) Mark the title page with the following legend:

"This proposal or quotation includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed—in whole or in part--for any purpose other than to evaluate this proposal or quotation. If, however, a contract is awarded to this offeror or quoter as a result of--or in connection with--the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets];" and

(b) Mark each sheet of data it wishes to restrict with the following legend:

"Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal or quotation."

(End of provision)

(R 3-501(b) Sec L (xxiv))

L.27 52.215-14 EXPLANATION TO PROSPECTIVE OFFERORS (APR 1984)

Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective offerors before the submission of their offers. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors.

(End of provision)

(R SF 33A, Para 3, 1978 JAN)

L.28 52.215-38 PREPARATION OF OFFERS--CONSTRUCTION (JAN 1991)

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(a) Offers must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing an offer must initial each erasure or change appearing on any offer form.

(b) The offer form may require Offerors to submit offer prices for one or more items on various bases, including--

(1) Lump sum offer;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of subparagraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires an offer on all items, failure to do so will disqualify the offer. If an offer on all items is not required, Offerors should insert the words "no offer" in the space provided for any item on which no price is submitted.

(d) Alternate offers will not be considered unless this solicitation authorizes their submission.
(End of provision)

L.29 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of two (2) - Firm-Fixed Price, Job Order Contracts (JOC) resulting from this solicitation.

(End of clause)

L.30 52.232-13 NOTICE OF PROGRESS PAYMENTS (APR 1984)

The need for customary progress payments conforming to the regulations in Subpart 32.5 of the Federal Acquisition Regulation (FAR) will not be considered as a handicap or adverse factor in the award of the contract. The Progress Payments clause included in this solicitation will be included in any resulting contract, modified or altered if necessary in accordance with subsection 52.232-16 and its Alternate I of the FAR. Even though the clause is included in the contract, the clause shall be inoperative during any time the contractor's accounting system and controls are determined by the Government to be inadequate for segregation and accumulation of contract costs.

L.31 52.232-14 NOTICE OF AVAILABILITY OF PROGRESS PAYMENTS EXCLUSIVELY FOR SMALL BUSINESS CONCERNS (APR 1984)

The Progress Payments clause will be available only to small business concerns. Any bid conditioned upon inclusion of a progress payment clause in the resulting contract will be rejected as nonresponsive if the bidder is not a small business concern.

L.32 52.232-28 INVITATION TO PROPOSE PERFORMANCE -BASED PAYMENTS (MAR 2000)

(a) The Government invites the offeror to propose terms under which the Government will make performance-based contract financing payments during contract performance. The Government will consider performance-based payment financing terms proposed by the offeror in the evaluation of the offeror's proposal. The Contracting Officer will incorporate the financing terms of the successful offeror and the FAR clause, Performance-Based Payments, at FAR 52.232-32, in any resulting contract.

(b) In the event of any conflict between the terms proposed by the offeror and the terms in the clause at FAR 52.232-32, Performance-Based Payments, the terms of the clause at FAR 52.232-32 shall govern.

(c) The Contracting Officer will not accept the offeror's proposed performance-based payment financing if the financing does not conform to the following limitations:

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(1) The Government will make delivery payments only for supplies delivered and accepted, or services rendered and accepted in accordance with the payment terms of this contract.

(2) The terms and conditions of the performance-based payments must--

(i) Comply with FAR 32.1004;

(ii) Be reasonable and consistent with all other technical and cost information included in the offeror's proposal; and

(iii) Their total shall not exceed 90 percent of the contract price if on a whole contract basis, or 90 percent of the delivery item price if on a delivery item basis.

(3) The terms and conditions of the performance-based financing must be in the best interests of the Government.

(d) The offeror's proposal of performance-based payment financing shall include the following:

(1) The proposed contractual language describing the performance-based payments (see FAR 32.1004 for appropriate criteria for establishing performance bases and performance-based finance payment amounts).

(2) A listing of--

(i) The projected performance-based payment dates and the projected payment amounts; and

(ii) The projected delivery date and the projected payment amount.

(3) Information addressing the Contractor's investment in the contract.

(e) Evaluation of the offeror's proposed prices and financing terms will include whether the offeror's proposed performance-based payment events and payment amounts are reasonable and consistent with all other terms and conditions of the offeror's proposal.

(End of provision)

L.33 52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Chief, Contracting Division
U.S. Army Corps of Engineers, Fort Worth District
819 Taylor Street
Post Office Box 17300
Room 2A19
Fort Worth, Texas 76102-0300

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

L.34 52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is

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submitted.

- (d) Alternate proposals will not be considered unless this solicitation authorizes their submission.
(End of provision)

L.35 252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING
(AUG 1999)

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--

- (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;
(2) Complete section A and forward the form to DLIS; and
(3) Notify the Contractor of its assigned CAGE code.

- (c) Do not delay submission of the offer pending receipt of a CAGE code.
(End of provision)

L.36 252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr2000.com>.

(End of clause)

L.37 252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES (DEC 1991)

(a) The Government's payment for the items listed in the Bidding Schedule shall constitute full compensation to the Contractor for --

- (1) Furnishing all plant, labor, equipment, appliances, and materials; and
- (2) Performing all operations required to complete the work in conformity with the drawings and specifications.

(b) The Contractor shall include in the prices for the items listed in the Bidding Schedule all costs for work in the specifications, whether or not specifically listed in the Bidding Schedule.

PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

L.38 DIRECTIONS FOR SUBMISSION OF OFFERS

Mailed proposals should be addressed to:
U.S. Army Engineer District, Fort Worth
ATTN: CESWF-CT-C, Frank A. Wilson
Post Office Box 17300
819 Taylor Street, Room 2A19
Fort Worth, Texas 76102-0300

Handcarried proposals may be delivered to:
U.S. Army Engineer District, Fort Worth
Fritz G. Lanham Federal Building
Contracting Division, Room 2A19
819 Taylor Street
Fort Worth, Texas 76102-0300

AM#0001 L.39 PROPOSAL SUBMISSION INSTRUCTIONS

a. PROPOSAL FORMAT: Proposals shall be submitted on 8 1/2 by 11 inch paper with any foldout sheets limited to 17 inches. Proposal revisions shall be submitted as page replacements with revised text readily identifiable, e.g., changes shall be underlined or printed in bold face. Revised pages shall be numbered, dated, submitted in appropriate number of copies, and shall be submitted on paper that is a different color than the original. Offerors are to submit four volumes, in two separate envelopes, as follows:

- (1) Volume I Technical Proposal (**original and eight copies**)
- (2) Volume II Past Performance (**original and eight copies**)
- (3) Volume III Price Proposal
 - (a) Price proposal (original and **three copies**)
 - (b) Price proposal supporting documentation (original and three copies)
 - (c) Bid bond (original **and three copies**)
 - (d) Surety's letter of intent to provide performance and payment bonds for any resulting contract (original **and three copies**)
- (4) Volume IV Subcontracting Plans (if offeror is a large business) (original **and three copies**, submit in Price Proposal Envelope)

b. An index of the sections shall be provided and should contain the title of the matters discussed referencing the specific topics addressed within this section of instructions. The narrative discussions shall be related as to Section C.

c. Offerors are cautioned that "parroting" of the requirements with a statement of intent to perform does not reveal the offeror's understanding of the problem or his capability to solve it. The inclusion of

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"filler" material from previous proposals or commercial applications shall be avoided unless it has a direct application to the objective of this solicitation.

d. PROPOSAL CONTENT: Offerors are responsible for including sufficient details to permit a complete and accurate evaluation of the proposal from both a technical and management standpoint. Offerors shall identify technical uncertainties and assumptions within the requirement set forth in this solicitation and provide specific proposal assumptions concerning the offeror's intent, capabilities, facilities, and experiences. Clear identification is the sole responsibility of the offeror.

e. TECHNICAL PROPOSALS:

(1) TECHNICAL PROPOSALS SHALL NOT INCLUDE PRICE OR PRICING INFORMATION.

(2) TECHNICAL PROPOSALS (Volume I) shall be submitted separately from the price proposal in an envelope or container clearly marked "Technical Proposal, RFP No. DACA63-01-R-0013." The technical proposal shall be limited to one three-inch (3"), three-ring binder. Pages shall be single-sided, using print which is 10 characters per inch or larger. Where any proposal exceeds the specified limit of one three-inch binder, only data presented in the first three-inch binder will be considered. Additional pages will not be considered for evaluation. Submit an original and nine copies of the technical proposal.

(3) Past Performance (Volume II) shall be submitted as a separate volume. Limit data to a maximum of 25 pages for the entire volume. Submit an original and nine copies. Submit information pertaining to current and completed contracts which you consider relevant to demonstrate your ability to perform the proposed contract effort. Explain what aspects of the contracts are relevant to the stated required efforts."

(4) To assure information is properly presented and to aid the Government in the evaluation process, offerors are requested to present technical proposal information in accordance with the instructions presented below and in Section M, Evaluation Factors for Award, which identifies factors and subfactors (in descending order of importance) to be addressed in each proposal. Offerors should use title blocks and/or cover pages to identify individual and separate responses to each criterion/subcriterion in the technical proposal. Cover each item in sufficient detail to clearly address required information in order to preclude the proposal from being returned as incomplete or rejected because an item has not been addressed.

- (a) Management Ability **(Volume I)**
- (b) Past Performance **(Volume II)**
- (c) Quality Control Program **(Volume I)**
- (e) Subcontracting Support Capability **(Volume I)**
- (f) Clarity of Proposal **(Volumes I, II, III, and VI)**

f. PRICE PROPOSAL (Volume III):

(1) The price proposal shall be submitted separately from the technical proposal in an envelope clearly marked "Pricing proposal, RFP No. DACA63-01-R-0013." Submit an original and **three copies** of the pricing proposal.

NOTE: The offeror shall include with the price proposal supporting documentation (all cost and pricing information) and rationale utilized to compute the coefficients entered in Section B. This information should define and explain the offeror's methodology of computing the coefficient. Supporting documentation shall include rates, bases, and methods of computation. Offerors are reminded this information is required for evaluation purposes only and that the coefficient submitted in Section B must represent all allowable costs as directed in Section B Notes. There is no limit to the number of pages for this supporting documentation.

(2) BID BOND: Bid Bond and surety's letter of intent to provide performance and payment bonds. **Submit an original and three copies.**

g. SUBCONTRACTING PLAN (Volume IV): All large businesses shall submit a subcontracting plan as a separate volume ~~and submitted with the Price Proposal envelope~~. The plan should be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the offeror ineligible for award of the contract. The subcontracting plan submitted by a large business will be reviewed for compliance and will be scored in accordance with AFARS 19.7, Appendix CC. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process.

h. Offerors are cautioned to submit sufficient information to enable the evaluation team to fully ascertain each offeror's capability to perform all requirements contemplated by this solicitation. The

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data submitted with each proposal should be complete and concise, but not overly elaborate. Reliance on promotional brochures is discouraged. The technical proposal must include necessary information to enable evaluators to form a concrete conclusion regarding the offeror's ability to perform complete execution of required construction services. In no case shall words such as "we will comply with the requirements of the contract" or equivalent statements be acceptable to meet the requirements of this request for proposals. Failure to comply with these instructions may result in rejection of the offeror's proposal. All commitments made in the proposal, which are in excess of the minimum requirements stated in the solicitation, will become a part of the resultant contract.

i. The Government may award a contract based upon initial offers received without discussion of such offers. Therefore, each initial offer should be submitted with the most favorable terms from a technical and price/cost standpoint which the offeror can submit to the Government.

AM#0001 L.40 TECHNICAL PROPOSAL AND PAST PERFORMANCE (VOLUMES I AND II)

Offerors' management proposals shall address the areas listed below in a format which follows the outline of evaluation factors specified in Section M, EVALUATION FACTORS FOR AWARD.

TECHNICAL PROPOSAL (VOLUMES I AND II):

1. MANAGEMENT ABILITY (VOLUME I): Overall management ability to provide off-site technical support staff; the ability to provide corporate resources to comply with contract requirements, the ability to manage/construct multiple small to medium-scale construction and repair projects in different locations simultaneously; plan to demonstrate response time to Government needs and requests; plan to administer payroll and labor relations functions; management plan for on-site staff to include key managers and proposed staff. List proposed management staff, their backgrounds, and their respective positions with regard to this contract. Areas of consideration should be:

(A) MANAGEMENT PLAN: Offeror shall furnish an organization chart depicting the management structure proposed for the RFP and any resulting contract. Offeror's organization shall show supervision and quality control during all phases of work. Offerors shall identify the principal program personnel as outlined in Section C, RESPONSIBILITIES, with their areas of responsibility and relationship with the management structure. Qualifications of the principle program personnel shall be provided in resume format. Offeror shall have personnel of suitable background and experience to assure that all of the anticipated disciplines required in the RFP and proposed contract are represented. For all key personnel proposed, Offeror shall show if the employees will be employed full or part time, if they will have single or dual function responsibility (ies) and what those responsibilities will be.

(B) TECHNICAL SUPPORT: Offeror shall furnish an organizational chart depicting the management structure proposed for the proposed contract. Capability of the off-site technical staff; plan for architect-engineering support; and a list of registered professional engineers, their disciplines and their roles in the contract. Provide a detailed list of individuals' experience with general project management and dealing with negotiated contracts.

(C) CORPORATE SUPPORT: Offeror shall furnish an organizational chart depicting the management structure proposed for the proposed contract. Offeror shall demonstrate related corporate support. Corporate support is defined as the proven ability to provide resources from other parts of the corporation for unusual needs such as increased workload in a compressed time frame. Offeror shall provide a company resource chart that includes the following information:

- (1) The number of personnel employed, also give breakdown of each discipline**
- (2) A description of related experience (as stated in Section C)**
- (3) Resumes for the Program Manager, Project Manager and Quality Control**

Manager

(D) RELATED EXPERIENCE: Provide a detailed narrative that demonstrates" ability to manage/construct multiple (i.e., as many as 20 or more) small- to medium-scale construction and repair projects in different locations, simultaneously, and list projects pertaining to the

last five (5) years any Federal, State and local government, and/or private contracts performed by the Offeror that are similar in nature to the requirements in this RFP. Include dates, and name and telephone numbers for points of contact for individual projects discussed in this required narrative.

(1) Be specific regarding experience, especially that relating to medical facilities maintenance and repair projects and minor new construction for medical facilities.

(2) Identify scopes of work in previous projects to include types and levels of skills, trades, equipment utilized on these projects, and final performance evaluations for each project.

(E) **RESPONSE TIME:** Address responsibilities, capabilities, and levels of authority proposed for management staff to assure project accomplishment in a timely and responsive manner. Describe, in detail, management controls in this process, and discuss staffing levels available to scope and negotiate numerous task orders simultaneously and effectively. Offeror shall demonstrate related corporate support. Corporate support is defined as the proven ability to provide resources from other parts of the corporation for unusual needs such as increased workload in a compressed time frame. Offeror shall provide a company resource chart that includes the following information:

(1) The number of personnel employed, also give breakdown of each discipline

(2) A description of related experience (as stated in Section C)

(F) **PAYROLL/LABOR RELATIONS:** Describe staffing and training proposed to perform payroll administration and labor relation functions. Describe past experience of payroll and labor relations of staff to be assigned to the contract effort.

2. **PAST PERFORMANCE (VOLUME II)** (quality of Offeror's work and how well Offeror performed): Each offeror shall submit a past performance volume. Offerors shall provide information that indicates their ability to perform the proposed contract effort. Offeror shall provide information pertaining to the last five (5) active/completed Federal, State and local government, and/or private contracts performed by the Offeror that are similar in nature to the requirements in the RFP currently being evaluated – i.e., processing multiple task orders simultaneously, working in/with medical facilities. Offeror shall explain what aspects of the previously performed contracts are relevant to the effort required by this RFP.

The required information submitted will be evaluated for the following items (A), (B), (C), (D), and (E) - numeric items (i.e., (1), (2)) are the areas to be considered when scoring items (A), (B), (C), and (D):

(A) **Effectiveness of Management as to:**

- (1) Cooperation and Responsiveness
- (2) Management of Resources, Personnel
- (3) Coordination and Control of Subcontractors
- (4) Adequacy of Site Clean-Up
- (5) Effectiveness of Job-Site Supervision
- (6) Compliance with Laws and Regulations
- (7) Professional Conduct
- (8) Review/Resolution of Subcontractor's Issues
- (9) Implementation of Subcontracting Plan (if Large Bus)

(B) **Timely Performance as to:**

- (1) Adequacy of Initial Progress
- (2) Adherence to Approved Schedule
- (3) Resolution of Delays
- (4) Submission of Required Documentation
- (5) Completion of Punchlist Items
- (6) Submission of updated and Revised Progress Schedules
- (7) Warranty Response

(C) **Quality Control as to:**

- (1) Quality of Workmanship
- (2) Adequacy of the CQC Plan
- (3) Implementation of the CQC Plan
- (4) Quality of QC Documentation

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- (5) Storage of Materials
- (6) Adequacy of Materials
- (7) Adequacy of Submittals
- (8) Adequacy of QC Testing
- (9) Use of Specified Materials
- (10) Identification/Correction of Deficient Work in a Timely Manner

(D) Compliance with Labor Standards as to:

- (1) Correction of Noted Deficiencies
- (2) Payrolls Properly Completed and Submitted
- (3) Compliance with Labor Laws and Regulations with Specific Attention to the

Davis-Bacon Act and EEO Requirements

(E) Compliance with Safety Standards as to:

- (1) Adequacy of Safety Plan
- (2) Implementation of Safety Plan
- (3) Correction of Noted Deficiencies

Submit "the following" information "for projects" which you consider relevant to demonstrate your ability to perform the proposed contract effort.

(A) Company Name (if different than Offeror's name, and Offeror shall explain the circumstances that caused the company name to be changed)

(B) Contract/Project Title (Government and Commercial)

(C) Project Manager/Engineer name and description of responsibilities/authorities

(D) Contracting Agency

(E) Contract Number

(F) Name, Address, and Telephone Number of Administrative Contracting Officer and Contracting Officer

(G) Brief description of Effort (include percentage of work completed by the prime contractor and disciplines of work performed))

(H) Number and severity of problems encountered, type of any subsequent corrective actions, and the effectiveness of that corrective action (s)

(I) Type of Contract (Firm-Fixed Price, Cost-Reimbursement, Incentive, Indefinite-Delivery, etc.)

(J) Period of Performance

(K) Original Contract Dollar Value and Current/Final Contract Dollar Value

(L) Original Completion Date and Actual Completion Date

(M) Point of Contact and Phone numbers of Three Different Supplies

(N) Name of Bank

(O) Name and Phone Number of Bank Point of Contact

NOTE: Please notify your bank that the Corps of Engineers may contact them and authorize them to release the following information regarding your account:

(i) Number of Years Business Conducted With Bank

(ii) Types of Open Accounts

(iii) Mean by Which Loans are Secured

(iv) Balance of Current Accounts (the bank will provide a "range of figures" for this information (i.e., medium five-figure range, etc.)

Provide Performance Evaluation Documents associated with the contract information required above, e.g. Standard Form 1420 Contractor Performance Evaluation, or equivalent.

Offerors shall identify those companies holding their worker's compensation policy(ies) for the past five years. Offerors shall provide their OSHA Form 200 for the same period for the Government's review, and mishap rates shall at least show a declining trend. Offerors shall list any subcontractors used, shall identify sizes and types of major mechanical, electrical, and utility control systems equipment used, and shall show the Offeror's percentage of participation on each job listed. The list shall indicate the Offeror's experience as a prime contractor. Failure to identify the subcontractors in the proposal shall invalidate their experience/credentials and that invalidated experience/credentials will not be considered or evaluated by the Government. If Offeror's list of experience was accomplished as a

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subcontractor, then the percentage (%) of work the Offeror expended (as subcontractor) on each job shall be shown.

FIRMS LACKING RELEVANT PAST PERFORMANCE HISTORY SHALL RECEIVE A NEUTRAL EVALUATION FOR PAST PERFORMANCE.

3. QUALITY CONTROL (VOLUME I): Quality control plan and staffing level to insure compliance with Government requirements as they are stated in the request for proposal.

(A) Include inspection and acceptance procedures; workmanship and safety standards; meeting JCAHO Interim Life Safety Measures; submittals, testing, reporting, and shop drawing procedures; and QC staffing levels.

(B) Explain how Contractor Quality Control requirements, as shown in the Contractor Quality Control exhibit, Section J, will be incorporated into the contract effort.

4. SUBCONTRACTING SUPPORT CAPABILITY (VOLUME I): "Provide a detailed narrative" of relationships with subcontractors regarding response time and extent of subcontracting specialty. Be specific in description of experience with medical facility maintenance and repair work and minor new construction for medical facilities.

(A) Delineate means by which management will control timeliness and quality of subcontracted effort.

(B) Provide the number and size of proposed subcontractors, and your rationale for their selection. Be specific in description of experience with medical facility maintenance and repair work and minor new construction for medical facilities.

5. CLARITY OF PROPOSAL AND SUITABILITY FOR INCLUSION IN THE CONTRACT (VOLUMES I, II, III, and IV): The offeror's proposal will become a contract document upon contract award. It is important that the proposal be written in a clear, concise manner. The proposal shall present the details that follow same order as the evaluation factors in Section M to permit the Government to promptly, completely and accurately evaluate the proposal from both a management and technical standpoint. Offeror shall identify any technical uncertainties and assumptions within the requirements as set forth in the RFP, and offeror shall provide specific proposals for the resolution of any technical uncertainties or assumptions so identified. The Government will not make any assumptions concerning the Offeror's intent, capabilities, facilities, or experience. Clear identification of the pertinent details shall rest solely with the Offeror."

L.41 PRICE PROPOSAL (VOLUME III)

a. The envelope containing the price proposal should be sealed and marked in the bottom right-hand corner PRICE PROPOSAL SUBMITTED UNDER RFP NO. DACA63-01-R-0013.

b. Offerors shall submit their price proposal with a completed Standard Form 1442 (Solicitation, Offer, and Award), Section B (Supplies or Services & Prices/Costs), Section K (Representations, Certifications and Other statements of Offerors), and Bid Bond as provided in the solicitation.

c. Additional information to be included with the price proposal are the surety's letter of commitment (see Section L, clauses entitled "Bonds"), and documentation to support coefficient calculations (see Section B Notes and Section L, clause entitled "Proposal Submission Instructions")."

AM#0001 **L.42 SUBCONTRACTING PLAN (VOLUME IV)**

****THIS PARAGRAPH APPLIES TO LARGE BUSINESSES ONLY****

Volume IV Subcontracting Plan **may** be submit in Price Proposal (Volume III) Envelope **or the subcontracting plan (if submitted in a separate envelope) should be sealed and marked in the bottom right-hand corner SUBCONTRACTING PLAN SUBMITTED UNDER RFP NO. DACA63-01-R-0013.** All large businesses shall submit a subcontracting plan along with their technical, past performance, and price proposal. The plan should be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the offeror ineligible for award of the contract. The subcontracting plan will be reviewed for compliance and will be scored in accordance

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with AFARS 19.7, Appendix CC. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process.

END OF SECTION L

SECTION M
EVALUATION FACTORS FOR AWARD

M.1 CRITERIA FOR AWARD

- a. This Section outlines the criteria which the Government will consider to evaluate the offeror's capabilities and proposals for the JOC contract. These criteria reflect the scope of the evaluation to be performed on proposals submitted in response to the RFP. Evaluations will be accomplished by comparing offeror capabilities and proposal elements against Government requirements. Section L (Instructions, Conditions, and Notices to Offerors) defines proposal elements and data to be submitted in each offeror's proposal.
- b. The offeror's technical proposal and the Army's Job Order Contract Guide will be incorporated into the contract award documents.

M.2 DETERMINATION OF COMPETITIVE RANGE

Pursuant to FAR 15.306, the Contracting Officer's determination of competitive range for proposals submitted as a result of this solicitation will consider such factors as technical evaluation/ranking of the proposal, initial cost/price proposed, and other items as set forth in Section M of this solicitation. Offerors are hereby advised that only those most highly rated proposals will be included in the competitive range. Offerors who are not included in the competitive range will be promptly notified.

M.3 CONTRACTOR RESPONSIBILITY

To be eligible for award of a contract pursuant to subject solicitation, an offeror must be determined by the Contracting Officer to be a responsible prospective contractor. To be determined responsible, a contractor must:

- a. Have adequate resources, or the ability to obtain such resources, sufficient to perform the contract.
- b. Be able to comply with the required or proposed delivery or performance schedule, taking into consideration all its existing commercial and governmental business commitments.
- c. Have a satisfactory performance record.
- d. Have a satisfactory record of integrity and business ethics.
- e. Have the necessary organization, experience, accounting and operational controls, and technical skills (or the ability to obtain them).
- f. Have the necessary production, construction, and technical equipment and facilities (or the ability to obtain them).
- g. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

M.4 EVALUATION OF TECHNICAL PROPOSAL

a. BASIS FOR AWARD: The Government intends to award a contract based upon initial offers received, without discussion of such offers. Each offer should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if that is later determined by the Contracting Officer to be necessary. The right is reserved to accept other than the lowest offer and to reject any or all offers. Award may be made to the superior offer which is not the lowest price offer, but which is sufficiently more advantageous than the lowest offer so as to justify the payment of a higher price. As technical

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proposals become more equivalent, cost consideration becomes more significant and may become the determining factor for award. Any award price must be determined to be fair and reasonable. In the event technical and price become more equivalent for two or more large businesses, the subcontracting plan will become more significant and may become the determining factor for award. All evaluation factors other than cost or price, when combined, are significantly more important than cost or price.

b. The technical proposals received in response to this request for proposal will be evaluated utilizing an evaluation system to select the proposal that is the most advantageous to the Government, considering other than just price and price related factors. The evaluation system will depict how well the offeror's proposal meets the evaluation standards and solicitation requirements.

c. A risk assessment will be determined for each criterion/subcriterion to assess the risks associated with the offeror's proposed effort as it relates to accomplishing the requirements of this solicitation.

d. For proposals to be considered responsive, each Offeror shall specifically address each of the evaluation factors set forth in this section. Offerors are cautioned to submit sufficient information to enable evaluators to fully ascertain the offeror's understanding of work tasks required and their capability to perform complete project execution of required contractual services. Any data submitted with a proposal should be concise and complete but not overly elaborate. Reliance on promotional brochures is discouraged.

e. Technical proposals must be submitted so as to be fully and clearly acceptable without additional explanation or information, since the Government reserves the right to make a final determination as to whether a proposal is acceptable or unacceptable solely on the basis of the proposal as submitted. However, the Government, may request from offerors additional information which clarifies or supplements, but does not basically change, any proposal as originally submitted.

f. In no case shall statements such as, "WE WILL COMPLY WITH THE REQUIREMENTS OF THE CONTRACT", or equivalent statements, be acceptable to meet the requirements of this request for proposals.

AM#0001 M.5 SPECIFIC CRITERIA FOR AWARD

a. The following MAJOR FACTORS, listed in descending order of importance, will be considered during proposal evaluation (see paragraph EVALUATION FACTORS FOR TECHNICAL PROPOSALS).

1. MANAGEMENT ABILITY (**Volume I**): The relative weight of Management Ability is 25% of the total relative weight of the technical proposal. Management Ability consists of six subfactors whose weights compose approximately 20%, 20%, 20%, 20%, 10%, and 10% (respectively) of the total relative weight of Management Ability.

2. PAST PERFORMANCE (**Volume II**): The relative weight of Past Performance is 25% of the total relative weight of the technical proposal. Past Performance consists of five subfactors whose weights compose approximately 30%, 25%, 20%, 15%, and 10% (respectively) of the total relative weight of Past Performance.

3. QUALITY CONTROL PROGRAM (**Volume I**): The relative weight of Quality Control Plan is 25% of the total relative weight of the technical proposal. Quality Control Plan consists of five subfactors whose weights compose approximately 20%, 20%, 20%, 20%, and 20% (respectively) of the total relative weight of Quality Control Plan.

4. SUBCONTRACTING SUPPORT CAPABILITY (**Volume I**): The relative weight of Subcontracting Support Capability is 20% of the total relative weight of the technical proposal. Subcontracting Support Capability consists of two subfactors whose weights compose approximately 45%, 35%, and 20% (respectively) of the total relative weight of Subcontracting Support Capability.

5. CLARITY OF PROPOSAL (**Volumes I, II, III, and IV**): The relative weight of Clarity of Proposal is 5% of the total relative weight of the technical proposal.

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6. PRICE/COST (**Volume III**): The evaluation of price will be based primarily upon the offeror's proposed coefficient.

NOTE: SEE REQUIREMENT TO SUBMIT COEFFICIENT CALCULATIONS (TO INCLUDE PROFIT), SECTION L, CLAUSE PROPOSAL SUBMISSION INSTRUCTIONS")

b. Work Plan/Price Proposal cost will also be considered. While price/cost will not be rated, it will be evaluated in terms of completeness, reasonableness, and realism (see paragraph EVALUATION FACTORS FOR PRICE PROPOSALS).

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M.6 EVALUATION FACTORS FOR TECHNICAL PROPOSALS

Emphasis will be placed on demonstrated ability to perform in the following areas.

a. **MANAGEMENT ABILITY (Volume I)**: Overall management ability as evidenced by the following sub-factors:

1. Management plan for on-site staff to include a list of key managers and proposed staff, their backgrounds, and their respective positions with regard to this contract. Include in this information a list of technical personnel, project managers, business managers, and other on-site personnel and their qualifications, experience with related work, and respective positions with regard to this contract.

2. Technical Support - Capability of the off-site technical staff; plan for architect-engineering support; and registered professional engineers, their disciplines and their roles in the contract. Individuals' experience with general project management and negotiated contracts.

3. Corporate Support - Corporate support is defined as the proven ability to provide resources from other parts of the corporation for unusual needs such as increased workload in a compressed time frame. A plan of action for providing this corporate support in a timely manner. Training plan to ensure timely and fullest integration of workforce into the MEDJOC program to achieve its objectives and comply with contract requirements.

4. Related Experience - Demonstrate ability to manage/construct multiple (i.e., as many as 20 or more) small to medium-scale construction and repair projects, in different locations, simultaneously. Describe experience with various types of related construction work and capability to do same or similar related work. List projects completed within the last five (5) years to include duration dates, due dates, time extensions, agency, contact points on individual projects, and telephone numbers for point of contact. Indicate scopes of work; levels and types of skills, trades, and equipment utilized on completed projects; and final performance evaluation for each contract.

5. Proposed plan to demonstrate response time to Government needs and requests.

6. Proposed plan to administer payroll and labor relations functions.

b. **PAST PERFORMANCE (Volume II)**: Overall past performance as evidenced by the following sub-factors:

1. Effectiveness of management

2. Timely Performance

3. Quality Control

4. Compliance with Labor Standards

5. Compliance with Safety Standards

c. **QUALITY CONTROL PROGRAM (Volume I)**: Overall management ability as evidenced by the following sub-factors:

1. Contractor's plan for the inspection and acceptance of work. Address pertinent information regarding inspection of work, correction of nonconforming work, and acceptance and close-out procedures.

2. Proposed plan to communicate workmanship and safety standards to subcontractors.

3. Proposed plan to meet JCAHO Interim Life Safety Measures during construction in a medical facility.

4. Proposed plan for submittals and conformance to JOC specifications.

5. Proposed plan for providing testing, quality control reporting, and shop drawing and drafting support. Proposed plan for quality control staffing levels and quality control

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responsibilities. Proposed testing methods and frequencies for soils, asphalt, concrete, and nondestructive tests.

d. **SUBCONTRACTING SUPPORT CAPABILITY (Volume I):** Overall management ability as evidenced by the following sub-factors, **BE SPECIFIC IN DESCRIPTION OF EXPERIENCE WITH MEDICAL FACILITY MAINTENANCE AND REPAIR WORK AND MINOR NEW CONSTRUCTION FOR MEDICAL FACILITIES:**

1. Describe plan to minimize response time between the prime contractor and his subcontractors.

2. Identify proposed subcontractors and services they will perform under this contract, both technical and trade subcontractors (include experience with maintenance and repair and new construction work of medical facilities). Identify each subcontractor's specialty and your rationale for their selection.

3. Describe plan to maximize small and small disadvantaged business participation.

e. **CLARITY OF PROPOSAL (Volumes I, II, III, and IV): OVERALL MANAGEMENT ABILITY AS EVIDENCED BY THE FOLLOWING:**

Offerors are informed their proposal will become a contract document upon award. It is important that proposals be written in a clear and concise manner. Offers will be evaluated for clarity and suitability for inclusion into a contract (see Section L).

M.7 EVALUATION FACTORS FOR PRICE PROPOSALS

a. The evaluation of price/cost will be based primarily upon each offeror's proposed coefficient (Work Plan/Price Proposal cost are also considered).

b. While proposed coefficients will not be rated as are technical evaluation criteria, they are considered to be a substantial factor and will be evaluated in terms of completeness, reasonableness, and realism in accordance with Army Federal Acquisition Regulation Supplement (AFARS) 15.404 Evaluation in this area will be geared toward determining the offeror's overall understanding of the proposed scope and effort of the specifications and of their adequate coverage of operating expenses.

1. **Completeness:** All price/cost information required by the request for proposals has been submitted, and the coefficient factors proposed conform with requirements specified in Sections B and L of the RFP.

2. **Reasonableness:** Prices/Costs are compatible with the proposed scope and effort of the specifications, i.e., costs are neither excessive nor insufficient for the effort to be accomplished. Unrealistically low or **UNREALISTICALLY HIGH** coefficients or other price/cost data may be grounds for eliminating a proposal from competition either on the basis that the offeror does not understand the requirements or has made an improvident proposal.

3. **Realism:** Prices/Costs are fully justified and documented, i.e., developed by using appropriate and acceptable methodologies, factual or verifiable data, and estimates supported by valid and suitable assumptions and estimating techniques. **NOTE:** Offerors shall submit with the price proposal the data utilized to calculate coefficients (to include break out of profit figures) (as required in Section B Notes and in Section L). This data is required to support the proposed coefficients and for the Government to assess the offeror's understanding of contract requirements, ability to meet financial requirements (such as bonding), and to plan for covering initial cash flow deficits. Failure of the offeror to include this data may result in inability of the Government to determine the offeror's clear understanding of contractual requirements.

4. Award may be made to the superior offer which is not the lowest offered price, but which is sufficiently more advantageous than the lowest offer so as to justify the payment of a higher price. As technical proposals become more equivalent, cost consideration becomes more significant and may become the determining factor for award.

c. For evaluation purposes, the Government will assume that ninety-five (95%) of the work will be done during the 7:00 a.m. to 9:00 p.m. portion of the normal duty hours defined in this solicitation as 12:01 a.m. to 11:59 p.m.

M.8 SUBCONTRACTING PLANS

****FOR LARGE BUSINESSES ONLY:** Subcontracting plans will be reviewed for compliance with the FAR 52.219-9 and will be scored in accordance with AFARS 19.7, Appendix CC. If in the event technical and price becomes more equivalent for two or more large businesses who are being considered for award, the subcontracting plan will then become more significant and may become the determining factor for award.

(End of Clause)

END OF SECTION M

SPECIAL NOTICE TO OFFERERS WITH REGARD TO SOLICITATION NUMBER DACA63-01-R-0013 AND THE DAVIS-BACON ACT WAGE DETERMINATIONS (DECISIONS) INCORPORATED THEREIN:

Please note that only those Davis-Bacon Act Wage Decisions/Wage Rates applicable to Building Construction Projects, have been incorporated within the solicitation/award. This action has been taken due to the preponderance of Delivery/Task Orders anticipated to be issued for these specific construction activities under the solicitation/award.

In accordance with FAR 22.404-9, Award of Contract Without Required Wage Determination, if a Delivery/Task Order is issued for any area not specifically identified and incorporated within this solicitation/award, or for any Davis-Bacon Act construction decisions other than those of the Building Construction Decisions, i.e., Heavy, Highway, Residential, Sewer and Water Construction Projects, then that/those wage decision(s) will be incorporated by contract modification and contract pricing equitably adjusted.

APPLICATION OF WAGE DECISIONS

Solicitation No.: DACA63-01-R-0013
Project: Medical Job Order Contract (JOC)
Location: All U.S. Counties Including Alaska, Hawaii,
and Puerto Rico

1. **Davis-Bacon Act Wage Decisions for Building Construction Projects** are applicable to all construction activities related to the construction, alteration, painting, or repair of buildings, installations within buildings, appurtenances to buildings, foundations for buildings, excavation and fill for buildings, and utilities within five feet of buildings for those activities performed under this solicitation.
2. Enclosed is an **Installation/County/Applicable Wage Decision Listing** (by State) with the applicable Davis-Bacon Act Building Construction Wage Decision(s) annotated for each identified installation.
3. Attached are all applicable **Davis-Bacon Act Building Construction Wage Decisions** to be utilized for work performance under the solicitation.

*Any questions Prospective Bidders may have with regard to Davis-Bacon Act Wage Decision Applicability must be addressed to the Fort Worth District Contracting Division Labor Relations Team at 1-800-443-7914.

NOTE:

- (1) **CERTIFIED PAYROLL RECORDS ARE REQUIRED, UNDER THE DAVIS-BACON AND RELATED ACTS (DBRA), AND MUST BE SUBMITTED WEEKLY, TO THE U.S. ARMY CORPS OF ENGINEERS, FOR ALL CONSTRUCTION PERFORMED.**
- (2) **THE WAGE DECISION NUMBER AND THE TASK/DELIVERY ORDER NUMBER APPLICABLE TO THE WORK PERFORMED FOR EACH CERTIFIED PAYROLL PERIOD, IS TO BE SHOWN (ANNOTATED) ON EACH AND EVERY CERTIFIED PAYROLL RECORD SUBMITTED. MULTIPLE WAGE DECISION USAGE DURING ANY ONE WORK PERIOD SHALL ALSO BE SO ANNOTATED TO THE CERTIFIED PAYROLL RECORD.**

INSTALLATION COUNTY(IES) APPLICABLE WAGE DECISION

ALABAMA

Fort McClellan	Calhoun County	AL010004
Fort Rucker	Coffee and Dale Counties	Coffee – AL010043
		Dale – AL010051
Redstone Arsenal	Madison County	AL010003
*Fort Benning	Russell County	AL010001

(*FOR THOSE PORTIONS OF FORT BENNING GEORGIA FALLING INTO THE CHATTAHOOCHEE AND MUSCOGEE COUNTIES GEORGIA AREA: GA010001)

ALASKA

Fort Greely	Southeast Fairbanks	AK010001
Fort Wainwright	Fairbanks North Star	AK010001
Fort Richardson	Anchorage	AK010001

ARIZONA

Fort Huachuca	Cochise County	AZ010005
Yuma Proving Grounds	La Paz and Yuma Counties	La Paz – AZ010005
		Yuma – AZ010006

CALIFORNIA

Fort Irwin	San Bernardino County	CA010037
Presidio of Monterey	Monterey County	CA010029
Sierra Depot	Lassen County	CA010009

COLORADO

Fort Carson	El Paso County	CO010002
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DISTRICT OF COLUMBIA

Fort McNair	District of Columbia	DC010003
Walter Reed Army Med	District of Columbia	DC010003

FLORIDA

Camp James E. Rudder	Okaloosa, Santa Rosa, and Walton Counties	Okaloosa – FL010095
		Santa Rosa – FL010102
		Walton – FL010016

INSTALLATION COUNTY(IES) APPLICABLE WAGE DECISION

GEORGIA

Camp Frank D. Merrill	Lumpkin County	GA010006
Fort Benning*	Chattahoochee and Muscogee Counties	GA010001
(*FOR THOSE PORTIONS OF FORT BENNING GEORGIA FALLING INTO THE RUSSELL COUNTY ALABAMA AREA: AL010001)		
Fort Gordon	Columbia, Jefferson, McDuffie, and Richmond Counties	Columbia, McDuffie – GA010049 Jefferson – GA010036 Richmond – GA010002
Fort McPherson	Fulton County	GA010087
Fort Stewart	Bryan, Evans, Liberty, Long and Tatnall Counties	Bryan, Evans, Liberty – GA010034 Long, Tatnall – GA010036
Hunter Army Airfield	Chatham County	GA010004

HAWAII

Fort Kamehameha	Honolulu	HI010001
Fort Shafter	Honolulu	HI010001
Kilauea Mil Res	Hawaii	HI010001
Pohakuloa Trng Area	Hawaii	HI010001
Schofield Barracks	Honolulu	HI010001
Tripler	Honolulu	HI010001

ILLINOIS

Charles Melvin Price Center	Madison County	IL010007
Rock Island Arsenal	Rock Island County	IL010001
Savanna Army Depot	Carroll County	IL010001

KANSAS

Fort Leavenworth	Leavenworth County	KS010008
Fort Riley	Geary and Riley Counties	Geary – KS010010 Riley – KS010011

KENTUCKY

Bluegrass Ordnance	Madison County	KY010029
*Fort Campbell	Christian and Trigg Counties	Christian – KY010005 Trigg – KY010029

(*FOR THOSE PORTIONS OF FORT CAMPBELL KENTUCKY FALLING INTO THE
MONTGOMERY AND STEWART COUNTIES TENNESSEE AREA:
Montgomery – TN010035 Stewart – TN010055)

INSTALLATION COUNTY(IES) APPLICABLE WAGE DECISION

Fort Knox	Bullitt, Hardin, and Meade Counties	Bullitt – KY010029 Hardin, Meade – KY010007
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LOUISIANA

Fort Polk	Vernon Parish	LA010005
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MARYLAND

Aberdeen Proving Ground	Harford County	MD010042
Edgewood Arsenal	Harford County	MD010042
Fort Detrick	Frederick County	MD010009
Fort Meade	Anne Arundel County	MD010021
Forest Glen	Montgomery County	MD010056

MICHIGAN

Detroit Arsenal	Macomb County	MI010082
Selfridge AGB	Macomb County	MI010082

MISSOURI

Fort Leonard Wood	Pulaski County	MO010005
Lake City AAP	Jackson County	MO010002

NEW JERSEY

Fort Dix	Burlington and Ocean Counties	NJ010002
Fort Monmouth	Monmouth County	NJ010002
Mil Ocean TML Bayonne	Hudson County	NJ010003
Picatiny Arsenal	Morris County	NJ010003

NEW MEXICO

White Sands Missile Range	Dona Ana, Lincoln Otero, Sierra, and Socorro Counties	NM010001
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NEW YORK

Fort Drum	Jefferson County	NY010009
Fort Hamilton	Kings County	NY010003
Seneca Army Depot	Seneca County	NY010077
Watervliet Arsenal	Albany County	NY010002
West Point Mil Res	Orange County	NY010007

NORTH CAROLINA

Fort Bragg	Cumberland, Hoke, and Moore Counties	Cumberland – NC010032 Hoke, Moore – NC010007
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INSTALLATION COUNTY(IES) APPLICABLE WAGE DECISION

OKLAHOMA

Fort Sill Comanche County OK010014

OREGON

Umatilla Army Depot Morrow and Umatilla Counties OR010001

PENNSYLVANIA

Carlisle Barracks Cumberland County PA010010

Fort Indiantown Gap Lebanon County PA010008

Letterkenny Army Depot Franklin County PA010016

New Cumberland Army Depot York County PA010010

Tobyhanna Army Depot Monroe County PA010029

PUERTO RICO

Fort Buchanan Guaynabo PR010001

SOUTH CAROLINA

Fort Jackson Richland County SC010037

TENNESSEE

*Fort Campbell Montgomery and Stewart Counties Montgomery – TN010035
Stewart – TN010055

(*FOR THOSE PORTIONS OF FORT CAMPBELL KENTUCKY FALLING INTO THE CHRISTIAN AND TRIGG COUNTIES KENTUCKY AREA: Christian – KY010005
Trigg – KY010029)

TEXAS

Fort Bliss El Paso County TX010009

Fort Hood Bell and Coryell Counties TX010051

Fort Sam Houston Bexar County TX010003

VIRGINIA

Arlington Arlington County VA010078

Fort AP Hill Caroline County VA010034

Fort Belvoir Fairfax County VA010079

Fort Eustis Newport News County VA010003

Fort Lee Prince George County VA010032

Fort Meyer Arlington County VA010078

Fort Monroe Hampton County VA010035

Fort Story Virginia Beach County VA010015

Pentagon Arlington County VA010078

INSTALLATION COUNTY(IES) APPLICABLE WAGE DECISION

WASHINGTON

Fort Lewis	Pierce County	WA010002
Yakima Firing Range	Yakima County	WA010013

WISCONSIN

Fort McCoy	Monroe County	WI010018
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AL010004 04/06/01 AL4

General Decision Number AL010004

Superseded General Decision No. AL000004

State: Alabama

Construction Type:

BUILDING

County(ies):

CALHOUN

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to including 4 stories).

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001

COUNTY(ies):

CALHOUN

* IRON0092A 10/01/2000

	Rates	Fringes
IRONWORKER (STRUCTURE & REINFORCING)	18.00	6.18

* SFAL0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	20.90	6.00

SUAL1031A 08/01/1993

	Rates	Fringes
CARPENTERS (Incl. Drywall Hanging)	10.41	
CEMENT MASON/CONCRETE FINISHERS	10.11	
ELECTRICIANS	10.59	
GLAZIERS	10.12	
LABORERS, UNSKILLED	6.18	
PAINTERS, BRUSH	9.12	
PIPEFITTERS (Including HVAC WORK)	11.85	4.77
PLUMBERS	12.73	2.65
POWER EQUIPMENT OPERATORS:		
Backhoe	9.53	
ROOFERS	8.71	
SHEET METAL WORKERS (Including Duct Work)	9.00	
TILE SETTERS	11.23	
TRUCK DRIVERS	8.94	

WELDERS - Receive rates prescribed for craft performing operation to which is incidental.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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U.S. Department of Labor
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Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Forklifts	5.15
Loaders	5.88
Mechanics	5.15
Saw (brick)	5.15
ROOFERS	6.00
SHEET METAL WORKERS	5.53
SOFT FLOOR LAYERS	6.00
TILE SETTERS	7.00
TRUCK DRIVERS	5.40

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AL010051 03/02/01 AL51

General Decision Number AL010051

Superseded General Decision No. AL000051

State: Alabama

Construction Type:

BUILDING

County(ies):

DALE

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single homes and apartments up to and including 4 stories)

Modification Number **Publication Date**
0 03/02/2001

COUNTY(ies):

DALE

	Rates	Fringes
SUAL1021A 08/16/1996		
Bricklayers/Blocklayers	11.55	
Carpenters (including drywall hangers, batt insulation, & acoustical ceiling installers)	9.08	
Cement Masons/Concrete Finishers	8.93	
Electricians	9.04	
Ironworkers, structural (including metal building erection)	11.28	
Laborers:		
Unskilled	6.50	
Pipelayers	6.93	
Painters, Brush	8.68	
Pipefitters (including HVAC pipe work)	10.71	
Plumbers	10.00	
POWER EQUIPMENT OPERATORS:		
Backhoes	9.08	
Grader	8.75	
Loader	8.60	
Mechanics	12.41	
Roofers	8.04	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Sheet Metal Worker (including HVAC duct work)	8.69
Soft Floor Layers	8.00
Truck Drivers	7.96

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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END OF GENERAL DECISION

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AL010001 07/06/2001 AL1

Date: July 6, 2001
 General Decision Number **AL010001**

Superseded General Decision No. AL000001

State: **Alabama**

Construction Type:
BUILDING

County(ies):
 AUTAUGA MONTGOMERY
 ELMORE RUSSELL

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001
1	06/01/2001
2	07/06/2001

COUNTY(ies):
 AUTAUGA MONTGOMERY
 ELMORE RUSSELL

BOIL0108B	11/01/1999		
		Rates	Fringes
AUTAUGA, ELMORE AND MONTGOMERY COUNTIES;			
BOILERMAKERS		20.85	7.41

BOIL0199E	11/01/1999		
		Rates	Fringes
RUSSELL COUNTY:			
BOILERMAKERS		20.10	7.41

ELEC0443A	06/01/2001		
		Rates	Fringes
AUTAUGA, ELMORE, AND MONTGOMERY COUNTIES:			
ELECTRICIANS		18.65	3%+6.45

ELEC0779C	09/01/2000		
		Rates	Fringes
RUSSELL COUNTY:			
ELECTRICIANS		17.60	4%+4.40

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
CABLE SPLICERS	17.85	4%+4.40

SUAL1001A 11/03/1999		
CARPENTERS, (Includ. Drywall Hanging)	11.18	
CEMENT MASONS/CONCRETE FINISHER	10.00	
LABORERS:		
Unskilled	6.69	
Pipelayers	8.00	
PAINTERS, Brush	9.00	
PIPEFITTERS	9.61	.86
PLUMBERS, (Including HVAC Pipe Work)	12.47	
POWER EQUIPMENT OPERATORS:		
Backhoe	9.75	
Bulldozer	12.50	.86
Crane Operator	11.00	
Grader/Gradall Operator	12.50	.86
Loader/Bobcat	7.50	
ROOFERS	11.50	
SHEET METAL (Includ. HVAC Duct)	12.76	
TRUCK DRIVERS	8.00	

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

position on a wage determination matter
* a conformance (additional classification and rate)
ruling

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AK010001 07/06/2001 AK1

Date: July 6, 2001
 General Decision Number **AK010001**

Superseded General Decision No. AK000001

State: **Alaska**

Construction Type:
BUILDING
 HEAVY

County(ies):
STATEWIDE

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	03/30/2001
3	04/06/2001
4	04/20/2001
5	04/27/2001
6	07/06/2001

COUNTY(ies):
 STATEWIDE

ASBE0097A 01/01/2001	Rates	Fringes
ASBESTOS WORKERS/INSULATORS (includes application of all insulating materials protective coverings, coatings and finishings to all types of mechanical systems)	26.58	5.39

ASBE0097B 01/05/1995	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging, and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems)	21.55	6.79

BOIL0502A 01/01/2001	Rates	Fringes
BOILERMAKERS	32.20	10.65

BRAK0001A 07/01/2000	Rates	Fringes
BRICKLAYERS, BLOCKLAYERS, STONEMASON, MARBLE MASON,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TILE SETTER & TERRAZZO WORKER	27.57	10.80
TILE & TERRAZZO FINISHERS	22.14	10.80

CARP1243A 07/01/2000		
	Rates	Fringes
NORTH OF THE 63RD PARALLEL		
CARPENTERS/LATHER/DRYWALL APPLICATOR	29.80	10.15
DEWALT OR SIMILAR TYPE SAW OPERATORS; SAW FILERS; NAILING MACHINE OPERATORS; POWER-ACTUATED TOOL OPERATOR; MAR-LITE AND ACOUSTICAL APPLICATOR FLOOR WORKERS; FIRE OR FLOOD REPAIR WORK	30.35	10.15
MILLWRIGHTS	30.72	10.15

* CARP1281A 07/01/2000		
	Rates	Fringes
SOUTH OF 63RD PARALLEL		
CARPENTERS & DRYWALLERS	26.10	10.70
ACOUSTICAL APPLICATOR AND LATHERS	26.10	10.70
MILLWRIGHTS	26.80	10.70

* CARP2520A 07/01/2001		
	Rates	Fringes
DIVERS:		
WORKING	58.80	11.60
STAND-BY	29.40	11.60
TENDER	28.40	11.60
PILEDRIVERS:		
WELDER	27.00	11.60
CARPENTER	26.40	11.60
SHEET PILE STABBER	26.24	11.60
PILEDRIVER; SKIFF OPERATOR AND RIGGER	25.24	11.60

ELEC1547A 01/01/2001		
	Rates	Fringes
ELECTRICIANS; TECHNICIANS	27.67	3%+11.35
CABLE SPLICERS	29.42	3%+11.35

ELEC1547B 01/01/2001		
	Rates	Fringes
LINEMEN; EQUIPMENT OPERATORS; TECHNICIAN	32.15	3%+13.50
CABLE SPLICER	33.90	3%+13.50
POWDERMAN	30.15	3%+13.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEV0019A 04/01/2001

	Rates	Fringes
ELEVATOR MECHANICS	34.035	7.195+a

FOOTNOTE: a. Employer contributes 8% of the basic hourly rate for over 5 year's service and 6% of the basic hourly rate for 6 months to 5 years' of service as vacation paid credit. Seven paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day, Thanksgiving Day; Friday after Thanksgiving and Christmas Day

* ENGI0302A 07/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	31.26	9.24
GROUP 1A	32.80	9.24
GROUP 2	30.59	9.24
GROUP 3	29.96	9.24
GROUP 4	24.54	9.24

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Roller; Back Filler; Barrier Machine (Zipper); Batch Plant Operator; Batch and Mixer over 200 yds.; Beltcrete with power pack and similar conveyors; Bending Machine; Boat Coxwains; Bulldozers; Cableways, Highlines and Cablecars; Cleaning Machine; Coating Machine; Concrete Hydro Blaster; Cranes-45 tons and under or 150 foot boom and under (including jib and attachments): (a) Shovels, Backhoes, Draglines, Clamshells; Gradalls-3 yards and under; (b) Hydralifts or Transporters, all track or truck type, (c) Derricks; Crushers; Deck Winches-Double Drum; Ditching or Trenching Machine (16 inch or over); Drilling Machines, core, cable, rotary and exploration; Finishing Machine Operator, concrete paving, Laser Screed, sidewalk, curb and gutter machine; Helicopters; Hover Craft, Flex Craft, Loadmaster, Air Cushion, All Terrain Vehicle, Rollagon, Bargecable, Nodwell Sno Cat; Hydro Ax: Feller Buncher and similar; Loaders: Forklifts with power boom and swing attachment, Overhead and front end, 2 1/2 yards through 5 yards, Loaders with forks or pipe clamps, Loaders, elevating belt type, Euclid and similar types; Mechanics, Bodyman; Micro Tunneling Machine; Mixers: Mobile type w/hoist combination; Motor Patrol Grader; Mucking Machines: Mole, Tunnel Drill, Horizontal/Directional Drill Operator, and/or Shield; Operator on Dredges; Piledriver Engineers, L. B. Foster, Puller or similar Paving Breaker; Power Plant, Turbine Operator, 200 k.w. and over (power plants or combination of power units over 300 k.w.); Sauerman-Bagley; Scrapers-through 40 yards; Service Oiler/Service Engineer; Sidebooms-under 45 tons; Shot Blast Machine; Spreaders, Blaw Knox, Cedarapids, Barber Greene, Slurry Machine; Sub-grader (Gurries, C.M.I. and C.M.I. Roto Mills and similar types); Tack

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

tractor; Truck mounted Concrete Pumps, Conveyor, Creter; Water Kote Machine; Unlicensed off road hauler

GROUP 1A: Cranes-over 45 tons or 150 foot (including jib and attachments): (a) Shovels, backhoes, draglines, clamshells-over 3 yards, (b) Tower cranes; Loaders over 5 yds.; Motor Patrol Grader (finish: when finishing to final graders and/or to hubs, or for asphalt); Power Plants: 1000 k.w. and over; Quad; Screed; Sidebooms over 45 tons; Slip Form Paver C.M.I. and similar types; Scrapers over 40 yards

GROUP 2: Batch Plant Operators: Batch and Mixer 200 yds. per hour and under; Boiler-fireman; Cement Hog and Concrete Pump Operator; Conveyors (except as listed in group 1); Hoist on steel erection; Towermobiles and Air Tuggers; Horizontal/Directional Drill Locator; Loaders, Elevating Grader, Dumor and similar; Locomotives: rod and geared engines; Mixers; Screening, Washing Plant; Sideboom (cradling rock drill regardless of size); Skidder; Trenching Machine under 16 inches.

GROUP 3: "A" Frame Trucks, Deck Winches: single power drum; Bombardier (tack or tow rig); Boring Machine; Brooms-power; Bump Cutter; Compressor; Farm tractor; Forklift, industrial type; Gin Truck or Winch Truck with poles when used for hoisting; Grade Checker and Stake Hopper; Hoist, Air Tuggers, Elevators; Loaders: (a) Elevating-Athey, Barber Green and similar types (b) Forklifts or Lumber Carrier (on construction job site) (c) Forklifts with Tower (d) Overhead and Front-end, under 2 1/2 yds. Locomotives: Dinkey (air, steam, gas and electric) Speeders; Mechanics (light duty); Mixers: Concrete Mixers and Batch 200 yds. per hour and under; Oil, Blower Distribution; Post Hole Diggers, mechanical; Pot Fireman (power agitated); Power Plant, Turbine Operator, under 300 k.w.; Pumps-water; Rig oiler/assistant engineer, over 45 ton, over 3 yards or over 150 foot boom; Roller-other than Plantmix; Saws, concrete; Straightening Machine; Tow Tractor

GROUP 4: Rig Oiler/Assistant Engineer (Advances to Group III if over 45 tons or 3 yards or 150 ft. boom); Swamper (on trenching machines or shovel type equipment); Spotter; Steam Cleaner

FOOTNOTE: Groups 1-4 receive 10% premium while performing tunnel or underground work.

IRON0751A 08/01/2000		
	Rates	Fringes
IRONWORKERS:		
BRIDGE, STRUCTURAL,		
ORNAMENTAL, REINFORCING		
MACHINERY MOVER, RIGGER,		
SHEETER, STAGE RIGGER,		
BENDER OPERATOR	25.50	12.10
GUARDRAIL LAYOUT MAN	22.74	11.85
FENCE, BARRIER AND		
GUARDRAIL INSTALLERS	22.00	11.85

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HELICOPTER, TOWER 26.50 12.10

LABO0341A 07/01/2000

	Rates	Fringes
LABORERS:		
GROUP 1	24.55	8.69
GROUP 2	25.30	8.69
GROUP 3	25.95	8.69
Group 4	16.90	8.69

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer (curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk and Utilidor Laborer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Chainsaw Operator (filer); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzle, vibrator man); Environmental Laborer (marine work); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Guardrail Machine Operator; Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds); Mason Tender and Mud Mixer (sewer work); Pipelayers, Pipe Builder, Plastic Welding; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, Chain Saw Operator; Timberman

GROUP 3: Asphalt Raker, Asphalt Belly dump lay down; Bit Grinder, Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air-track drills, hydraulic drills); Grademan (setting or transferring of grade marks); High Rigger and Tree Topper; High Scaler; Pioneer Drilling and Drilling Off Tugger (all type drills); Powderman; Slurry Seal Squeegee Man; Arc Welding (in connection with laborers work)

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES

GROUP 1	27.00	8.69
GROUP 2	27.83	8.69
GROUP 3	28.55	8.69

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang;
Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers;
Jackhammers; Laser Instrument Operators; Nozzleman, Pumpcrete or
Shotcrete; Pipelayers.

GROUP 3: Miner; Miner/powerman; Retimberman

Tunnel shaft and raise rates only apply to workers regularly
employed inside a tunnel portal or shaft collar.

* PAIN1140C 07/01/2001

	Rates	Fringes
SOUTH OF THE 63RD PARALLEL		
PAINTERS		
Brush, Roller, Sign	23.28	8.40
Paper and Vinyl, Swing		
Stage, Taper/Drywall,		
Structural Steel	23.68	8.40
Spray-Sand/Blast, Epoxy		
and Tar Applicator	24.28	8.40
Steeple Jack & Tower	25.28	8.40

* PAIN1140E 07/01/2001

	Rates	Fringes
SOFT FLOOR LAYERS	23.80	6.68

* PAIN1140F 06/01/2001

	Rates	Fringes
SOUTH OF THE 63RD PARALLEL		
GLAZIERS	24.07	10.08

PAIN1555C 04/01/2000

	Rates	Fringes
NORTH OF THE 63RD PARALLEL		
PAINTERS:		
BRUSH, BUFFER OPERATOR, FLOOR-		
COVERER, POT TENDER, ROLL		
SPRAY, WALLCOVERER	25.50	8.30

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HAZARDOUS MATERIAL APPLICATOR,
 LEAD BASED PAINT ABATEMENT,
 RADON MITIGATION, SANDBLAST,
 STRUCTURAL STEEL, TAPING,
 TEXTURING

26.00 8.30

 PAIN1555E 08/01/2000

Rates Fringes

NORTH OF THE 63RD PARALLEL

GLAZIERS 26.62 6.55

 PLAS0867A 02/01/2000

Rates Fringes

NORTH OF THE 63RD PARALLEL:

CEMENT MASONS 28.10 8.48
 PLASTERERS 29.58 8.48

SOUTH OF THE 63RD PARALLEL

CEMENT MASONS 27.85 8.48
 PLASTERERS 29.33 8.48

 PLUM0262C 01/01/2001

Rates Fringes

East of the 141st Meridian

PLUMBERS; STEAMFITTERS 28.09 10.00

 * PLUM0367B 07/01/2001

Rates Fringes

South of the 63rd Parallel

PLUMBERS; STEAMFITTERS 30.05 10.00

 PLUM0375A 07/01/2000

Rates Fringes

North of the 63rd Parallel

PLUMBERS; STEAMFITTERS 31.91 10.60

 PLUM0669A 04/01/2001

Rates Fringes
 SPRINKLER FITTER 34.80 8.50

 ROOF0190A 03/01/2001

Rates Fringes

NORTH OF THE 63RD PARALLEL:

ROOFERS 30.60 9.25

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SOUTH OF THE 63RD PARALLEL		
ROOFERS	28.60	9.25

SHEE0023A 07/01/2000		
	Rates	Fringes
South of the 63rd Parallel:		
SHEET METAL WORKERS	30.05	8.79

SHEE0023B 07/01/2000		
	Rates	Fringes
North of the 63rd Parallel:		
SHEET METAL WORKERS	31.36	9.74

TEAM0959A 09/01/2000		
	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	29.85	8.85
GROUP 1A	30.90	8.85
GROUP 2	28.80	8.85
GROUP 3	28.12	8.85
GROUP 4	27.65	8.85
GROUP 5	27.01	8.85

GROUP 1: Semi with Double Box Mixer; Dump Trucks (including rockbuggy and trucks with pups) over 40 yards up to and including 60 yards; Deltas, Commanders, Rollogans and similar equipment when pulling sleds, trailers or similar equipment; Boat Coxswain; Lowboys including attached trailers and jeeps, up to and including 12 axles; Ready-mix over 12 yards up to and including 15 yards)

GROUP 1A: Dump Trucks (including Rockbuggy and Trucks with pups) over 60 yards up to and including 100 yards

GROUP 2: Turn-O-Wagon or DW-10 not self-loading; All Deltas, Commanders, Rollogans, and similar equipment; Mechanics; Tireman, heavy duty; Dump Trucks (including Rockbuggy and Trucks with pups) over 20 yards up to and including 40 yards; Lowboys including attached trailers and jeeps up to and including 8 axles; Super vac truck/cacasco truck/heat stress truck; Ready-mix over 7 yards up to and including 12 yards

GROUP 3: Dump Trucks (including Rockbuggy and Trucks with pups) over 10 yards up to and including 20 yards; Ready mix/batch trucks 8 yards and up; Oil distributor drivers; Greaser; Water Wagon (when pulled by Euclid or similar type equipment); Partsman

GROUP 4: Buggymobile; Semi or Truck and trailer; Dumpster; Tireman (light duty); Dump Trucks (including Rockbuggy and Truck with pups) up to and including 10 yards; Track Truck Equipment; Stringing Truck; Fuel Truck; Fuel Handler with truck; Grease Truck; Flat Beds, dual rear axle; Hyster Operators (handling bulk

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

aggregate); Lumber Carrier; Water Wagon, semi; Water Wagon, dual axle; Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame manufactured rating over 5 tons; Bull Lifts and Fork Lifts with Power Boom and Swing attachments, over 5 tons; Front End Loader with Forks; Bus Operator over 30 passengers; All Terrain Vehicles; Boom Truck/Knuckle Truck over 5 tons; Foam Distributor Truck/dual axle; Hydro-seeders, dual axle; Vacuum Trucks, Truck Vacuum Sweepers; Vacuum Trucks, Truck Vacuum Sweepers; Loadmaster (air and water); Air Cushion or similar type vehicle; Fire Truck; Combination Truck-fuel and grease; Compactor (when pulled by rubber tired equipment); Rigger (air/water/oilfield); Ready Mix, up to and including 7 yards

GROUP 5: Gravel Spreader Box Operator on Truck; Flat Beds, single rear axle; Boom Truck/Knuckle Truck up to and including 5 tons; Pickups (Pilot Cars and all light duty vehicles); Water Wagon, single axle; Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame, manufactured rating 5 tons and under; Bull Lifts and Fork Lifts (fork lifts with power broom and swing attachments up to and including 5 tons); Buffer Truck; Tack Truck; Bus Operators (up to 30 passengers); Farm type Rubber Tired Tractor (when material handling or pulling wagons on a construction project); Foam Distributor, single axle; Hydro-Seeders, single axle; Team Drivers (horses, mules and similar equipment); Rigger (warehouse operation); Fuel Handler (station/bulk attendant); Batch Truck, up to and including 7 yards

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AZ010005 06/22/01 AZ5

General Decision Number AZ010005

Superseded General Decision No. AZ000005

State: **Arizona**

Construction Type:

BUILDING

County(ies):

COCHISE	GREENLEE	YAVAPAI
GILA	LA PAZ	
GRAHAM	SANTA CRUZ	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001
2	06/22/2001

COUNTY(ies):

COCHISE	GREENLEE	YAVAPAI
GILA	LA PAZ	
GRAHAM	SANTA CRUZ	

* ENGI0428A 06/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS: Blade/Grader; and Scraper	19.41	4.18

IRON0075C 01/01/2001

	Rates	Fringes
IRONWORKERS; STRUCTURAL		
Mileage from City Hall in Phoenix or Tucson:		
0-50 miles	20.40	9.36
50-100 miles	21.90	9.36
100-150 miles	23.15	9.36
over 150 miles	24.40	9.36

PLUM0469K 07/01/2000

	Rates	Fringes
LA PAZ AND YAVAPAI COUNTIES		
PIPEFITTERS:		
ZONE 1:		
Commercial	23.35	7.75
Industrial	26.35	7.75
ZONE 2:		
Commercial	26.35	7.75
Industrial	29.35	7.75

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ZONE DEFINITIONS FOR PLUMBERS & PIPEFITTERS

ZONE 1: Area within a 20 mile radius of the center of the following towns: Flagstaff, Holbrook, Kingman, Lake Havasu City, Prescott, Show Low, Springerville, St Johns, Winslow, and Yuma; and area within 40 miles of the center of Phoenix

ZONE 2: Area outside a 20 mile radius of the center of the following towns: Flagstaff, Holbrook, Kingman, Lake Havasu City, Prescott, Show Low, Springerville, St Johns, Winslow, and Yuma; and area outside a 40 mile radius of the center of Phoenix

PLUM0741A	07/01/2000		
		Rates	Fringes
COCHISE, GILA, GRAHAM, GREENLEE, AND SANTA CRUZ COUNTIES			
PIPEFITTERS		21.00	7.02

SFAZ0669C	04/01/2001		
		Rates	Fringes
SPRINKLER FITTERS, FIRE			
		23.40	6.00

SUAZ1006A	03/01/1994		
		Rates	Fringes
ASBESTOS WORKERS (Industrial Insulation)			
		11.53	
BRICKLAYERS (Including Cement Blocks)			
		11.52	
CARPENTERS (Including Cabinet Installing, Metal Roof Installing, Metal Building Erecting, and Frame Work; Excluding Batt/Blown Insulation, and Drywall Hanging			
		12.44	
CEMENT MASONS (Including Cement Finishing)			
		12.82	
DRYWALL HANGER			
		11.50	
DRYWALL FINISHER/TAPER			
		10.00	
ELECTRICIANS			
		11.34	2.01
GLAZIERS			
		10.47	
INSULATORS, Batt/Blown			
		10.93	.64
LABORERS:			
General		6.45	
Concrete Worker		9.00	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MASON TENDERS	8.63	
PAINTERS (Spray, Roller, and Brush; excluding Taping)	10.67	
PLUMBERS	14.04	
POWER EQUIPMENT OPERATORS:		
Backhoe	11.19	2.00
Loader	10.17	1.80
ROOFERS (Excluding Metal Roofs)	8.41	
SHEET METAL WORKERS (Including HVAC Duct Work)	14.33	5.00

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

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indicate unions whose rates have been determined to be
prevailing.

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- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

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for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
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U. S. Department of Labor
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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION AZ010006 04/13/01 AZ6

General Decision Number AZ010006

Superseded General Decision No. AZ000006

State: **Arizona**

Construction Type:
BUILDING

County(ies):
MOHAVE YUMA

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001

COUNTY(ies):
MOHAVE YUMA

* ASBE0073A 09/01/2000

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems	19.82	7.08

BRAZ0003E 01/01/2001

	Rates	Fringes
BRICKLAYERS; MARBLE SETTERS; AND TILE LAYERS	20.90	2.69

IRON0075B 01/01/2001

	Rates	Fringes
IRONWORKERS: 0-50 miles from City Hall in Phoenix or Tucson	20.40	9.36
50-100 miles	21.90	9.36
100-150 miles	23.15	9.36
over 150 miles	24.40	9.36

PLUM0469D 07/01/2000

	Rates	Fringes
PLUMBERS & PIPEFITTERS: ZONE 1:		
Commercial	23.35	7.75
Industrial	26.35	7.75

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ZONE 2:

Commercial	26.35	7.75
Industrial	29.35	7.75

ZONE DEFINITIONS FOR PLUMBERS & PIPEFITTERS

ZONE 1: Area within a 20 mile radius of the center of the following towns: Kingman, Lake Havasu City, and Yuma

ZONE 2: Area outside a 20 mile radius of the center of the following towns: Kingman, Lake Havasu City, and Yuma

 * SFAZ0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	23.40	7.50

 SUAZ1005A 08/01/1993

	Rates	Fringes
CARPENTERS (Excluding Batt/Blown Insulation, and Drywall Hanging)	12.59	
CEMENT MASONS	13.26	
DRYWALL HANGERS	10.00	
ELECTRICIANS	13.02	
HVAC DUCT INSTALLER	12.83	
INSULATOR, BATT/BLOWN	9.00	
LABORERS:		
General	7.68	
Concrete Worker	9.00	
METAL BUILDING ERECTOR	11.64	
PAINTERS	11.00	

 TEAM0104A 06/01/2000

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	11.17	4.12
GROUP 2	14.14	4.12
GROUP 3	14.47	4.12
GROUP 4	15.92	4.12
GROUP 5	16.52	4.12
GROUP 6	16.75	4.12
GROUP 7	18.35	4.12

TRUCK DRIVERS CLASSIFICATIONS:

GROUP 1: Pickup Driver, Station Wagon Driver, Man Haul Driver, Self-propelled Street Sweeper, Buggymobile 1 cu yd or less,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Vacuum Pump Truck Driver, Forklift or Fork Truck or Ross Carrier, Dumpster under 7 cu yd, Slurry type equipment driver or Leverman, Flaherty Spreader or Leverman

GROUP 2: 2 or 3 axle Dump or Flatrack Driver, Water Truck under 2500 gal., Boom Truck "A" Frame, Ginpole Winch Truck and similar equipment, Heavy Duty Mechanic/Welder

GROUP 3: 4 axle Dump/Flatrack, Dumpster 7 cu yd and over, Redi-Mix Driver less than 10.5 cu yd, Concrete Pump Driver(when integral part of Redi-Mix Truck), Oil Tanker/Distributor Truck Driver/Bootman/Retortman/Leverman, Foremost Rollagon/Melroe/Hosky and similar type equipment when hauling men, material, and equipment, Water Truck Driver 2500 gal. but less than 4000 gal.

GROUP 4: 5 axle Dump or Flatrack Driver, Water Truck Driver 4000 gal. and over, Redi-Mix Drivers 10.6 cu yd and up to 14 cu yd, Hydro Lift, Swedish Crane, Iowa 300 and similar types.

GROUP 5: 6-axle Dump or Flatrack Driver, Rock Truck Driver (Dart, Euclid, CAT Payhauler, and other similar type and Dumps, Single Unit) less than 16 cu yd.

GROUP 6: 7-axle Dump or Flatrack Driver, 8-axle Dump or Flatrack Driver, Redi-Mix Driver 14 cu yd or over Eject-alls,

GROUP 7: Off-highway Equipment Driver including but not limited to: 2 or 4 wheel Power Unit (CAT DW Series, Euclid, International, and Similar type equipment), Transporting material when Top Loaded or by external means, including Water Tanks (Water Pulls, Fuel Tanks), Rock Drivers 16 cu yd up to 25 cu yd.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* a conformance (additional classification and rate)
ruling

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION CA010037 06/29/01 CA37

General Decision Number CA010037

Superseded General Decision No. CA000037

State: **California**

Construction Type:

- BUILDING**
- DREDGING
- HEAVY
- HIGHWAY

County(ies):

SAN BERNARDINO

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); **HEAVY CONSTRUCTION PROJECTS** (does not include water well drilling); **HIGHWAY CONSTRUCTION PROJECTS**

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	03/23/2001
3	04/27/2001
4	06/01/2001
5	06/29/2001

COUNTY(ies):

SAN BERNARDINO

ASBE0005B 01/01/2000

	Rates	Fringes
INSULATOR/ASBESTOS WORKER Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems	30.46	7.65

ASBE0005Z 10/19/1998

	Rates	Fringes
ASBESTOS REMOVAL/ HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulating materials from mechanical systems, whether they contain asbestos or not	19.70	4.87

BOIL0092F 10/01/2000

	Rates	Fringes
BOILERMAKER	30.06	9.81
TUBE WELDER	31.56	9.81

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRCA0004U 05/01/2001		
	Rates	Fringes
BRICKLAYER; MARBLE SETTER	27.02	7.20
MARBLE FINISHER	15.50	1.52

BRCA0018G 01/01/2001		
	Rates	Fringes
TILE SETTERS	22.00	3.23
TILE FINISHERS	14.00	3.23

BRCA0018K 03/01/2000		
	Rates	Fringes
TERRAZZO WORKER	25.78	5.05
TERRAZZO FINISHER	19.83	5.05

CARP0002B 07/01/2000		
	Rates	Fringes
DIVERS:		
Diver, wet	470.08 per day	6.38
Diver, stand-by	235.04 per day	6.38
Diver tender	227.04 per day	6.38

CARP0002Q 07/01/1999		
	Rates	Fringes
DRYWALL INSTALLERS:		
Work on wood-framed apartment buildings under 4 stories	19.00	6.33
All other work	25.75	6.33
DRYWALL STOCKER/SCRAPPER	10.00	5.32

CARP0003E 07/01/1998		
	Rates	Fringes
CARPENTERS:		

Work on wood frame, tilt up or concrete block construction including but not limited to: shopping centers, stores, office buildings, fast food establishments, also including curb, gutter and sidewalks where the total cost of the project does not exceed seven and one-half million (\$7,500,000.00) dollars.

CARPENTERS:
 Carpenter, cabinet installer,
 insulation installer, floor
 worker and acoustical

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

installer	22.75	6.28
Shingler	22.88	6.28
Roof loader of shingles	15.42	6.28
Saw filer	22.83	6.28
Table power saw operator	22.85	6.28
Pneumatic nailer or power stapler	23.00	6.28
Fence builder	20.30	6.28
Millwright	23.25	6.28
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	22.88	6.28
Head rockslinger	22.98	6.28
Rock barge or scow	22.78	6.28
Scaffold builder	17.00	6.28

All other work:

CARPENTERS:

Carpenter, cabinet installer, insulation installer, floor worker and acoustical installer	24.75	6.28
Shingler	24.88	6.28
Roof loader of shingles	17.42	6.28
Saw filer	24.83	6.28
Table power saw operator	24.85	6.28
Pneumatic nailer or power stapler	25.00	6.28
Fence builder	22.30	6.28
Millwright	25.25	6.28
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	24.88	6.28
Head rockslinger	24.98	6.28
Rock barge or scow	24.78	6.28
Scaffold builder	19.00	6.28

FOOTNOTE:

Work of forming in the construction of open cut sewers or storm drains, on operations in which horizontal lagging is used in conjunction with steel H-Beams driven or placed in pre-drilled holes, for that portion of a lagged trench against which concrete is poured, namely, as a substitute for back forms (which work is performed by piledrivers): \$0.13 per hour additional.

 CARP0003H 07/01/1999

	Rates	Fringes
MODULAR FURNITURE INSTALLER	13.08	3.98
LOW WALL MODULAR TECHNICIAN	17.80	3.98
FULL WALL TECHNICIAN	21.88	3.98

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ELEC0011C 12/01/2000

	Rates	Fringes
COMMUNICATIONS AND SYSTEMS WORK:		
Installer	21.08	3% + 4.25
Technician	22.93	3% + 4.25

SCOPE OF WORK:

Installation, testing, service and maintenance of systems utilizing the transmission and/or transference of voice, sound, vision and digital for commercial, educational, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, fire alarm (see last paragraph below) and low voltage master clock systems in commercial buildings.

Communication Systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding all other data systems or multiple systems which include control function or power supply; excluding installation of raceway systems, conduit systems, line voltage work, and energy management systems.

Does not cover work performed at China Lake Naval Ordnance Test Station.

Fire alarm work shall be performed at the current inside wireman total cost package.

 ELEC0477B 11/27/2000

	Rates	Fringes
ELECTRICIANS:		
Electrician	26.55	3% + 10.30
Cable splicer	27.05	3% + 10.30
Electrician, tunnel work	29.21	3% + 10.30

FOOTNOTE:

ZONE PAY:

Zone (A) 80 road miles from Post Office, 455 Orange Show Lane, San Bernardino, will be a free zone for all contractors.

Zone (B) Any work performed outside Zone (A)'s 80 road miles, shall add \$8.00 per hour to the current wage scale.

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ELEC1245A 06/01/2001

	Rates	Fringes
LINE CONSTRUCTION AND OUTSIDE UTILITY TRANSMISSION WORK:		
Line worker; Cable splicer	32.20	4.5% + 7.35
Powder worker	30.59	4.5% + 7.46
Ground person	20.93	4.5% + 7.58
Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), and overhead and underground distribution line equipment)	27.37	4.5% + 7.07
Line worker, welding	33.81	4.5% + 7.53

SCOPE OF WORK:

All outside work on electrical transmission lines, switchyards and substations, and outside work in electrical utility distribution systems owned, maintained and operated by electrical utility companies, municipalities, or governmental agencies.

ELEV0018A 09/15/2000

	Rates	Fringes
ELEVATOR MECHANIC	32.805	7.195

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0012C 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	26.25	10.95
GROUP 2	27.03	10.95
GROUP 3	27.32	10.95
GROUP 4	28.21	10.95
GROUP 5	28.43	10.95
GROUP 6	29.53	10.95
GROUP 7	28.54	10.95
GROUP 8	29.64	10.95
GROUP 9	28.66	10.95
GROUP 10	29.76	10.95
GROUP 11	28.83	10.95
GROUP 12	28.93	10.95
GROUP 13	28.96	10.95
GROUP 14	29.04	10.95
GROUP 15	29.16	10.95
GROUP 16	29.33	10.95
GROUP 17	29.43	10.95
GROUP 18	29.54	10.95
GROUP 19	29.66	10.95
GROUP 20	29.83	10.95

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GROUP 21	30.93	10.95
GROUP 22	30.04	10.95
GROUP 23	30.16	10.95
GROUP 24	30.83	10.95

CRANES, PILEDIVING & HOISTING EQUIPMENT:

GROUP 1	27.00	10.95
GROUP 2	28.78	10.95
GROUP 3	28.07	10.95
GROUP 4	28.21	10.95
GROUP 5	28.43	10.95
GROUP 6	28.54	10.95
GROUP 7	28.66	10.95
GROUP 8	28.83	10.95
GROUP 9	29.00	10.95
GROUP 10	30.00	10.95
GROUP 11	31.00	10.95
GROUP 12	32.00	10.95
GROUP 13	33.00	10.95

TUNNEL WORK:

GROUP 1	27.50	10.95
GROUP 2	28.28	10.95
GROUP 3	28.57	10.95
GROUP 4	28.71	10.95
GROUP 5	28.93	10.95
GROUP 6	29.04	10.95
GROUP 7	29.16	10.95

FOOTNOTES:

Workers required to suit up and work in a hazardous material environment: \$1.00 per hour additional.

Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Barge, brake, compressor operator, Ditch Witch, with seat or similar type equipment, elevator operator - inside, engineer oiler, generator operator, generator, pump or compressor plant operator, pump operator, signal, switch

GROUP 2: Asphalt-rubber plant operator (nurse tank operator), concrete mixer operator - skip type, conveyor operator, fire person, hydrostatic pump operator, oiler crusher (asphalt or concrete plant), skiploader (wheel type up to 3/4 yd. without attachment), tar pot fire person, temporary heating plant operator, trenching machine oiler

GROUP 3: Asphalt-rubber blend operator, equipment greaser (rack), Ford Ferguson (with dragtype attachments), helicopter radio (ground), stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fire person, backhoe operator (mini-max or similar type), boring machine operator, box or mixer (asphalt or concrete), chip spreading machine operator, concrete cleaning decontamination machine operator, concrete pump operator (small portable), drilling machine operator, small auger types (Texoma

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super economic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum), equipment greaser (grease truck), guard rail post driver operator, highline cableway signal, hydra-hammer-aero stomper, power concrete curing machine operator, power concrete saw operator, power-driven jumbo form setter operator, power sweeper operator, roller operator (compacting), screed operator (asphalt or concrete), trenching machine operator (up to 6 ft.)

GROUP 5: Equipment greaser (grease truck/multi-shift)

GROUP 6: Asphalt plant engineer, batch plant operator, bit sharpener, concrete joint machine operator (canal and similar type), concrete planer operator, deck engine operator, derrick (oilfield type), drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum), drilling machine operator (including water wells incidental to building, heavy or highway construction), hydrographic seeder machine operator (straw, pump or seed), Jackson track maintainer, or similar type, Kalamazoo switch tamper, or similar type, machine tool operator, Maginnis internal full slab vibrator, mechanical berm, curb or gutter (concrete or asphalt), mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar), pavement breaker operator (truck mounted), road oil mixing machine operator, roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck), self-propelled tar pipelining machine operator, skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.), slip form pump operator (power driven hydraulic lifting device for concrete forms), tractor operator - bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types), tugger hoist operator (1 drum), ultra high pressure waterjet cutting tool system operator, vacuum blasting machine operator

GROUP 7: Asphalt or concrete spreading operator (tamping or finishing), asphalt paving machine operator (Barber Greene or similar type), asphalt-rubber distribution operator, backhoe operator (up to and including 3/4 yd.), small Ford, Case or similar, cast-in-place pipe laying machine operator, combination mixer and compressor operator (gunite work), compactor operator (self-propelled), concrete mixer operator (paving), crushing plant operator, drill doctor, drilling machine operator, bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum), elevating grader operator, grade checker, gradall operator, grouting machine operator, heavy-duty repair person, heavy equipment robotics operator, Kalamazoo balliste regulator or similar type, Kolman belt loader and similar type, Le Tourneau blob compactor or similar type, loader operator (Athey, Euclid, Sierra and similar types), pneumatic concrete placing machine operator (Hackley-Presswell or similar type), pumpcrete gun operator, rotary drill operator (excluding caisson type), rubber-tired earth-moving equipment operator (single engine, caterpillar, Euclid, Athey

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Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck), rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck), rubber-tired scraper operator (self-loading paddle wheel type - John Deere, 1040 and similar single unit), self-propelled curb and gutter machine operator, skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.), soil remediation plant operator, surface heaters and planer operator, tractor compressor drill combination operator, tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar - bulldozer, tamper, scraper and push tractor single engine), tractor operator (boom attachments), traveling pipe wrapping, cleaning and bending machine operator, trenching machine operator (over 6 ft. depth capacity, manufacturer's rating), ultra high pressure waterjet cutting tool system mechanic

GROUP 8: Heavy-duty repair person (multi-shift)

GROUP 9: Drilling machine operator, bucket or auger types (Calweld 200 B bucket or similar types - Watson 3000 or 5000 auger or similar types - Texoma 900 auger or similar types - drilling depth of 105' maximum), dual drum mixer, dynamic compactor LDC350 (or similar types), heavy-duty repair-welder combination, monorail locomotive operator (diesel, gas or electric), motor patrol - blade operator (single engine), multiple engine tractor operator (Euclid and similar type - except Quad 9 cat.), rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck), rubber-tired earth-moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), tower crane repair person, tractor loader operator (crawler and wheel type over 6-1/2 yds.), Woods mixer operator (and similar Pugmill equipment)

GROUP 10: Heavy-duty repair-welder combination (multi-shift)

GROUP 11: Auto grader operator, automatic slip form operator, drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum), hoe ram or similar with compressor, mass excavator operator, mechanical finishing machine operator, mobile form traveler operator, motor patrol operator (multi-engine), pipe mobile machine operator, rubber-tired earth-moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck), rubber-tired self-loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 12: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 13: Canal liner operator, canal trimmer operator, remote-control earth-moving equipment operator (operating a second piece

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of equipment: \$1.00 per hour additional), wheel excavator operator

GROUP 14: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck), rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine - up to and including 25 yds. struck)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck), rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck), tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 17: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 18: Rotex concrete belt operator (or similar types), rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck), rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 19: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck), rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

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GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck), rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck), rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 24: Concrete pump operator - truck mounted, rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist operator; Polar gantry crane operator; Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds. mrc)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and

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including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy-duty repair/welder combination

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GROUP 7: Tunnel mole boring machine operator

ENGI0012D 08/01/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
DREDGING:		
Lever person	31.85	10.35
Dozer operator	28.38	10.35
Welder; Deckmate	28.27	10.35
Winch operator (stern winch on dredge)	27.72	10.35
Fire person - oiler; Leveehand; Deckhand; Barge person	27.18	10.35
Barge mate	27.79	10.35

IRON0001R 07/01/2000

	Rates	Fringes
IRONWORKERS:		
Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

FOOTNOTE:

Work at China Lake Naval Test Station, Edwards Air Force Base, Fort Irwin Military Station, Fort Irwin Training Center - Goldstone, 29 Palms - Marine Corps, U.S. Marine Base - Barstow: \$3.00 per hour additional.

Work at Yermo Marine Corps Logistics Center: \$2.00 per hour additional.

LABO0001B 09/01/2000

	Rates	Fringes
BRICK TENDER	19.67	9.10
FORK LIFT OPERATOR	19.82	9.10

LABO0002H 07/01/2000

	Rates	Fringes
LABORERS:		
GROUP 1	18.82	9.65
GROUP 2	19.27	9.65
GROUP 3	19.62	9.65
GROUP 4	20.92	9.65
GROUP 5	21.17	9.65
TUNNEL LABORERS:		
GROUP 1	21.73	9.65
GROUP 2	21.95	9.65
GROUP 3	22.21	9.65
GROUP 4	22.65	9.65
GUNITE LABORERS:		
GROUP 1	21.69	11.88

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GROUP 2	20.74	11.88
GROUP 3	17.20	11.88

HOUSEMOVERS (ONLY WHERE HOUSEMOVING IS INCIDENTAL TO A CONSTRUCTION CONTRACT):

Housemover	15.50	8.38
Yard maintenance person	15.25	8.38

FOOTNOTE:

GUNITE PREMIUM PAY:

Workers working from a Bosn'n's Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates.

Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis.

Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75'-0" above base level and which work must be performed in whole or in part more than 75'-0" above base level, that work performed above the 75'-0" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; fence builder; Fire watcher, limber, brush loader, piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; post hole digger (manual); [BRailroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Slurry seal crew (mixer operator, applicator operator, squeegee person, shuttle person, top person), filling of cracks by any method on any surface; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asbestos abatement; Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt;

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Laborer, installation of all asphalt overlay fabric materials used for reinforcing asphalt; packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer (lead); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellower

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter; Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled Power post hole digger

GROUP 4: Any worker exposed to raw sewage; Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt-rubber distributor boot person; Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast; Welding in connection with laborers' work

GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Directional boring driller; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power; Toxic waste removal;

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TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Bull gang mucker, track person; Changehouse person; Concrete crew, including rodder and spreader; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person

GROUP 2: Chucktender, cabledtender; Loading and unloading agitator cars; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.); Vibrator person, jack hammer, pneumatic tools (except driller)

GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner, tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher

GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Nozzle person and rod person

GROUP 2: Gun person

GROUP 3: Rebound person

LABO0783D 08/02/2000

	Rates	Fringes
PLASTERER TENDERS:		
Fort Irwin, George Air Force Base, Marine Corps Air Station 29 Palms, Marine Corps Logistics Supply Base:		
Plasterer tender	24.08	9.62
Plaster clean-up laborer	21.53	9.62
Remainder of San Bernardino County:		
Plasterer tender	21.08	9.62
Plaster clean-up laborer	18.53	9.62

FOOTNOTE:

Machine plaster tender: \$1.00 per hour additional.

LABO0882A 01/01/2001

	Rates	Fringes
ASBESTOS REMOVAL LABORER	20.12	5.25

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SCOPE OF WORK: includes site mobilization, initial site clean-up, site preparation, removal of asbestos-containing material and toxic waste (including lead abatement and any other toxic materials), encapsulation, enclosure and disposal of asbestos-containing materials and toxic waste (including lead abatement and any other toxic materials) by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers, and assembly of decontamination stations.

 LABO1184A 08/01/2000

	Rates	Fringes
LABORERS - STRIPING:		
GROUP 1	19.60	7.76
GROUP 2	20.15	7.76
GROUP 3	21.97	7.76
GROUP 4	23.22	7.76

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

 PAIN0036A 08/01/2000

	Rates	Fringes
PAINTER (includes lead abatement):		
Work on service stations and and car washes; Small new commercial work (defined		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

as construction up to and including 3 stories in height, such as small shopping centers, small stores, small office buildings and small food establishments); Small new industrial work (defined as light metal buildings, small warehouses, small storage facilities and tilt-up buildings); Repaint work (defined as repaint of any structure with the exception of work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities); Tenant improvement work (defined as tenant improvement work not included in conjunction with the construction of the building, and all repainting of tenant improvement projects

20.75 4.53

All other work 24.02 4.53

PAIN0036H 10/01/1999

Rates Fringes

DRYWALL FINISHERS:

Work on wood frame structures 18.00 3.71
 All other work 24.33 6.88

PAIN0636B 06/01/1999

Rates Fringes

GLAZIER 26.10 7.23

FOOTNOTES:

Work in a condor, from the third (3rd) floor and up: \$1.25 per hour additional.

Work on the outside of the building from a swing stage or any suspended contrivance, from the ground up: \$1.25 per hour additional.

PAIN1247B 01/01/2001

Rates Fringes

SOFT FLOOR LAYER 25.45 6.22

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLAS0200D	08/06/1997		
		Rates	Fringes
PLASTERER		24.13	4.04

PLAS0500B	08/01/2000		
		Rates	Fringes
CEMENT MASONS:			
Work on projects where the total permit value of the general and all subcontracts is \$12 million or less:			
Cement Mason; curb and gutter machine; Clary and similar type of screed operator (cement only); grinding machine (all types); Jackson vibratory, Texas screed and similar type screed operator; scoring machine operator			
		19.85	8.90
Cement mason (magnesite, magnesite - terrazzo and mastic composition, epoxy, urethanes and exotic coatings, Dex-O-Tex)			
		19.97	8.90
Cement mason, floating and troweling machine operator			
		20.10	8.90
All other work:			
Cement mason; curb and gutter machine operator; Clary and similar type of screed operator (cement only); grinding machine (all types); Jackson vibratory, Texas screed and similar type screed operator; scoring machine operator			
		21.81	10.90
Cement mason (magnesite, magnesite - terrazzo and mastic composition, epoxy, urethanes and exotic coatings, Dex-O-Tex)			
		21.93	10.90
Cement Mason - floating and troweling machine operator			
		22.06	10.90

FOOTNOTE:
 Work on a swinging stage, bosun chair, or suspended scaffold, whether swinging or rigid, above or below ground: \$0.25 per hour additional.

PLUM0016B	07/01/2000		
		Rates	Fringes
PLUMBER; STEAMFITTER:			
Work on strip malls, light			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

commercial, tenant improvement and remodel work	22.95	8.90
Work on new additions and remodeling of bars, restaurants, stores and commercial buildings, not to exceed 5,000 sq. ft. of floor space	24.93	11.32
All other work:		
Fort Irwin Army Base, Marine Corps Logistic Base at Nebo, Marine Corps Logistic Base at Yermo and Twenty-Nine Palms Marine Base	29.28	11.87
George Air Force Base	28.03	11.87
Remainder of County	25.78	11.87
SEWER AND STORM DRAIN WORK	17.46	10.76

PLUM0345A 07/01/2000		
	Rates	Fringes
LANDSCAPE & IRRIGATION FITTER	20.23	11.10

ROOF0146A 09/01/1994		
	Rates	Fringes
ROOFERS	18.78	8.25

SFCA0669I 04/01/1999		
	Rates	Fringes
DOES NOT INCLUDE THE NORTHERN PART OF THE CITY OF CHINO, OR THE CITIES OF MONTCLAIR OR ONTARIO:		
SPRINKLER FITTER (FIRE)	23.00	6.40

SFCA0709D 09/01/2000		
	Rates	Fringes
THE NORTHERN PART OF THE CITY OF CHINO, AND THE CITIES OF MONTCLAIR AND ONTARIO:		
SPRINKLER FITTER (FIRE)	30.83	10.40

SHEE0102B 02/01/2001		
	Rates	Fringes
COMMERCIAL SHEET METAL WORKER:		
Work on all commercial HVAC for creature comfort and computers clean rooms, architectural metals, metal roofing and lagging, over insulation	28.60	10.39

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEE0102C 02/01/2001

	Rates	Fringes
INDUSTRIAL SPECIALTIES SHEET METAL WORKER:		
Work on all air pollution control systems, noise abatement panels, blow pipe, air-veyor systems, dust collecting, baghouses, heating, air conditioning, and ventilating (other than creature comfort) and all other industrial work, including metal insulated ceilings	24.91	13.62

TEAM0011I 07/01/1999

EDWARDS AFB, FORT IRWIN, GEORGE AFB, MARINE CORPS LOGISTIC BASE
AT NEBO & YERMO, TWENTY-NINE PALMS BASE

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1	22.19	11.89
GROUP 2	22.34	11.89
GROUP 3	22.47	11.89
GROUP 4	22.66	11.89
GROUP 5	22.60	11.89
GROUP 6	22.72	11.89
GROUP 7	22.97	11.89
GROUP 8	23.22	11.89
GROUP 9	23.42	11.89
GROUP 10	23.72	11.89
GROUP 11	24.22	11.89

REMAINDER OF COUNTY:

	Rates	Fringes
GROUP 1	20.19	11.89
GROUP 2	20.34	11.89
GROUP 3	20.47	11.89
GROUP 4	20.66	11.89
GROUP 5	20.60	11.89
GROUP 6	20.72	11.89
GROUP 7	20.97	11.89
GROUP 8	21.22	11.89
GROUP 9	21.42	11.89
GROUP 10	21.72	11.89
GROUP 11	22.22	11.89

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver

GROUP 2: Driver of vehicle or combination of vehicles - 2 axles; Traffic control pilot car excluding moving heavy equipment permit load; Truck-mounted broom

GROUP 3: Driver of vehicle or combination of vehicles - 3 axles; Boot person; Cement mason distribution truck; Fuel truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level

GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person (\$0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver

GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vehicles - 4 or more axle; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level

GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver

GROUP 8: Dump truck, 25 yds. or more water level; Truck repair person; Water pull - single engine; Welder

GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over

GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment

GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - \$1.25 additional when operating winch or similar special attachments

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION CA010029 06/29/01 CA29

General Decision Number CA010029

Superseded General Decision No. CA000029

State: **California**

Construction Type:

- BUILDING**
- DREDGING
- HEAVY
- HIGHWAY

County(ies):

ALAMEDA	MARIPOSA	SAN MATEO
CALAVERAS	MERCED	SANTA CLARA
CONTRA COSTA	MONTEREY	SANTA CRUZ
FRESNO	SAN BENITO	STANISLAUS
KINGS	SAN FRANCISCO	TUOLUMNE
MADERA	SAN JOAQUIN	

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); **HEAVY CONSTRUCTION PROJECTS** (does not include water well drilling); **HIGHWAY CONSTRUCTION PROJECTS**

Modification Number	Publication Date
0	03/02/2001
1	03/16/2001
2	03/23/2001
3	04/13/2001
4	04/27/2001
5	06/01/2001
6	06/29/2001

COUNTY(ies):

ALAMEDA	MARIPOSA	SAN MATEO
CALAVERAS	MERCED	SANTA CLARA
CONTRA COSTA	MONTEREY	SANTA CRUZ
FRESNO	SAN BENITO	STANISLAUS
KINGS	SAN FRANCISCO	TUOLUMNE
MADERA	SAN JOAQUIN	

ASBE0016A 08/01/2000

	Rates	Fringes
INSULATOR/ASBESTOS WORKER		
Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems	37.38	7.66

ASBE0016E 05/01/1999

	Rates	Fringes
ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ASBESTOS REMOVAL WORKER/
HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting,
stripping, removal, scrapping,
vacuuming, bagging and disposing
of all insulation materials from
mechanical systems, whether they
contain asbestos or not

22.01 4.28

ASBE0016F 05/01/1999

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN
BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS AND TUOLUMNE
COUNTIES:

ASBESTOS REMOVAL WORKER/
HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting,
stripping, removal, scrapping,
vacuuming, bagging and disposing
of all insulation materials from
mechanical systems, whether they
contain asbestos or not

22.01 4.28

BOIL0092A 10/01/1999

	Rates	Fringes
BOILERMAKER	29.56	9.81
TUBE WELDER	31.06	9.81

BRCA0003B 08/01/1998

	Rates	Fringes
MARBLE FINISHER	21.12	4.97

BRCA0003D 08/01/1998

	Rates	Fringes
MARBLE SETTER	25.89	12.92

BRCA0003G 07/01/2000

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
BRICKLAYER	30.80	9.95

FOOTNOTES:

Underground work such as tunnel work, sewer work, manholes,
catch basins, sewer pipes and telephone conduit: \$5.00 per day
additional.

Additionally, for work in direct contact with raw sewage: \$2.50
per day additional.

Operating a saw or grinder: \$0.50 per hour additional.

Gunite nozzle person: \$1.00 per hour additional.

On one or two person light duty swinging scaffolds, from and

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

including the seventh floor to the sky (floors to be determined by the number on the elevator identity or floor identity): \$10.00 per day additional.

BRCA0003K 07/01/2000		
	Rates	Fringes
ALAMEDA, CONTRA COSTA, SAN BENITO AND SANTA CLARA COUNTIES:		
BRICKLAYER	29.82	8.88
CALAVERAS, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:		
BRICKLAYER	26.65	7.35

FOOTNOTES:

Underground work such as tunnel work, sewer work, manholes, catch basins, sewer pipes and telephone conduit shall be paid \$5.00 per day above the regular wage.

In addition to the daily allowance specified in the preceding sentence, all employees working in direct contact with raw sewage shall receive an additional allowance of \$2.50 per day above the regular wage.

Fifty cents (\$0.50) per hour extra will be allowed for operating a saw or grinder, provided such work is for the major portion of the day.

A gunite nozzle person shall receive \$1.00 per hour above the journeyman wage rate.

On one or two-person light-duty swinging scaffolds, from and including the seventh floor to the sky, \$10.00 per day over and above the regular wage shall be paid. The floors shall be determined by the number on the elevator identity or floor identity.

BRCA00030 07/01/2000		
	Rates	Fringes
MONTEREY AND SANTA CRUZ COUNTIES:		
BRICKLAYER	27.88	9.55

FOOTNOTES:

Underground work such as tunnel work, sewer work, manholes, catch basins, sewer pipes and telephone conduit: \$5.00 per day additional. In addition to the daily allowance specified in the preceding sentence, all workers working in direct contact with raw sewage: \$2.50 per day additional.

Operating a saw or grinder, provided such work is for the major portion of the day: \$0.50 per hour additional.

Gunite nozzle person: \$1.00 per hour additional.

Work on one or two person light duty swinging scaffolds, from and including the seventh floor to the sky (floors to be determined by the number on the elevator identity or floor identity): \$10.00 per day additional.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRCA0003Q 07/01/2000

	Rates	Fringes
FRESNO, KINGS, MADERA, MARIPOSA AND MERCED COUNTIES:		

BRICKLAYER	23.75	8.25
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BRCA0003T 04/01/2001

	Rates	Fringes
ALAMEDA, CALAVERAS, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, STANISLAUS AND TUOLUMNE COUNTIES:		

TILE SETTER	28.63	7.20
TILE FINISHER	15.96	5.97

BRCA0004P 07/01/1999

	Rates	Fringes
TERRAZZO WORKER		
TERRAZZO FINISHER		

FOOTNOTE:

Base machine operator: \$.75 per hour additional.

BRCA9003A 04/01/2001

	Rates	Fringes
FRESNO, KINGS, MADERA, MARIPOSA AND MERCED COUNTIES:		

TILE FINISHER	15.90	4.77
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TILE SETTER	22.19	5.65
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CARP0003A 08/01/2000

	Rates	Fringes
ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:		

DRYWALL INSTALLER/LATHER	28.00	11.645
DRYWALL STOCKER/SCRAPPER	14.50	6.385

MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES:

DRYWALL INSTALLER/LATHER	24.12	11.645
DRYWALL STOCKER/SCRAPPER	12.06	6.385

REMAINDER OF COUNTIES:

DRYWALL INSTALLER/LATHER	23.27	11.645
DRYWALL STOCKER/SCRAPPER	11.64	6.385

NOTE: Effective 8/1/99 new projects public or private, valued at

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

twenty-five million dollars or more shall be paid at the Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara Counties rate.

CARP0012E	09/01/1993		
		Rates	Fringes
CALAVERAS, SAN JOAQUIN AND STANISLAUS COUNTIES:			
TILE FINISHER		12.80	3.12

CARP0034A	07/01/1999		
		Rates	Fringes
DIVERS:			
Diver standby		28.65	13.625
Diver wet pay		39.90	13.625
Tender		28.65	13.625
Saturation diver		46.50	13.625
Manned submersible		46.50	13.625
Manifold operator/life support Technician		30.65	13.625
Remote controlled vehicle-remote operated vehicle pilot		28.65	13.625
Bell winch operator		28.65	13.625
DEPTH PAY (Surface Diving):			
50 to 100 ft	\$1.32/ft		
100 to 150 ft	\$66.00 + \$1.85/ft		
150 to 200 ft	\$158.00 + \$2.65/ft		
200 ft and over	\$291.00 + \$3.00/ft		

CARP0034C	07/01/2000		
		Rates	Fringes
ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA COUNTIES:			
PILEDRIVER		26.65	13.375
*PILEDRIVER - BRIDGE BUILDER		28.00	11.205
CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS, AND TUOLUMNE COUNTIES:			
PILEDRIVER		26.65	13.375
*PILEDRIVER - BRIDGE BUILDER		23.77	11.205
MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES:			
PILEDRIVER		26.65	13.375
*PILEDRIVER - BRIDGE BUILDER		24.62	11.205

*FOOTNOTE: Effective 7/1/99 new projects public or private, vaulted at twenty five million dollars or more shall be paid at the Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara counties rate.

*PILEDRIVER BRIDGE BUILDERS		28.00	11.205
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARP0035A 07/01/2000

ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA
COUNTIES:

	Rates	Fringes
CARPENTER	28.00	11.205
HARDWOOD FLOORLAYER; SHINGLER; POWER SAW OPERATOR; STEEL SCAFFOLD AND STEEL SHORING ERECTOR; SAW FILER	28.15	11.205
BRIDGE BUILDERS	28.00	11.205
MILLWRIGHT	28.00	12.645

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN,
STANISLAUS, AND TUOLUMNE COUNTIES:

CARPENTER	22.77	11.205
HARDWOOD FLOORLAYER; SHINGLER; POWER SAW OPERATOR; STEEL SCAFFOLD AND STEEL SHORING ERECTOR; SAW FILER	22.97	11.205
BRIDGE BUILDERS	23.77	11.205
MILLWRIGHT	23.92	12.645

MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES:

CARPENTER	24.12	11.205
HARDWOOD FLOORLAYER; SHINGLER; POWER SAW OPERATOR; STEEL SCAFFOLD AND STEEL SHORING ERECTOR; SAW FILER	24.27	11.205
BRIDGE BUILDERS	24.62	11.205
MILLWRIGHT	25.27	12.645

FOOTNOTE: Effective 7/1/99 new projects public or private,
valued at twenty-five million dollars or more shall be paid at
the Alameda, Contra Costa, San Francisco, San Mato, and Santa
Clara counties rate.

CARP0035H 07/01/1999

	Rates	Fringes
MODULAR FURNITURE INSTALLER	16.87	7.465

ELEC0006A 12/01/2000

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO,
SAN MATEO, SANTA CLARA, AND SANTA CRUZ COUNTIES:

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

COMMUNICATIONS AND SYSTEMS WORK:

Communications and Systems		
Installer	23.32	3%+4.10
Communications and Systems		
Technician	26.55	3%+4.10

SCOPE OF WORK:

Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE:

Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0006D 06/01/1998		
	Rates	Fringes
SAN FRANCISCO COUNTY:		
LINE CONSTRUCTION:		
Line technician; ground		
person/driver	34.375	3% + 11.665
Cable splicer	38.67	3% + 11.665
Ground person	29.92	3% + 11.665

ELEC0006E 11/01/1998		
	Rates	Fringes
SAN FRANCISCO COUNTY:		
SIGN ELECTRICIAN	20.00	3%

FOOTNOTE:

Paid Holidays: New Year's Day, Washington's Birthday, Memorial Day, 4th of July, Labor Day, Thanksgiving Day, Day after Thanksgiving, and Christmas Day. To be eligible for holiday pay the worker must work the first business day before and after said holiday.

ELEC0006H 06/01/2000		
	Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 SAN FRANCISCO COUNTY:

ELECTRICIAN:

Electrician	39.58	3% + 11.815
Cable splicer	44.53	3% + 11.815

ELEC0006K 12/01/1999

Rates Fringes
 CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN,
 STANISLAUS AND TUOLUMNE COUNTIES:

COMMUNICATIONS AND SYSTEMS WORK:

Communications and Systems Installer	18.72	3%+4.10
Communications and Systems Technician	21.31	3%+4.10

SCOPE OF WORK:

Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE:

Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0100C 06/01/2001

Rates Fringes
 FRESNO, KINGS, AND MADERA COUNTIES:

ELECTRICIAN	25.60	3% + 8.61
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ELEC0234A 05/28/2001

Rates Fringes
 MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES:

ELECTRICIANS	30.81	3% + 11.59
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ELEC0234B 05/27/1996

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straight-time rate of pay.

Work on structures of 60 ft. or over (as described above): to be paid twice the straight-time rate of pay.

Welding: \$5.00 per day additional.

ELEC0332B 06/01/1999

	Rates	Fringes
SANTA CLARA COUNTY:		
LINE CONSTRUCTION:		
Line technician; line equipment person	33.50	3% + 11.06
Cable splicer	37.69	3% + 11.06
Ground person	29.32	3% + 10.11

FOOTNOTE:

Work on wooden poles, "H" frames or similar structures at a height of 75 ft. or more, or work on steel towers on tower structures where the point of attachment of the lowest high voltage insulator to the tower is 100 ft. or more: to be paid double time.

Flood lighting equipment or warning and signal lighting or similar equipment installed on towers over 100 ft. shall be considered premium work as provided above.

In determining height premium work, the top of the concrete footing of the stepped leg of the tower, or the ground level of the poles to be climbed and the lower side of the cross arm from which workers are required to work, shall be the determining factors.

There shall be no height premium work for the erection of steel transmission towers themselves.

ELEC0595A 06/01/2000

	Rates	Fringes
ALAMEDA COUNTY:		
ELECTRICIANS:		
Electrician	33.49	3% + 11.89
Cable splicer	37.48	3% + 11.89

ELEC0595B 12/01/2000

	Rates	Fringes
CALAVERAS AND SAN JOAQUIN COUNTIES:		
ELECTRICIANS:		
Tunnel work:		
Electrician	28.19	5.75%+ 8.59
Cable splicer	31.71	5.75%+ 8.59
All other work:		
Electrician	28.06	5.75%+ 8.59

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Cable splicer	31.57	5.75%+ 8.59

ELEC0617A 06/01/2001		
	Rates	Fringes
SAN MATEO COUNTY:		
ELECTRICIAN	40.30	3% + 10.71

ELEC0684A 07/01/2000		
	Rates	Fringes
MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES:		
Electrician	26.12	7% + 8.85
Cable splicer	28.73	7% + 8.85

ELEC1245A 06/01/2001		
	Rates	Fringes
LINE CONSTRUCTION AND OUTSIDE UTILITY TRANSMISSION WORK:		
Line worker; Cable splicer	32.20	4.5% + 7.35
Powder worker	30.59	4.5% + 7.46
Ground person	20.93	4.5% + 7.58
Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), and overhead and underground distribution line equipment)	27.37	4.5% + 7.07
Line worker, welding	33.81	4.5% + 7.53

SCOPE OF WORK:

All outside work on electrical transmission lines, switchyards and substations, and outside work in electrical utility distribution systems owned, maintained and operated by electrical utility companies, municipalities, or governmental agencies.

ELEV0008A 08/01/2000		
	Rates	Fringes
ELEVATOR MECHANIC	41.845	7.195

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0001A 05/01/1999

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Rates

Fringes

POWER EQUIPMENT OPERATORS
CRANES AND ATTACHMENTS
DREDGING
TUNNEL AND UNDERGROUND

These areas do not apply to piledrivers and steel erectors.

AREA 1: ALAMEDA, CONTRA COSTA, KINGS, MERCED, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ AND STANISLAUS COUNTIES

The remaining counties are split between Area 1 and Area 2 as noted below:

CALAVERAS COUNTY:

AREA 1: Area within the line beginning at the southernmost point of Calaveras County,
Thence northerly along the southeasterly county line to the intersection with the easterly line of Range 15 East,
Thence northerly to the northeast corner of Township 5N, Range 15E,
Thence westerly to the southeast corner of Township 6N, Range 14E,
Thence northerly along the range line to the intersection with the northerly line of said county,
Thence westerly and southerly along the county line to the point of beginning.

AREA 2: Remainder of Calaveras County.

FRESNO COUNTY:

AREA 1: Area within the line beginning at the southeast corner of Township 13S, Range 28E,
Thence northerly to the northeast corner of Township 13S, Range 28E,
Thence westerly to the southeast corner of Township 12S, Range 27E,
Thence northerly to the northeast corner of Township 12S, Range 27E,
Thence westerly to the southeast corner of Township 11S, Range 26E,
Thence northerly to the northeast corner of Township 11S, Range 26E,
Thence westerly to the southeast corner of Township 10S, Range 25E,
Thence northerly to the northeast corner of Township 9S, Range 25E,
Thence westerly to the southeast corner of Township 8S, Range 24E,
Thence northerly to the northeast corner of Township 8S, Range 24E,
Thence westerly along the north line of Township 8S to the intersection with the Fresno County line,
Thence southwesterly and northwesterly along said county line

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to the intersection with the southeasterly line of Merced County,
Thence southwesterly along said county line to the intersection with the easterly line of San Benito County,
Thence southerly along said county line to the intersection with the easterly line of Monterey County,
Thence southeasterly along said county line to the intersection with the northwesterly line of Kings County,
Thence northeasterly along the southeasterly line of Fresno County to the point of beginning.

AREA 2: Remainder of Fresno County.

MADERA COUNTY:

AREA 1: Area within the line beginning at the point of intersection of Fresno County, Madera County, and Merced County,
Thence southeasterly and northeasterly along the southerly line of Madera County to the intersection with the northerly line of Township 8S,
Thence westerly to the southeast corner of Township 7S, Range 23E,
Thence northerly to the northeast corner of Township 6S, Range 23E,
Thence westerly along the north line of Township 6S to the intersection of the northwesterly line of Madera County,
Thence southwesterly along said county line to the point of beginning.

AREA 2: Remainder of Madera County.

MARIPOSA COUNTY:

AREA 1: Area within the line beginning at the point of intersection of Stanislaus County with Mariposa County,
Thence southeasterly along the westerly line of Mariposa County to the intersection of Madera County,
Thence northeasterly along said county line to the intersection of the southerly line of Township 5S,
Thence westerly to the southeast corner of Township 5S, Range 20E,
Thence northerly to the northeast corner of Township 5S, Range 20E,
Thence westerly to the southeast corner of Township 4S, Range 19E,
Thence northerly along the range line to the intersection with the northerly line of Mariposa County,
Thence westerly along said county line to the point of beginning.

AREA 2: Remainder of Mariposa County.

MONTEREY COUNTY:

AREA 1: Area within a line beginning at the intersection of the southerly line of Township 19S with the Pacific Ocean,
Thence easterly along the southerly line of Township 19S to

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the northwest corner of Township 20S, Range 6E,
Thence southerly to the southwest corner of Township 20S,
range 6E,
Thence easterly to the northwest corner of Township 21S,
Range 7E,
Thence southerly to the southwest corner of Township 21S,
Range 7E,
Thence easterly to the northwest corner of Township 22S,
Range 9E,
Thence southerly to the southwest corner of Township 22S,
Range 9E,
Thence easterly to the northwest corner of Township 23S,
Range 10E,
Thence southerly to the southwest corner of Township 24S,
Range 10E,
Thence easterly along the southerly line of Township 24S to
the southeasterly corner of Monterey County,
Thence northwesterly along said county line to the point of
intersection with the southerly line of Santa Cruz County,
Thence westerly along the northerly line of Monterey County
to the Pacific Ocean,
Thence southerly along the Pacific Ocean to the point of
beginning.

AREA 2: Remainder of Monterey County.

TUOLUMNE COUNTY:

AREA 1: Area within the line beginning at the point of
intersection of the easterly line of Township 2S, Range
19E, with the southerly line of Tuolumne County,
Thence northerly to the northeast corner of Township 1S,
Range 19E,
Thence westerly to the southeast corner of Township 1N, Range
18E,
Thence northerly to the northeast corner of Township 3N,
Range 18E,
Thence westerly to the southeast corner of Township 4N, Range
17E,
Thence northerly to the northeast corner of Township 4N,
Range 17E,
Thence northerly to the northeast corner of Township 4N,
Range 17E,
Thence westerly to the southeast corner of Township 5N, Range
15E,
Thence northerly to the intersection of the county line with
the easterly line of Township 5N, Range 15E,
Thence southwesterly along the county line to the
intersection of the northeasterly line of Stanislaus
County,
Thence southeasterly along said county line to the
southernmost corner of Tuolumne County,
Thence easterly along the county line to the point of
beginning.

AREA 2: Remainder of Tuolumne County.

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* ENGI0003B 07/01/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
DREDGING: CLAMSHELL & DIPPER DREDGING;		
HYDRAULIC SUCTION DREDGING:		
AREA 1:		
Lever person/operator	34.39	12.29
Dredge dozer; Heavy duty repair person/welder	29.43	12.29
Booster pump operator; Deck engineer; Deck mate; Dredge tender; Winch operator	28.31	12.29
Barge person; Deckhand; Fire person; Leveehand; Oiler	25.01	12.29
AREA 2:		
Lever person/operator	36.39	12.29
Dredge dozer; Heavy duty repair person/welder	31.43	12.29
Booster pump operator; Deck engineer; Deck mate; Dredge tender; Winch operator	30.31	12.29
Barge person; Deckhand; Fire- person; Levee hand; Oiler	27.01	12.29

ENGI0003C 06/16/2000

Rates Fringes

ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA
COUNTIES:

POWER EQUIPMENT OPERATORS:		
GROUP 1	33.12	12.10
GROUP 2	35.12	12.10
GROUP 3	30.11	12.10
GROUP 4	28.73	12.10
GROUP 5	27.46	12.10
GROUP 6	26.14	12.10
GROUP 7	27.00	12.10
GROUP 8	23.86	12.10
GROUP 8-A	21.65	12.10

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

GROUP 1	34.00	12.10
Truck crane oiler	27.03	12.10
Oiler	24.74	12.10
GROUP 2	32.24	12.10
Truck crane oiler	28.77	12.10
Oiler	24.53	12.10
GROUP 3	30.50	12.10
Truck crane oiler	26.53	12.10
Hydraulic	26.14	12.10
Oiler	24.25	12.10

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

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GROUP 1	34.34	12.10
Truck crane oiler	27.36	12.10
Oiler	25.08	12.10
GROUP 2	32.52	12.10
Truck crane oiler	27.11	12.10
Oiler	24.81	12.10
GROUP 3	29.84	12.10
Truck crane oiler	26.82	12.10
Oiler	24.59	12.10
GROUP 4	29.07	12.10
GROUP 5	26.43	12.10
GROUP 6	24.20	12.10

POWER EQUIPMENT OPERATORS - STEEL ERECTORS:

GROUP 1	34.97	12.10
Truck crane oiler	27.65	12.10
Oiler	25.42	12.10
GROUP 2	33.20	12.10
Truck crane oiler	27.43	12.10
Oiler	25.15	12.10
GROUP 3	31.72	12.10
Truck crane oiler	27.16	12.10
Hydraulic	26.77	12.10
Oiler	24.93	12.10
GROUP 4	29.70	12.10
GROUP 5	28.40	12.10

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as plush pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572, or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/boxperson; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield

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operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt; Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer, drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Soils & materials tester; Tractor

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker (with or without

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compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit charpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete dquipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

POWER EQUIPMENT OPERATOR CLASSIFICATIONS
ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and Dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and Dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and Dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating, over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVER CLASSIFICATIONS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

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GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTOR CLASSIFICATIONS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane, over 45 tons up to and including 100 tons; Derrick, 100 tons & under; Self-propelled boom-type lifting device over 45 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

 ENGI0003G 06/16/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
TUNNEL AND UNDERGROUND WORK:		
AREA 1:		
UNDERGROUND:		
GROUP 1-A	31.29	13.00
GROUP 1	28.82	13.00
GROUP 2	27.56	13.00
GROUP 3	27.23	13.00
GROUP 4	25.09	13.00
GROUP 5	23.95	13.00
SHAFTS, STOPES AND RAISES:		
GROUP 1-A	31.39	13.00
GROUP 1	28.92	13.00
GROUP 2	27.66	13.00
GROUP 3	26.33	13.00
GROUP 4	25.19	13.00
GROUP 5	24.05	13.00
AREA 2:		
UNDERGROUND:		
GROUP 1-A	33.29	13.00
GROUP 1	30.82	13.00

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GROUP 2	29.56	13.00
GROUP 3	28.23	13.00
GROUP 4	27.09	13.00
GROUP 5	25.95	13.00

SHAFTS, STOPES AND RAISES:

GROUP 1-A	33.39	13.00
GROUP 1	30.92	13.00
GROUP 2	29.66	13.00
GROUP 3	28.33	13.00
GROUP 4	27.19	13.00
GROUP 5	26.05	13.00

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1-A: Tunnel bore machine operator, 20' diameter or more

GROUP 1: Heading shield operator; Heavy-duty repairperson/welder; Mucking machine (rubber tired, rail or track type); Raised bore operator (tunnels); Tunnel mole bore operator

GROUP 2: Combination slusher and motor operator; Concrete pump or pumpcrete gun; Power jumbo operator

GROUP 3: Drill doctor; Mine or shaft hoist

GROUP 4: Combination slurry mixer cleaner; Grouting machine operator; Motor person

GROUP 5: Bit sharpener; Brake person; Combination mixer and compressor (gunite); Compressor operator; Oiler (assistant to engineer); Pump operator; Slusher operator

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Rates Fringes
 KINGS, MERCED, SAN BENITO, SAN JOAQUIN, SANTA CRUZ AND STANISLAUS
 COUNTIES:

BUILDING CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

GROUP 1	30.40	12.79
GROUP 2	28.95	12.79
GROUP 3	27.55	12.79
GROUP 4	26.22	12.79
GROUP 5	25.01	12.79
GROUP 6	23.74	12.79
GROUP 7	22.65	12.79
GROUP 8	21.57	12.79
GROUP 8-A	19.45	12.79

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POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

GROUP 1	31.25	12.79
Truck crane oiler	24.59	12.79
Oiler	22.42	12.79
GROUP 2	29.56	12.79
Truck crane oiler	24.35	12.79
Oiler	22.20	12.79
GROUP 3	27.92	12.79
Truck crane oiler	24.11	12.79
Hydraulic	23.74	12.79
Oiler	21.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	31.56	12.79
Truck crane oiler	24.91	12.79
Oiler	22.74	12.79
GROUP 2	29.85	12.79
Truck crane oiler	24.68	12.79
Oiler	22.49	12.79
GROUP 3	28.24	12.79
Truck crane oiler	24.41	12.79
Oiler	22.26	12.79
GROUP 4	26.54	12.79
GROUP 5	24.04	12.79
GROUP 6	21.90	12.79

POWER EQUIPMENT OPERATORS - STEEL ERECTION:

GROUP 1	32.19	12.79
Truck crane oiler	25.20	12.79
Oiler	23.06	12.79
GROUP 2	30.48	12.79
Truck crane oiler	24.98	12.79
Oiler	22.81	12.79
GROUP 3	29.09	12.79
Truck crane oiler	24.73	12.79
Hydraulic	24.35	12.79
Oiler	22.58	12.79
GROUP 4	27.16	12.79
GROUP 5	25.91	12.79

HEAVY AND HIGHWAY CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

GROUP 1	31.82	12.79
GROUP 2	30.29	12.79
GROUP 3	28.81	12.79
GROUP 4	27.43	12.79
GROUP 5	26.16	12.79
GROUP 6	24.84	12.79
GROUP 7	23.70	12.79
GROUP 8	22.56	12.79
GROUP 8-A	20.35	12.79

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

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GROUP 1	32.70	12.79
Truck crane oiler	25.73	12.79
Oiler	23.44	12.79
GROUP 2	30.94	12.79
Truck crane oiler	25.47	12.79
Oiler	23.23	12.79
GROUP 3	29.20	12.79
Truck crane oiler	25.23	12.79
Hydraulic	24.84	12.79
Oiler	22.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	33.04	12.79
Truck crane oiler	26.06	12.79
Oiler	23.78	12.79
GROUP 2	31.22	12.79
Truck crane oiler	25.81	12.79
Oiler	23.51	12.79
GROUP 3	29.54	12.79
Truck crane oiler	25.52	12.79
Oiler	23.29	12.79
GROUP 4	27.77	12.79
GROUP 5	25.13	12.79
GROUP 6	22.90	12.79

POWER EQUIPMENT OPERATORS - STEEL ERECTORS:

GROUP 1	33.67	12.79
Truck crane oiler	26.35	12.79
Oiler	24.12	12.79
GROUP 2	31.90	12.79
Truck crane oiler	26.13	12.79
Oiler	23.85	12.79
GROUP 3	30.42	12.79
Truck crane oiler	25.86	12.79
Hydraulic	25.47	12.79
Oiler	23.63	12.79
GROUP 4	28.40	12.79
GROUP 5	27.10	12.79

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd;

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Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-

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propelled pipeline wrapping machine; Soils & materials tester;
Tractor

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination; Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating,

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over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVERS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100 tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

ENGI0004L 07/01/1999

CALAVERAS, FRESNO, MADERA, MARIPOSA, MONTEREY AND TUOLUMNE
COUNTIES: Rates Fringes

BUILDING CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

AREA 1:		
GROUP 1	30.40	12.79
GROUP 2	28.95	12.79
GROUP 3	27.55	12.79

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GROUP 4	26.22	12.79
GROUP 5	25.01	12.79
GROUP 6	23.74	12.79
GROUP 7	22.65	12.79
GROUP 8	21.57	12.79
GROUP 8-A	19.45	12.79

AREA 2:

GROUP 1	32.40	12.79
GROUP 2	30.95	12.79
GROUP 3	29.55	12.79
GROUP 4	28.22	12.79
GROUP 5	27.01	12.79
GROUP 6	25.74	12.79
GROUP 7	24.65	12.79
GROUP 8	23.57	12.79
GROUP 8-A	21.45	12.79

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

AREA 1:

GROUP 1	31.25	12.79
Truck crane oiler	24.59	12.79
Oiler	22.42	12.79
GROUP 2	29.56	12.79
Truck crane oiler	24.35	12.79
Oiler	22.20	12.79
GROUP 3	27.92	12.79
Truck crane oiler	24.11	12.79
Hydraulic	23.74	12.79
Oiler	21.95	12.79

AREA 2:

GROUP 1	33.25	12.79
Truck crane oiler	26.59	12.79
Oiler	24.42	12.79
GROUP 2	31.56	12.79
Truck crane oiler	26.35	12.79
Oiler	24.20	12.79
GROUP 3	29.92	12.79
Truck crane oiler	26.11	12.79
Hydraulic	25.74	12.79
Oiler	23.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	31.56	12.79
Truck crane oiler	24.91	12.79
Oiler	22.74	12.79
GROUP 2	29.85	12.79
Truck crane oiler	24.68	12.79
Oiler	22.49	12.79
GROUP 3	28.24	12.79
Truck crane oiler	24.41	12.79
Oiler	22.26	12.79
GROUP 4	26.54	12.79
GROUP 5	24.04	12.79
GROUP 6	21.90	12.79

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POWER EQUIPMENT OPERATORS - STEEL ERECTION:

GROUP 1	32.19	12.79
Truck crane oiler	25.20	12.79
Oiler	23.06	12.79
GROUP 2	30.48	12.79
Truck crane oiler	24.98	12.79
Oiler	22.81	12.79
GROUP 3	29.09	12.79
Truck crane oiler	24.73	12.79
Hydraulic	24.35	12.79
Oiler	22.58	12.79
GROUP 4	27.16	12.79
GROUP 5	25.91	12.79

HEAVY AND HIGHWAY CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

AREA 1:

GROUP 1	31.82	12.79
GROUP 2	30.29	12.79
GROUP 3	28.81	12.79
GROUP 4	27.43	12.79
GROUP 5	26.16	12.79
GROUP 6	24.84	12.79
GROUP 7	23.70	12.79
GROUP 8	22.56	12.79
GROUP 8-A	20.35	12.79

AREA 2:

GROUP 1	33.82	12.79
GROUP 2	32.29	12.79
GROUP 3	30.81	12.79
GROUP 4	29.43	12.79
GROUP 5	28.16	12.79
GROUP 6	26.84	12.79
GROUP 7	25.70	12.79
GROUP 8	24.56	12.79
GROUP 8-A	22.35	12.79

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

AREA 1:

GROUP 1	32.70	12.79
Truck crane oiler	25.73	12.79
Oiler	23.44	12.79
GROUP 2	30.94	12.79
Truck crane oiler	25.47	12.79
Oiler	23.23	12.79
GROUP 3	29.20	12.79
Truck crane oiler	25.23	12.79
Hydraulic	24.84	12.79
Oiler	22.95	12.79

AREA 2:

GROUP 1	34.70	12.79
Truck crane oiler	27.73	12.79

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Oiler	25.44	12.79
GROUP 2	32.94	12.79
Truck crane oiler	27.47	12.79
Oiler	25.23	12.79
GROUP 3	31.20	12.79
Truck crane oiler	27.23	12.79
Hydraulic	26.84	12.79
Oiler	24.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	33.04	12.79
Truck crane oiler	26.06	12.79
Oiler	23.78	12.79
GROUP 2	31.22	12.79
Truck crane oiler	25.81	12.79
Oiler	23.51	12.79
GROUP 3	29.54	12.79
Truck crane oiler	25.52	12.79
Oiler	23.29	12.79
GROUP 4	27.77	12.79
GROUP 5	25.13	12.79
GROUP 6	22.90	12.79

POWER EQUIPMENT OPERATORS - STEEL ERECTORS:

GROUP 1	33.67	12.79
Truck crane oiler	26.35	12.79
Oiler	24.12	12.79
GROUP 2	31.90	12.79
Truck crane oiler	26.13	12.79
Oiler	23.85	12.79
GROUP 3	30.42	12.79
Truck crane oiler	25.86	12.79
Hydraulic	25.47	12.79
Oiler	23.63	12.79
GROUP 4	28.40	12.79
GROUP 5	27.10	12.79

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as push pull);

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Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Soils & materials tester; Tractor

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GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

POWER EQUIPMENT OPERATOR CLASSIFICATIONS
ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating, over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVERS

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GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100 tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

IRON0001U 07/01/2000

ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, STANISLAUS AND TUOLUMNE COUNTIES:

IRONWORKERS:

	Rates	Fringes
Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

FOOTNOTE:

CITY OF SAN FRANCISCO (defined as the city limits of San Francisco (as described by the San Francisco County Recorder's Office as of July 1, 1998), the Golden Gate Bridge in its

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

entirety, and the west side of the San Francisco Bay Bridge up to and including Treasure Island):

Congestion zone fee: \$8.00 per day.

IRON0001V 07/01/2000

	Rates	Fringes
MONTEREY COUNTY:		
IRONWORKERS:		
Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

FOOTNOTE:

Work at the Army Defense Language Institute, and the Naval Post Graduate School: \$2.00 per hour additional.

LABO0036A 07/01/1999

	Rates	Fringes
SAN FRANCISCO AND SAN MATEO COUNTIES:		
BRICK TENDER	19.84	7.57

FOOTNOTES:

Underground work such as sewers, manholes, catch basins, sewer pipes, telephone conduits, tunnels and cut trenches: \$5.00 per day additional.

Work in live sewage: \$2.50 per day additional.

LABO0036B 07/01/1999

	Rates	Fringes
SAN FRANCISCO AND SAN MATEO COUNTIES:		
PLASTERER TENDER	19.87	7.66

FOOTNOTES:

Work on a suspended scaffold: \$5.00 per day additional.

Work operating a plaster mixer pump gun: \$1.00 per hour additional.

LABO0067B 12/01/2000

	Rates	Fringes
ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN MATEO, SANTA CLARA, SAN FRANCISCO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS, AND TUOLUMNE COUNTIES:		

ASBESTOS REMOVAL LABORER	20.77	7.36
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SCOPE OF WORK:

Covers site mobilization; initial site clean-up; site preparation; removal of asbestos-containing materials from walls and ceilings; or from pipes, boilers and mechanical systems only

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if they are being scrapped; encapsulation, enclosure and disposal of asbestos-containing materials by hand or with equipment or machinery; scaffolding; fabrication of temporary wooden barriers; and assembly of decontamination stations.

LABO0067H 06/26/2000

ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:

LABORERS:

	Rates	Fringes
Construction specialist group	22.86	7.76
Group 1	22.16	7.76
Group 1-a	22.38	7.76
GROUP 1-b: see note below		
GROUP 1-c	22.21	7.76
GROUP 1-d: see note below		
GROUP 1-e	22.71	7.76
GROUP 1-f	22.74	7.76
GROUP 1-g (Contra Costa County)	22.36	7.76
GROUP 2	22.01	7.76
GROUP 3	21.91	7.76
GROUP 4	15.60	7.76

See groups 1-b and 1-d under laborer classifications.

GUNITE LABORERS:

GROUP 1	23.12	7.76
GROUP 2	22.62	7.76
GROUP 3	22.03	7.76
GROUP 4	21.91	7.76

WRECKING WORK:

GROUP 1	22.16	7.76
GROUP 2	22.01	7.76
GROUP 3	15.60	7.76

GARDENERS, HORTICULTURAL AND LANDSCAPE

LABORERS:

New construction	21.91	7.76
Establishment warranty period	15.60	7.76

TUNNEL AND SHAFT LABORERS:

GROUP 1	26.52	7.76
GROUP 2	26.29	7.76
GROUP 3	26.04	7.76
GROUP 4	25.77	7.76
GROUP 5	25.59	7.76
GROUP 6	25.05	7.76

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Masonry and plasterer tender; Cast-in-place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 1-g, CONTRA COSTA COUNTY: Pipelayer (including grade checking in connection with pipelaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; Pressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole form setters

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

A: at demolition site for the salvage of the material.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural nozzle operator

GROUP 2: Nozzle operator (including gun, pot); Ground person

GROUP 3: Rebound

GROUP 4: Guniting laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 3: General laborer (includes all clean-up work, loading lumber, loading and burning of debris)

TUNNEL AND SHAFT LABORER CLASSIFICATIONS

GROUP 1: Diamond driller; Ground person; Guniting and shotcrete nozzle operator

GROUP 2: Rod person; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powder person - heading; Cherry picker operator - where car is lifted; Concrete finisher in tunnel; Concrete screed person; Grout pump operator and pot person; Guniting & shotcrete gun person & pot person; Header person; High pressure nozzle operator; Miner - tunnel, including top and bottom person on shaft and raise work; Nipper; Nozzle operator on slick line; Sandblaster - pot person

GROUP 4: Steel form raiser and setter; Timber person, retimber person (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powder person - primer house

GROUP 5: Vibrator operator, pavement breaker; Bull gang - muckers, track person; Concrete crew - includes rodding and spreading

GROUP 6: Dump person (any method); Grout crew; Rebound person; Swamper

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LABO0067J 06/26/2000

Rates Fringes

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS AND TUOLUMNE COUNTIES:

LABORERS:

Construction specialist group	21.86	7.76
GROUP 1	21.16	7.76
GROUP 1-a	21.38	7.76
GROUP 1-b: see note below		
GROUP 1-c	21.21	7.76
GROUP 1-d: see note below		
GROUP 1-e	21.71	7.76
GROUP 1-f	21.74	7.76
GROUP 2	21.01	7.76
GROUP 3	20.90	7.76
GROUP 4	14.60	7.76

See groups 1-b and 1-d under laborer classifications.

GUNITE LABORERS:

GROUP 1	21.62	7.76
GROUP 2	21.62	7.76
GROUP 3	21.03	7.76
GROUP 4	20.91	7.76

WRECKING WORK:

GROUP 1	21.16	7.76
GROUP 2	21.01	7.76
GROUP 3	14.60	7.76

GARDENERS, HORTICULTURAL AND LANDSCAPE

LABORERS:

New construction	20.90	7.76
Establishment warranty period	14.60	7.76

TUNNEL AND SHAFT LABORERS:

GROUP 1	26.52	7.76
GROUP 2	26.29	7.76
GROUP 3	26.04	7.76
GROUP 4	25.77	7.76
GROUP 5	25.59	7.76
GROUP 6	20.05	7.76

FOOTNOTE:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Masonry and plasterer tender; Cast-in-place manhole form setter;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar ype; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

A: at demolition site for the salvage of the material.

B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.

C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural nozzle operator

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 2: Nozzle operator (including gun, pot); Ground person

GROUP 3: Rebound

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 3: General laborer (includes all clean-up work, loading lumber, loading and burning of debris)

TUNNEL AND SHAFT LABORER CLASSIFICATIONS

GROUP 1: Diamond driller; Ground person; Gunitite and shotcrete nozzle operator

GROUP 2: Rod person; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powder person - heading; Cherry picker operator - where car is lifted; Concrete finisher in tunnel; Concrete screed person; Grout pump operator and pot person; Gunitite & shotcrete gun person & pot person; Header person; High pressure nozzle operator; Miner - tunnel, including top and bottom person on shaft and raise work; Nipper; Nozzle operator on slick line; Sandblaster - pot person

GROUP 4: Steel form raiser and setter; Timber person, retimber person (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powder prerson - primer house

GROUP 5: Vibrator operator, pavement breaker; Bull gang - muckers, track person; Concrete crew - includes rodding and spreading

GROUP 6: Dump person (any method); Grout crew; Rebound person; Swamper

LABO0073C 07/01/1999

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
BRICK TENDER	23.20	4.55

FOOTNOTE:

Refractory work where heat-protective clothing is required: \$2.00 per hour additional.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABO0073E 10/01/1998

	Rates	Fringes
CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:		

PLASTERER TENDER	22.36	4.88
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LABO0166A 07/01/1999

	Rates	Fringes
ALAMEDA AND CONTRA COSTA COUNTIES:		

BRICK TENDER	20.90	10.26
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FOOTNOTES:

Work on jobs where heat-protective clothing is required: \$2.00 per hour additional.

Work at grinders: \$.25 per hour additional.

Manhole work: \$2.00 per day additional.

LABO0166B 07/01/1999

	Rates	Fringes
ALAMEDA AND CONTRA COSTA COUNTIES:		

PLASTERER TENDERS:

Plasterer tender	23.25	10.16
Gun operator	24.00	10.16

LABO0185A 07/01/1999

	Rates	Fringes
MONTEREY AND SAN BENITO COUNTIES:		

BRICK TENDER	22.95	4.55
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FOOTNOTE:

Refractory work where heat-protective clothing is required: \$2.00 per hour additional.

LABO0270A 07/01/2000

	Rates	Fringes
SANTA CLARA COUNTY:		

BRICK TENDER	24.05	6.10
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FOOTNOTE:

Refractory work where heat-protective clothing is required: \$2.00 per hour additional.

LABO0270B 07/01/2000

	Rates	Fringes
SANTA CRUZ COUNTY:		

BRICK TENDER	24.05	6.10
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

FOOTNOTE:

Refractory work where heat-protective clothing is required:
\$2.00 per hour additional.

LABO0294A 07/01/2000		
	Rates	Fringes
FRESNO, KINGS AND MADERA COUNTIES:		
BRICK TENDER	23.64	5.31

FOOTNOTE:

Refractory work where heat-protective clothing is required:
\$2.00 per hour additional.

LABO0297A 09/01/1998		
	Rates	Fringes
MONTEREY AND SAN BENITO COUNTIES:		
PLASTERER TENDER	15.95	

FOOTNOTE:

Mixer person: \$4.00 per day additional.

PAIN0008A 07/01/2000		
	Rates	Fringes
SAN FRANCISCO COUNTY:		
PAINTER	26.56	8.20

PAIN0012A 01/01/2001		
	Rates	Fringes
ALAMEDA, CONTRA COSTA, MERCED, MARIPOSA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:		
SOFT FLOOR LAYER	29.00	11.25

PAIN0016A 07/01/2000		
	Rates	Fringes
ALAMEDA AND CONTRA COSTA COUNTIES:		

PAINTERS:

Work on industrial buildings
(used for the manufacture and
processing of goods for sale
or service); Also, steel
construction (bridges, stacks,
towers, tanks and similar
structures):

Brush and Roller	24.10	9.94
Spray and Sandblast	24.50	9.94
Application of exotic materials	24.10	9.94

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

All other work:

Brush and Roller	23.85	9.94
Application of exotic materials	24.10	9.94

FOOTNOTE:

High time (free fall conditions): With a minimum of 2 hrs. exposure, work over 50 ft. above ground or water level to be paid 1/2 hr. per day additional; work from 100 ft. to 180 ft. above ground or water level to be paid 1 hr. per day additional; and work over 180 ft. above ground or water level to be paid 2 hrs. per day additional.

PAIN0016C 08/01/1999

	Rates	Fringes
ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:		

DRYWALL FINISHERS:

Remodel/tenant improvement work (shopping centers, offices and warehouses where the taping contractor is working directly for the tenant)

	21.73	8.28
All other work	27.43	9.98

PAIN0016H 01/01/1999

	Rates	Fringes
FRESNO, KINGS AND MADERA COUNTIES:		
DRYWALL TAPER	20.49	5.39
PAINTER	19.74	5.39

FOOTNOTES:

Paperhangers, and work over 30 feet (does not include work from a lift): \$0.50 per hour additional.

Spray painters and sandblasters: \$0.75 per hour additional.
Lead paint abaters: \$0.75 per hour additional.

PAIN0016K 01/01/1999

	Rates	Fringes
FRESNO, KINGS, MADERA AND COUNTIES:		
SOFT FLOOR LAYER	18.63	4.09

PAIN0016N 07/01/2000

	Rates	Fringes
MONTEREY, SAN BENITO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAINTER:

COMMERCIAL/INDUSTRIAL	24.30	9.04
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PAIN0016Q 03/01/1999

	Rates	Fringes
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CALAVERAS AND SAN JOAQUIN COUNTIES:

Drywall Taper	18.85	7.23
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PAINTERS:

Brush	18.05	7.23
Sandblaster; Waterblaster;		
Steam cleaning	19.05	7.23
Work with coal tar and exotic materials	19.80	7.23

PAIN0016S 09/01/2000

	Rates	Fringes
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MARIPOSA, MERCED, STANISLAUS, AND TOULUMNE COUNTIES:

DRYWALL FINISHER	18.13	9.04
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PAINTER:

Brush	17.13	9.04
Paperhanger; Spray & Sandblast	18.03	9.04
Hazardous coating, application and removal	20.03	9.04

PAIN0169A 07/01/2000

	Rates	Fringes
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FRESNO, KINGS, MADERA, MARIPOSA AND MERCED COUNTIES:

GLAZIER	23.55	8.52
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FOOTNOTE:

Welding in connection with glazing work: \$1.00 per hour additional.

PAIN0169E 07/01/2000

	Rates	Fringes
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ALAMEDA AND CONTRA COSTA COUNTIES:

GLAZIER	29.35	9.91
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PAIN0169I 07/01/2000

	Rates	Fringes
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ALAMEDA AND CONTRA COSTA:

SHOWER DOOR INSTALLER	23.57	4.60
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PAID HOLIDAYS:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving, and Christmas Day.

PAIN0718B	07/01/1999		
		Rates	Fringes
SAN FRANCISCO AND SAN MATEO COUNTIES:			
GLAZIER		28.17	9.89

PAIN0767A	07/01/2000		
		Rates	Fringes
CALAVERAS, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:			
GLAZIER		26.77	6.80

PAID HOLIDAYS:

New Year's Day, Washington's Birthday, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving Day, and Christmas Day.

FOOTNOTE:

Work thirty (30) feet or over free fall: \$0.60 per hour additional.

PAIN1176A	06/26/2000		
		Rates	Fringes
PARKING LOT STRIPING/HIGHWAY MARKING:			
GROUP 1		22.84	6.91
GROUP 2		22.45	6.91
GROUP 3		19.51	6.91
GROUP 4		22.15	6.91
Service Person (maintenance and repair of equipment)			
		13.33	5.87
Parking Lot, Game Court and Playground Installer			
		19.51	6.91

PARKING LOT STRIPING / HIGHWAY MARKING CLASSIFICATIONS

GROUP 1: STRIPER: Layout and application of painted traffic stripes and marking; hot thermo plastic; tape traffic stripes and markings

GROUP 2: TRAFFIC DELINEATING DEVICE APPLICATOR: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices; includes all related surface preparation (sandblasting, waterblasting, grinding) as part of the application process

GROUP 3: TRAFFIC SURFACE ABRASIVE BLASTER: Removal of traffic lines and markings; preparation of surface for coatings and traffic control devices

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 4: TRAFFIC PROTECTIVE DELINEATING SYSTEMS INSTALLER:
Removes, relocates, installs permanently affixed roadside and parking delineation barricades, fencing, guard rail, cable anchor, retaining walls, reference signs, and monument markers

PAIN1237C 06/01/1999
Rates Fringes
CALAVERAS, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:
SOFT FLOOR LAYER 20.57 9.10

PAIN1621A 07/01/2000
Rates Fringes
MONTEREY, SAN BENITO, SANTA CLARA AND SANTA CRUZ COUNTIES:
GLAZIER 29.97 9.29

PLAS0001D 06/28/1999
Rates Fringes
CEMENT MASONS:
Cement mason 22.35 9.46
Swing or slip form scaffolds;
Mastic, magnesite, gypsum,
epoxy, polyester, resin and
all composition 23.10 9.46

PLAS0066B 07/01/2000
Rates Fringes
ALAMEDA, CONTRA COSTA, SAN MATEO AND SAN FRANCISCO COUNTIES:
PLASTERER 27.21 10.70

PLAS0300A 01/01/2001
Rates Fringes
FRESNO, KINGS AND MADERA COUNTIES:
PLASTERER 22.72 8.00
SAN BENITO, SANTA CLARA AND SANTA
CRUZ COUNTIES:
PLASTERER 27.24 7.90
CALAVERAS AND SAN JOAQUIN COUNTIES:
PLASTERER 25.16 8.50
MONTEREY COUNTY:
PLASTERER 23.98 7.90

MARIPOSA, MERCED, STANISLAUS AND

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TUOLUMNE COUNTIES:

PLASTERER	25.17	8.50
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PLUM0036A 01/01/2001

	Rates	Fringes
CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:		

PLUMBER & STEAMFITTER	27.79	9.19
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PLUM0036C 01/01/2001

	Rates	Fringes
MONTEREY AND SANTA CRUZ COUNTIES:		

PLUMBER & STEAMFITTER	27.79	9.19
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PLUM0036E 01/01/2000

	Rates	Fringes
FRESNO COUNTY:		

PIPE TRADES PERSON:

Building construction only	11.50	4.70
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SCOPE OF WORK:

Installation of corrugated metal piping for drainage, as well as installation of corrugated metal piping for culverts in connection with storm sewers and drains; Grouting, dry packing and diapering of joints, holes or chases including paving over joints, in piping; Temporary piping for dirt work for building site preparation; Operating jack hammers, pavement breakers, chipping guns, concrete saws and spades to cut holes, chases and channels for piping systems; Digging, grading, backfilling and ground preparation for all types of pipe to all points of the jobsite; Ground preparation including ground leveling, layout and planting of shrubbery, trees and ground cover, including watering, mowing, edging, pruning and fertilizing, the breaking of concrete, digging, backfilling and tamping for the preparation and completion of all work in connection with lawn sprinkler and landscaping; Loading, unloading and distributing materials at jobsite; Putting away materials in storage bins in jobsite secure storage area; Demolition of piping and fixtures for remodeling and additions; Setting up and tearing down work benches, ladders and job shacks; Clean-up and sweeping of jobsite; Pipe wrapping and waterproofing where tar or similar material is applied for protection of buried piping; Flag person

PLUM0036I 01/01/2000

	Rates	Fringes
MERCED COUNTY:		

PIPE TRADES PERSON:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Building construction only 11.50 4.70

SCOPE OF WORK:

Installation of corrugated metal piping for drainage, as well as installation of corrugated metal piping for culverts in connection with storm sewers and drains; Grouting, dry packing and diapering of joints, holes or chases including paving over joints, in piping; Temporary piping for dirt work for building site preparation; Operating jack hammers, pavement breakers, chipping guns, concrete saws and spades to cut holes, chases and channels for piping systems; Digging, grading, backfilling and ground preparation for all types of pipe to all points of the jobsite; Ground preparation including ground leveling, layout and planting of shrubbery, trees and ground cover, including watering, mowing, edging, pruning and fertilizing, the breaking of concrete, digging, backfilling and tamping for the preparation and completion of all work in connection with lawn sprinkler and landscaping; Loading, unloading and distributing materials at jobsite; Putting away materials in storage bins in jobsite secure storage area; Demolition of piping and fixtures for remodeling and additions; Setting up and tearing down work benches, ladders and job shacks; Clean-up and sweeping of jobsite; Pipe wrapping and waterproofing where tar or similar material is applied for protection of buried piping; Flag person

PLUM0038A 07/01/2000

	Rates	Fringes
SAN FRANCISCO COUNTY:		
PLUMBERS:		
Work on wooden frame structures 5 stories or less excluding high-rise buildings and commercial work such as hospitals, prisons, hotels and schools	28.50	17.35
All other work	39.00	21.55
LANDSCAPE/IRRIGATION FITTER	27.32	10.15

PLUM0159A 07/01/2000

	Rates	Fringes
CONTRA COSTA COUNTY:		
PLUMBERS & STEAMFITTERS:		
Work on apartments over 4 stories, and motels	25.76	9.14
All other work	33.56	13.59

PLUM0342A 07/01/2000

	Rates	Fringes
CONTRA COSTA COUNTY:		
PLUMBERS AND STEAMFITTER	35.76	13.49

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLUM0342B 07/01/2000		
	Rates	Fringes
ALAMEDA COUNTY:		
PLUMBER & STEAMFITTER	35.76	13.44

PLUM0355D 07/01/2000		
	Rates	Fringes
ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, STANISLAUS, AND TUOLUMNE COUNTIES:		
LANDSCAPE FITTER; UNDERGROUND UTILITY WORKER	22.00	5.55

PLUM0393A 07/01/2000		
	Rates	Fringes
SAN BENITO AND SANTA CLARA COUNTIES:		
PLUMBER & PIPEFITTER:		
Work on motels and hotels which do not exceed 4 stories in height, excluding garages and parking areas	20.64	5.30
All other work	42.51	10.58

* PLUM0467A 07/01/2000		
	Rates	Fringes
SAN MATEO COUNTY:		
PLUMBER; PIPEFITTER; STEAMFITTER; REFRIGERATION & AIR CONDITIONING	39.15	11.05

ROOF0027C 09/01/1999		
	Rates	Fringes
FRESNO, KINGS, AND MADERA COUNTIES:		
ROOFER	20.40	6.55

FOOTNOTE:
Work with pitch, pitch base of pitch impregnated products or any material containing coal tar pitch, on any building old or new, where both asphalt and pitchers are used in the application of a built-up roof or tear off: \$2.00 per hour additional.

ROOF0040B 08/01/2000		
	Rates	Fringes
SAN FRANCISCO & SAN MATEO COUNTIES:		
ROOFER	22.47	10.67

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOF0081A 08/01/2000

	Rates	Fringes
ALAMEDA AND CONTRA COSTA COUNTIES:		
ROOFER	22.80	9.85

ROOF0081E 09/14/2000

	Rates	Fringes
CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:		
ROOFER	19.56	5.80

ROOF0095B 08/01/1996

	Rates	Fringes
MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ COUNTIES:		
ROOFERS:		
Kettle person (2 kettles);		
Bitumastic, enameler,		
coal tar, pitch and		
mastic worker	26.07	6.75
All other work	24.07	6.75

SFCA0483A 01/01/2001

	Rates	Fringes
ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:		
SPRINKLER FITTER (FIRE)	35.59	11.20

SFCA0669K 04/01/2001

	Rates	Fringes
CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS AND TUOLUMNE COUNTIES:		
SPRINKLER FITTER (FIRE)	28.35	6.00

SHEE0104A 07/01/2000

	Rates	Fringes
ALAMEDA AND CONTRA COSTA COUNTIES:		
SHEET METAL WORKER:		
Work on projects with an HVAC contract price of \$270,000 equipped with packaged units or a unitary system; Also, tenant completion work extending from an existing trunk line or an		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

existing water or air loop to registers and/or diffusers; Also, remodel or add-on contracts on existing facilities providing the contract price is \$165,000 or less; Also, architectural sheet metal contracts of \$100,000 or less; Also, pre-engineered and pre-manufactured siding
 All other work

30.83	13.78
36.32	13.95

 SHEE0104B 07/01/2000

Rates Fringes

MONTEREY AND SAN BENITO COUNTIES:

SHEET METAL WORKER	30.31	11.85
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 SHEE0104D 07/01/2000

Rates Fringes

SAN MATEO COUNTY:

SHEET METAL WORKER:

Work with an HVAC contract price of \$250,000 equipped with packaged units or a unitary system; Also, tenant completion work extending from an existing trunk line or air loop to registers and/or diffusers; Also, remodel or add-on contracts on existing facilities providing the contract price is \$150,000 or less; Also, architectural sheet metal contracts of \$100,000 or less; Also, pre-engineered and pre-manufactured siding
 All other work

33.59	12.07
37.26	12.81

 SHEE0104E 07/01/2000

Rates Fringes

SAN FRANCISCO COUNTY:

SHEET METAL WORKER:

Work with an HVAC contract price of \$50,000 or less; Also, tenant completion work providing the contract price is \$50,000 or less; Also, remodel or add-on contracts on existing facilities providing the contract price is \$50,000 or less; Also, architectural sheet metal contracts of \$100,000 or less;

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Also, pre-engineered and pre-manufactured siding	35.66	12.90
All other work	36.21	14.05

SHEE0104G 07/01/2000

	Rates	Fringes
SANTA CRUZ COUNTY:		
SHEET METAL WORKER	31.45	10.71

SHEE0104H 07/01/2000

	Rates	Fringes
SANTA CLARA COUNTY:		
SHEET METAL WORKER:		
Work with an HVAC contract price of \$250,000 equipped with packaged units or a unitary system; Also, tenant completion work extending from an existing trunk line or air loop to registers and/or diffusers; Also, remodel or add-on contracts on existing facilities providing the contract price is \$150,000 or less; Also, architectural sheet metal contracts of \$100,000 or less; Also pre-engineered and pre-manufactured siding	35.32	11.08
All other work	37.49	12.76

SHEE01040 07/01/1999

	Rates	Fringes
ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:		
SHEET METAL WORKERS:		
Metal deck and siding	27.44	11.80

SHEE0162A 01/01/2001

	Rates	Fringes
CALAVERAS AND SAN JOAQUIN COUNTIES:		
SHEET METAL WORKER	26.14	10.26

SHEE0162C 07/01/2000

	Rates	Fringes
MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES:		
SHEET METAL WORKER (does not include metal deck and siding)	26.54	15.52

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

 SHEE0162D 06/01/2000

	Rates	Fringes
FRESNO, KINGS, MADERA and TULARE COUNTIES:		
SHEET METAL WORKER	27.07	11.57

 SHEE0162M 07/01/1999

	Rates	Fringes
CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:		
SHEET METAL WORKERS:		
Metal deck and siding	29.42	9.52

 TEAM0094A 06/01/2001

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	22.62	11.90
GROUP 2	22.92	11.90
GROUP 3	23.22	11.90
GROUP 4	23.57	11.90
GROUP 5	23.92	11.90

FOOTNOTES:

Articulated dump truck; Bulk cement spreader (with or without auger); Dumpcrete truck; Skid truck (debris box); Dry pre-batch concrete mix trucks; Dumpster or similar type; Slurry truck: Use dump truck yardage rate.

Heater planer; Asphalt burner; Scarifier burner; Industrial lift truck (mechanical tailgate); Utility and clean-up truck: Use appropriate rate for the power unit or the equipment utilized.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump trucks, under 6 yds.; Single unit flat rack (2-axle unit); Nipper truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump machine; Fork lift and lift jitneys; Fuel and/or grease truck driver or fuel person; Snow buggy; Steam cleaning; Bus or personhaul driver; Escort or pilot car driver; Pickup truck; Teamster oiler/greaser and/or serviceperson; Hook tender (including loading and unloading); Team driver; Tool room attendant (refineries)

GROUP 2: Dump trucks, 6 yds. and under 8 yds.; Transit mixers, through 10 yds.; Water trucks, under 7,000 gals.; Jetting trucks, under 7,000 gals.; Vacuum trucks, under 7,500 gals.; Single-unit flat rack (3-axle unit); Highbed heavy duty transport; Scissor truck; Rubber-tired muck car (not self-loaded); Rubber-tired truck jumbo; Winch truck and "A" frame drivers; Combination winch truck with hoist; Road oil truck or bootperson; Buggymobile;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Ross, Hyster and similar straddle carriers; Small rubber-tired tractor

GROUP 3: Dump trucks, 8 yds. and including 35 yds.; Transit mixers, over 10 yds.; Water trucks, 7,000 gals. and over; Jetting trucks, 7,000 gals. and over; Vacuum trucks, 7,500 gals. and over; Trucks towing tilt bed or flat bed pull trailers; Lowbed heavy duty transport; Heavy duty transport tiller person; Self-propelled street sweeper with self-contained refuse bin; Boom truck - hydro-lift or Swedish type extension or retracting crane; P.B. or similar type self-loading truck; Tire repairperson; Truck repairperson; Combination bootperson and road oiler; Dry distribution truck (A bootperson when employed on such equipment, shall receive the rate specified for the classification of road oil trucks or bootperson); Ammonia nitrate distributor, driver and mixer; Snow Go and/or plow

GROUP 4: Dump trucks, over 35 yds. and under 65 yds.; Water pulls - DW 10's, 20's, 21's and other similar equipment when pulling Aqua/pak or water tank trailers; Helicopter pilots (when transporting men and materials); DW10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTourneau Pulls, Tournorocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers

GROUP 5: Dump trucks, 65 yds. and over; Holland hauler

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION CA010009 06/29/01 CA9

General Decision Number CA010009

Superseded General Decision No. CA000009

State: **California**

Construction Type:

- BUILDING**
- DREDGING
- HEAVY
- HIGHWAY

County(ies):

ALPINE	MODOC	SISKIYOU
AMADOR	NAPA	SOLANO
BUTTE	NEVADA	SONOMA
COLUSA	PLACER	SUTTER
EL DORADO	PLUMAS	TEHAMA
GLENN	SACRAMENTO	TRINITY
LASSEN	SHASTA	YOLO
MARIN	SIERRA	YUBA

BUILDING CONSTRUCTION PROJECTS; DREDGING CONSTRUCTION PROJECTS (does not include hopper dredge work); **HEAVY CONSTRUCTION PROJECTS** (does not include water well drilling); **AND HIGHWAY CONSTRUCTION PROJECTS**

AMADOR COUNTY:

BUILDING CONSTRUCTION:

See wage data group ID no. SUCA1002A, only.

Modification Number	Publication Date
0	03/02/2001
1	03/23/2001
2	04/13/2001
3	04/27/2001
4	06/01/2001
5	06/29/2001

COUNTY(ies):

ALPINE	MODOC	SISKIYOU
AMADOR	NAPA	SOLANO
BUTTE	NEVADA	SONOMA
COLUSA	PLACER	SUTTER
EL DORADO	PLUMAS	TEHAMA
GLENN	SACRAMENTO	TRINITY
LASSEN	SHASTA	YOLO
MARIN	SIERRA	YUBA

ASBE0016A 08/01/2000

Rates

Fringes

INSULATOR/ASBESTOS WORKER

Includes the application of all insulating materials, protective coverings, coatings, and finishings

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

to all types of mechanical systems 37.38 7.66

ASBE0016H 05/01/1999

Rates Fringes

MARIN AND NAPA COUNTIES:

ASBESTOS REMOVAL WORKER/
HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting,
stripping, removal, scrapping,
vacuuming, bagging and disposing
of all insulation materials from
mechanical systems, whether they
contain asbestos or not

22.01 4.28

ASBE0016I 05/01/1999

Rates Fringes

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC,
NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU,
SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:

ASBESTOS REMOVAL WORKER/
HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting,
stripping, removal, scrapping,
vacuuming, bagging and disposing
of all insulation materials from
mechanical systems, whether they
contain asbestos or not

22.01 4.28

BOIL0092A 10/01/1999

Rates Fringes

BOILERMAKER	29.56	9.81
TUBE WELDER	31.06	9.81

BRCA0003B 08/01/1998

Rates Fringes

MARBLE FINISHER	21.12	4.97
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BRCA0003E 07/01/2000

Rates Fringes

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC,
NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SUTTER,
TEHAMA, YOLO AND YUBA COUNTIES:

BRICKLAYER	25.65	7.35
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FOOTNOTES:

Underground work such as tunnel work, sewer work, manholes,
catch basins, sewer pipes and telephone conduit shall be paid
\$5.00 per day above the regular wage.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

In addition to the daily allowance specified in the preceding sentence, all employees working in direct contact with raw sewage shall receive an additional allowance of \$2.50 per day above the regular wage.

Fifty cents (\$0.50) per hour extra will be allowed for operating a saw or grinder, provided such work is for the major portion of the day.

A gunite nozzle person shall receive \$1.00 per hour above the journeyman wage rate.

On one or two-person light-duty swinging scaffolds, from and including the seventh floor to the sky, \$10.00 per day over and above the regular wage shall be paid. The floors shall be determined by the number on the elevator identity or floor identity.

BRCA0003F 07/01/2000		
	Rates	Fringes
MARIN, NAPA, SISKIYOU, SOLANO, SONOMA AND TRINITY COUNTIES:		
BRICKLAYER	30.80	9.95

FOOTNOTES:

Underground work such as tunnel work, sewer work, manholes, catch basins, sewer pipes and telephone conduit: \$5.00 per day additional.

Additionally, for work in direct contact with raw sewage: \$2.50 per day additional.

Operating a saw or grinder: \$0.50 per hour additional.

Gunite nozzle person: \$1.00 per hour additional.

On one or two person light duty swinging scaffolds, from and including the seventh floor to the sky (floors to be determined by the number on the elevator identity or floor identity): \$10.00 per day additional.

BRCA0003P 07/01/1999		
	Rates	Fringes
TERRAZZO WORKER	32.00	9.65
TERRAZZO FINISHER	22.47	5.00

BRCA0003S 04/01/2001		
	Rates	Fringes
ALPINE, AMADOR COUNTIES:		
TILE SETTER	24.93	7.15
TILE FINISHER	15.96	5.92

NAPA, SISKIYOU, SOLANO, MARIN,
and TRINITY COUNTIES:

TILE SETTERS	28.63	7.20
TILE FINISHERS	15.96	5.97

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SONOMA COUNTY:

TILE SETTER	25.47	7.15
TILE FINISHER	15.91	4.97

 BRCA0003X 08/01/1998

	Rates	Fringes
ALPINE, AMADOR, MARIN, NAPA, SISKIYOU, SOLANO, SONOMA AND TRINITY COUNTIES:		

MARBLE SETTER	30.65	9.96
MARBLE FINISHER	21.67	5.52

 BRCA0003Y 08/01/1998

	Rates	Fringes
BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SUTTER, TEHAMA, YOLO AND YUBA COUNTIES:		

MARBLE SETTER	30.65	9.96
MARBLE FINISHER	21.67	5.52

 BRCA0029A 04/02/1993

	Rates	Fringes
BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS SACRAMENTO, SHASTA, SIERRA, SUTTER,TEHAMA, YOLO,AND YUBA COUNTIES		

TILE SETTER	24.98	5.03
TILE FINISHER	15.00	2.40

 CARP0003L 08/01/2000

	Rates	Fringes
MARIN, NAPA, SOLANO AND SONOMA COUNTIES:		

DRYWALL INSTALLER/LATHER	28.00	11.645
DRYWALL STOCKER/SCRAPPER	14.00	6.385

REMAINDER OF COUNTIES:

DRYWALL INSTALLER/LATHER	23.27	11.645
DRYWALL STOCKER/SCRAPPER	11.64	6.385

 FOOTNOTE:

Effective 8/1/99 new projects public or private, valued at twenty five million dollars or more shall be paid at the MARIN, NAPA, SOLANO and SONOMA rates.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARP0012B 09/01/1993

	Rates	Fringes
ALPINE AND AMADOR COUNTIES:		
TILE FINISHER	12.80	3.12

CARP0034A 07/01/1999

	Rates	Fringes
DIVERS:		
Diver standby	28.65	13.625
Diver wet pay	39.90	13.625
Tender	28.65	13.625
Saturation diver	46.50	13.625
Manned submersible	46.50	13.625
Manifold operator/life support Technician	30.65	13.625
Remote controlled vehicle- remote operated vehicle pilot	28.65	13.625
Bell winch operator	28.65	13.625

DEPTH PAY (Surface Diving):

50 to 100 ft	\$1.32/ft
100 to 150 ft	\$66.00 + \$1.85/ft
150 to 200 ft	\$158.00 + \$2.65/ft
200 ft and over	\$291.00 + \$3.00/ft

CARP0034B 07/01/2000

	Rates	Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		

PILEDRIIVER	26.65	13.375
*PILEDRIIVER - BRIDGE BUILDER	23.77	11.205

MARIN, NAPA, SOLANO AND SONOMA COUNTIES:

PILEDRIIVER	26.65	13.375
*PILEDRIIVER - BRIDGE BUILDER	28.00	11.205

*FOOTNOTE: Effective 7/1/99 new projects public or private, valued at twenty five million dollars or more PILEDRIIVER BRIDGE BUILDER shall be paid at the MARIN, NAPA, SOLANO AND SONOMA COUNTIES counties rate.

CARP0035C 07/01/2000

	Rates	Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO, AND YUBA COUNTIES		

CARPENTER	22.77	11.205
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HARDWOOD FLOORLAYER; SHINGLER; POWER SAW OPERATOR; STEEL SCAFFOLD AND STEEL SHORING ERECTOR; SAW FILER	22.92	11.205
BRIDGE BUILDERS	23.77	11.205
MILLWRIGHT	23.92	12.645

MARIN, NAPA, SOLANO AND SONOMA COUNTIES

CARPENTER	28.00	11.205
HARDWOOD FLOOR LAYER; SHINGLER; POWER SAW OPERATOR; STEEL SCAFFOLD AND STEEL SHORING ERECTOR; SAW FILER	28.15	11.205
BRIDGE BUILDERS	28.00	11.205
MILLWRIGHT	28.00	12.645

FOOTNOTE: Effective 7/1/99 new projects public or private, valued at twenty five million dollars or more shall be paid at thr MARIN, NAPA, SOLANO AND SONOMA COUNTIES counties rate.

CARP0035H 07/01/1999		
	Rates	Fringes
MODULAR FURNITURE INSTALLER	16.87	7.465

ELEC0006B 12/01/2000		
	Rates	Fringes
COMMUNICATIONS AND SYSTEMS WORK: Communications and Systems Installer	23.32	3%+4.10
Communications and Systems Technician	26.55	3%+4.10

SCOPE OF WORK:

Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access; excluding energy management systems.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

In the Counties of Fresno, Kings and Madera, fire alarm work shall be performed at the current inside wireman total cost package.

ELEC0077D 02/01/2000

	Rates	Fringes
MODOC AND SISKIYOU COUNTIES:		
LINE CONSTRUCTION AND OUTSIDE UTILITY TRANSMISSION WORK:		
Cable splicer, lead pole sprayer	29.41	3.5% + 6.85
Line technician, pole sprayer, heavy line equipment operator, line welder	26.52	3.5% + 6.85
Line equipment operator	22.86	3.5% + 5.10
Head ground person, powder worker, jackhammer operator	19.95	3.5% + 5.10
Ground person	18.74	3.5% + 5.10
Tree trimmer	20.57	3.5% + 5.10
Tree trimmer ground person	11.04	3.5% + 5.10

ELEC0180A 06/01/2001

	Rates	Fringes
[BPA AND SOLANO COUNTIES:		
ELECTRICIANS:		
Electrician	32.15	3% + 7.87
Cable splicer	36.17	3% + 7.87

ELEC0180B 06/01/1996

	Rates	Fringes
NAPA AND SOLANO COUNTIES		
LINE CONSTRUCTION:		
Line Technician	27.37	3%+6.00
Heavy Equipment Operator	23.26	3%+6.00
Truck Driver; Ground Person	20.53	3%+6.00

* ELEC0340C 12/01/2000

	Rates	Fringes
ALPINE, AMADOR, COLUSA, EL DORADO, NEVADA, PLACER, SACRAMENTO, SIERRA, SUTTER, YOLO, AND YUBA COUNTIES		
Electrician	28.71	3%+6.32
Cable splicer	31.58	3%+6.32

ELEC0442A 06/01/1996

	Rates	Fringes
BUTTE, GLENN, PLUMAS, SHASTA, TEHAMA, AND TRINITY COUNTIES		
ELECTRICIANS:		
Electricians	20.00	3%+6.25

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ELEC0551G 06/01/2001		
	Rates	Fringes
MARIN AND SONOMA COUNTIES		
ELECTRICIAN	32.13	3% + 8.51
CABLE SPLICER	35.34	3% + 8.51

ELEC0659K 01/01/2000		
	Rates	Fringes
MODOC and SISKIYOU COUNTIES:		
ELECTRICIANS	25.53	3% + 7.25

ELEC1245A 06/01/2001		
	Rates	Fringes
LINE CONSTRUCTION AND OUTSIDE UTILITY TRANSMISSION WORK:		
Line worker; Cable splicer	32.20	4.5% + 7.35
Powder worker	30.59	4.5% + 7.46
Ground person	20.93	4.5% + 7.58
Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), and overhead and underground distribution line equipment)	27.37	4.5% + 7.07
Line worker, welding	33.81	4.5% + 7.53

SCOPE OF WORK:

All outside work on electrical transmission lines, switchyards and substations, and outside work in electrical utility distribution systems owned, maintained and operated by electrical utility companies, municipalities, or governmental agencies.

ELEV0008A 08/01/2000		
	Rates	Fringes
ELEVATOR MECHANIC	41.845	7.195

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0001B 05/01/1999		
	Rates	Fringes
POWER EQUIPMENT OPERATORS CRANES AND ATTACHMENTS DREDGING		

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TUNNEL AND UNDERGROUND

These areas do not apply to piledrivers and steel erectors.

AREA 1: BUTTE, MARIN, NAPA, SACRAMENTO, SOLANO, SUTTER, YOLO AND
YUBA COUNTIES

AREA 2: MODOC COUNTY

The remaining counties are split between Area 1 and Area 2 as
noted below:

ALPINE COUNTY:

AREA 1: Area within the line beginning at the northernmost
point of Alpine County at the intersection of the
California/Nevada **state** boundary,
Thence southeasterly along the **state** boundary to the
intersection of the northerly line of Township 10N, Range
21E,
Thence westerly to the intersection of said county line and
the northerly line of Township 10N, Range 18E,
Thence northerly along said county line to the point of
beginning.

AREA 2: Remainder of Alpine County.

AMADOR COUNTY:

AREA 1: Area lying westerly of the east line of Range 14E.
AREA 2: Area lying easterly of the east line of Range 14E.

COLUSA COUNTY:

AREA 1: Area lying easterly of the east line of the following
townships: Township 16N, Range 7W; Township 17N, Range 7W;
Township 18N, Range 7W.

AREA 2: Remainder of Colusa County.

EL DORADO COUNTY:

AREA 1: Beginning at the point of intersection of the northerly
line of El Dorado County with the easterly line of Range
10E,
Thence southwesterly along said county line to the southwest
corner of said county,
Thence easterly along said county line to the intersection of
the easterly line of Township 8N, Range 14#,
Thence northerly to the northeast corner of Township 10N,
Range 14E,
Thence easterly along the 2nd standard parallel
north to the intersection of the easterly line of said
county,
Thence northerly along said county line to the
California/Nevada State Border,

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Thence northerly along said border to the northerly line of said county,
Thence westerly along the county line to the intersection with the easterly line of Township 14N, Range 14E,
Thence southerly to the southeast corner of Township 14N, Range 14E,
Thence easterly to the northeast corner of Township 13N, Range 15E,
Thence southerly to the southeast corner of Township 13N, Range 15E,
Thence easterly to the northeast corner of Township 12N, Range 16E,
Thence southerly to the southeast corner of Township 12N, Range 16E,
Thence westerly to the southeast corner of Township 12N, Range 10E,
Thence northerly along the township line to the point of beginning.

AREA 2: Remainder of El Dorado County.

GLENN COUNTY:

AREA 1: Area lying easterly of the east line of the following townships: Township 18N, Range 7W; Township 19N, Range 7W; Township 20N, Range 7W; Township 21N, Range 7W.

AREA 2: Remainder of Glenn County.

LASSEN COUNTY:

AREA 1: Area lying within the following townships: Township 27N, Range 8E; Township 28N, Range 8E; Township 30N, Range 6E; Township 31N, Range 6E; township 32N, Range 6E.

AREA 2: Remainder of Lassen County.

NEVADA COUNTY:

AREA 1: Area lying south and west of the following described line:

Beginning at the point of intersection of the northerly line of Nevada County with the easterly line of Township 18N, Range 10E,
Thence southerly to the southeast corner of Township 18N, Range 10E,
Thence easterly along the township line to the northeast corner of Township 17N, Range 14E,
Thence southerly to the northwest corner of Township 17N, Range 15E,
Thence easterly along the township line to the intersection of the California/Nevada **state** border.

AREA 2: Remainder of Nevada County.

PLACER COUNTY:

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AREA 1: Beginning at the point of intersection of the northerly line of Placer County with the California/Nevada **state** border,

Thence southwesterly along said county line to the southwest corner of said county,
Thence easterly and northeasterly along said county line to the intersection with the easterly line of Range 10E,
Thence northerly to the northwest corner of Township 15N, Range 11E,
Thence easterly to the northeast corner of Township 15N, Range 11E,
Thence northerly to the northwest corner of Township 16N, Range 12E,
Thence easterly to the northwest corner of Township 16N, Range 12E,
Thence easterly to the northeast corner of Township 16N, Range 14E,
Thence southerly along the range line to the intersection of the southerly line of said county,
Thence easterly along said county line to the California/Nevada state border,
Thence northerly along said border to the point of beginning.

AREA 2: Remainder of Placer County.

PLUMAS COUNTY:

AREA 1: Beginning at the point of intersection of the northerly line of Plumas County with the easterly line of Township 30N, Range 6E,

Thence southerly to the southeast corner of Township 29N, Range 6E,
Thence easterly to the northeast corner of Township 28N, Range 8E,
Thence southerly to the southeast corner of Township 27N, Range 8E,
Thence westerly to the northeast corner of Township 27N, Range 7E,
Thence southerly to the southwest corner of Township 23N, Range 8E,
Thence easterly to the northeast corner of Township 22N, Range 8E,
Thence southerly to the northwest corner of Township 21N, Range 9E,
Thence easterly to the intersection of the Plumas County line,
Thence southwesterly and northwesterly along said county line to the most northwesterly point of said county,
Thence easterly along said county line to the point of beginning.

AREA 2: Remainder of Plumas County.

SHASTA COUNTY:

AREA 1: Beginning at the intersection of the southerly line of

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Shasta County with the easterly line of Township 29N, Range 9W,

Thence northerly to the southeast corner of Township 30N, Range 9W,

Thence westerly to the southwest corner of Township 30N, Range 9W,

Thence northerly along the range line to the intersection of said county line,

Thence northerly along said county line to the intersection with the southerly line of Township 35N,

Thence easterly to the southeast corner of Township 35N, Range 7E,

Thence northerly to the northwest corner of Township 37N, Range 6W,

Thence easterly to the northeast corner of Township 37N, Range 6W,

Thence northerly to the northwest corner of Township 38N, Range 5W,

Thence easterly along said county line to the intersection with the easterly line of Township 39S, Range 1W,

Thence southerly to the southeast corner of Township 37N, Range 1W,

Thence easterly to the northeast corner of Township 36N, Range 3E,

Thence southerly to the northwest corner of Township 35N, Range 4E,

Thence easterly to the northeast corner of Township 35N, Range 4E,

Thence southerly to the northwest corner of Township 35N, Range 5E,

Thence easterly to the northeast corner of Township 35N, Range 5E,

Thence southerly to the northwest corner of Township 32N, Range 6E,

Thence easterly to the intersection of said county line and Township 32N,

Thence southerly and westerly along said county line to the point of beginning.

AREA 2: Remainder of Shasta County.

SIERRA COUNTY:

AREA 1: Area lying southerly and westerly of a line beginning at a point of intersection of the southerly line of said county with the easterly line of Township 18N, Range 10E,

Thence northerly to the northeast corner of Township 20N, Range 10E,

Thence westerly to the southeast corner of Township 21N, Range 9E,

Thence northerly to the northeast corner of Township 21N, Range 9E,

Thence westerly along the township line to the intersection of the northerly line of said county.

AREA 2: Remainder of Sierra County.

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SISKIYOU COUNTY:

AREA 1: Beginning at the point of intersection of the southerly line of Siskiyou County with the easterly line of Range 6W,
Thence northerly to the northeast corner of Township 40N,
Range 6W,
Thence westerly to the southwest corner of Township 41N,
Range 6W,
Thence northerly to the southeast corner of Township 42N,
Range 7W,
Thence westerly to the southwest corner of Township 42N,
Range 7W,
Thence northerly to the southeast corner of Township 43N,
Range 8W,
Thence westerly to the southwest corner of Township 43N,
Range 8W,
Thence northerly along the range line to the
California/Oregon border,
Thence easterly along the **state** border to the intersection
with the easterly line of Range 5W,
Thence southerly to the northwest corner of Township 42N,
Range 4W,
Thence easterly to the northeast corner of Township 42N,
Range 4W,
Thence southerly to the southeast corner of Township 41N,
Range 4W,
Thence easterly to the northeast corner of Township 40N,
Range 2W,
Thence southerly along the range line to the southerly line
of said county,
Thence westerly along said county line to the point of
beginning.

AREA 2: Remainder of Siskiyou County.

SONOMA COUNTY:

AREA 1: Area lying easterly and southeasterly of the east line
of the following townships:

Township 8N, Range 13W
Township 9N, Range 13W
Township 10N, Range 13W
Townshp 11N, Range 13W

AREA 2: Remainder of Sonoma County.

TEHAMA COUNTY:

AREA 1: Area lying easterly of the east line of the following
townships:

Township 23N, Range 9W
Township 24N, Range 9W
Township 25N, Range 9W
Township 26N, Range 9W
Township 27N, Range 9W
Township 28N, Range 9W
Township 29N, Range 9W

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AREA 2: Remainder of Tehama County.

TRINITY COUNTY:

AREA 1: Area lying easterly of the line beginning at the intersection of the easterly line of Township 30N, Range 10W Mount Diablo Meridian (MDM) with the easterly line of Trinity County,

- Thence northerly to the northeast corner of Township 30N, Range 10W MDM,
- Thence northerly to the northeast corner of Township 30N, Range 10W MDM,
- Thence westerly to the wouthwest corner of Township 31N, Range 10W, MDM,
- Thence northerly to the northwest corner of Township 34N, Range 10W MDM,
- Thence easterly to the northeast corner of Township 34N, Range 7W, MDM,
- Thence northerly to the northwest corner of Township 37N, Range 6W MDM,
- Thence easterly to the southwest corner of Township 38N, Range 5W MDM,
- Thence northerly to the northeast corner of Township 40N, Range 6W MDM,
- Thence westerly to the southwest corner of Township 41N, Range 6W MDM,
- Thence northerly to the northwest corner of Township 41N, Range 6W MDM.

Also the area lying westerly of a line beginning at the southeast corner of Township 6N, Range 5E, of the Humboldt Meridian.

AREA 2: Remainder of Trinity County.

* ENGI0003B 07/01/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
DREDGING: CLAMSHELL & DIPPER DREDGING;		
HYDRAULIC SUCTION DREDGING:		

AREA 1:

Lever person/operator	34.39	12.29
Dredge dozer; Heavy duty repair person/welder	29.43	12.29
Booster pump operator; Deck engineer; Deck mate; Dredge tender; Winch operator	28.31	12.29
Barge person; Deckhand; Fire person; Leveehand; Oiler	25.01	12.29

AREA 2:

Lever person/operator	36.39	12.29
Dredge dozer; Heavy duty repair person/welder	31.43	12.29
Booster pump operator; Deck		

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engineer; Deck mate; Dredge tender; Winch operator	30.31	12.29
Barge person; Deckhand; Fire- person; Levee hand; Oiler	27.01	12.29

ENGI0003D 07/01/1999

	Rates	Fringes
ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		

BUILDING CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

AREA 1:

GROUP 1	30.40	12.79
GROUP 2	28.95	12.79
GROUP 3	27.55	12.79
GROUP 4	26.22	12.79
GROUP 5	25.01	12.79
GROUP 6	23.74	12.79
GROUP 7	22.65	12.79
GROUP 8	21.57	12.79
GROUP 8-A	19.45	12.79

AREA 2:

GROUP 1	32.40	12.79
GROUP 2	30.95	12.79
GROUP 3	29.55	12.79
GROUP 4	28.22	12.79
GROUP 5	27.01	12.79
GROUP 6	25.74	12.79
GROUP 7	24.65	12.79
GROUP 8	23.57	12.79
GROUP 8-A	21.45	12.79

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

AREA 1:

GROUP 1	31.25	12.79
Truck crane oiler	24.59	12.79
Oiler	22.42	12.79
GROUP 2	29.56	12.79
Truck crane oiler	24.35	12.79
Oiler	22.20	12.79
GROUP 3	27.92	12.79
Truck crane oiler	24.11	12.79
Hydraulic	23.74	12.79
Oiler	21.95	12.79

AREA 2:

GROUP 1	33.25	12.79
Truck crane oiler	26.59	12.79
Oiler	24.42	12.79

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GROUP 2	31.56	12.79
Truck crane oiler	26.35	12.79
Oiler	24.20	12.79
GROUP 3	29.92	12.79
Truck crane oiler	26.11	12.79
Hydraulic	25.74	12.79
Oiler	23.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	31.56	12.79
Truck crane oiler	24.91	12.79
Oiler	22.74	12.79
GROUP 2	29.85	12.79
Truck crane oiler	24.68	12.79
Oiler	22.49	12.79
GROUP 3	28.24	12.79
Truck crane oiler	24.41	12.79
Oiler	22.26	12.79
GROUP 4	26.54	12.79
GROUP 5	24.04	12.79
GROUP 6	21.90	12.79

POWER EQUIPMENT OPERATORS - STEEL ERECTION:

GROUP 1	32.19	12.79
Truck crane oiler	25.20	12.79
Oiler	23.06	12.79
GROUP 2	30.48	12.79
Truck crane oiler	24.98	12.79
Oiler	22.81	12.79
GROUP 3	29.09	12.79
Truck crane oiler	24.73	12.79
Hydraulic	24.35	12.79
Oiler	22.58	12.79
GROUP 4	27.16	12.79
GROUP 5	25.91	12.79

HEAVY AND HIGHWAY CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

AREA 1:		
GROUP 1	31.82	12.79
GROUP 2	30.29	12.79
GROUP 3	28.81	12.79
GROUP 4	27.43	12.79
GROUP 5	26.16	12.79
GROUP 6	24.84	12.79
GROUP 7	23.70	12.79
GROUP 8	22.56	12.79
GROUP 8-A	20.35	12.79

AREA 2:		
GROUP 1	33.82	12.79
GROUP 2	32.29	12.79
GROUP 3	30.81	12.79
GROUP 4	29.43	12.79
GROUP 5	28.16	12.79

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GROUP 6	26.84	12.79
GROUP 7	25.70	12.79
GROUP 8	24.56	12.79
GROUP 8-A	22.35	12.79

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

AREA 1:		
GROUP 1	32.70	12.79
Truck crane oiler	25.73	12.79
Oiler	23.44	12.79
GROUP 2	30.94	12.79
Truck crane oiler	25.47	12.79
Oiler	23.23	12.79
GROUP 3	29.20	12.79
Truck crane oiler	25.23	12.79
Hydraulic	24.84	12.79
Oiler	22.95	12.79

AREA 2:		
GROUP 1	34.70	12.79
Truck crane oiler	27.73	12.79
Oiler	25.44	12.79
GROUP 2	32.94	12.79
Truck crane oiler	27.47	12.79
Oiler	25.23	12.79
GROUP 3	31.20	12.79
Truck crane oiler	27.23	12.79
Hydraulic	26.84	12.79
Oiler	24.95	12.79

POWER EQUIPMENT OPERATORS - PILEDRIVERS:

GROUP 1	33.04	12.79
Truck crane oiler	26.06	12.79
Oiler	23.78	12.79
GROUP 2	31.22	12.79
Truck crane oiler	25.81	12.79
Oiler	23.51	12.79
GROUP 3	29.54	12.79
Truck crane oiler	25.52	12.79
Oiler	23.29	12.79
GROUP 4	27.77	12.79
GROUP 5	25.13	12.79
GROUP 6	22.90	12.79

POWER EQUIPMENT OPERATORS - STEEL ERECTORS:

GROUP 1	33.67	12.79
Truck crane oiler	26.35	12.79
Oiler	24.12	12.79
GROUP 2	31.90	12.79
Truck crane oiler	26.13	12.79
Oiler	23.85	12.79
GROUP 3	30.42	12.79
Truck crane oiler	25.86	12.79
Hydraulic	25.47	12.79
Oiler	23.63	12.79
GROUP 4	28.40	12.79

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GROUP 5

27.10

12.79

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels);

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Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Soils & materials tester; Tractor

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination; Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

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POWER EQUIPMENT OPERATOR CLASSIFICATIONS
ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating, over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVERS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100 tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type

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lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

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	Rates	Fringes
MARIN AND SOLANO COUNTIES:		
POWER EQUIPMENT OPERATORS:		
GROUP 1	32.82	12.70
GROUP 2	31.29	12.70
GROUP 3	29.81	12.70
GROUP 4	28.43	12.70
GROUP 5	27.16	12.70
GROUP 6	25.84	12.70
GROUP 7	24.70	12.70
GROUP 8	23.56	12.70
GROUP 8-A	21.35	12.70
POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:		
GROUP 1	33.70	12.70
Truck crane oiler	26.73	12.70
Oiler	24.44	12.70
GROUP 2	31.94	12.70
Truck crane oiler	26.47	12.70
Oiler	24.23	12.70
GROUP 3	30.20	12.70
Truck crane oiler	26.23	12.70
Hydraulic	25.84	12.70
Oiler	23.95	12.70
POWER EQUIPMENT OPERATORS - PILEDRIVERS:		
GROUP 1	34.04	12.70
Truck crane oiler	27.06	12.70
Oiler	24.78	12.70
GROUP 2	32.22	12.70
Truck crane oiler	26.81	12.70
Oiler	24.51	12.70
GROUP 3	30.54	12.70
Truck crane oiler	26.52	12.70
Oiler	24.29	12.70
GROUP 4	28.77	12.70
GROUP 5	26.13	12.70
GROUP 6	23.90	12.70
POWER EQUIPMENT OPERATORS - STEEL ERECTORS:		
GROUP 1	34.67	12.70
Truck crane oiler	27.35	12.70
Oiler	25.12	12.70
GROUP 2	32.90	12.70
Truck crane oiler	27.13	12.70
Oiler	24.85	12.70

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GROUP 3	31.42	12.70
Truck crane oiler	26.86	12.70
Hydraulic	26.47	12.70
Oiler	24.63	12.70
GROUP 4	29.40	12.70
GROUP 5	28.10	12.70

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete

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mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Soils & materials tester; Tractor

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by

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electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

POWER EQUIPMENT OPERATOR CLASSIFICATIONS
ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating, over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVERS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100

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tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

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	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
TUNNEL AND UNDERGROUND WORK:		
AREA 1:		
UNDERGROUND:		
GROUP 1-A	31.29	13.00
GROUP 1	28.82	13.00
GROUP 2	27.56	13.00
GROUP 3	27.23	13.00
GROUP 4	25.09	13.00
GROUP 5	23.95	13.00
SHAFTS, STOPES AND RAISES:		
GROUP 1-A	31.39	13.00
GROUP 1	28.92	13.00
GROUP 2	27.66	13.00
GROUP 3	26.33	13.00
GROUP 4	25.19	13.00
GROUP 5	24.05	13.00
AREA 2:		
UNDERGROUND:		
GROUP 1-A	33.29	13.00
GROUP 1	30.82	13.00
GROUP 2	29.56	13.00
GROUP 3	28.23	13.00
GROUP 4	27.09	13.00
GROUP 5	25.95	13.00
SHAFTS, STOPES AND RAISES:		
GROUP 1-A	33.39	13.00
GROUP 1	30.92	13.00
GROUP 2	29.66	13.00
GROUP 3	28.33	13.00
GROUP 4	27.19	13.00
GROUP 5	26.05	13.00

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

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GROUP 1-A: Tunnel bore machine operator, 20' diameter or more

GROUP 1: Heading shield operator; Heavy-duty repairperson/welder; Mucking machine (rubber tired, rail or track type); Raised bore operator (tunnels); Tunnel mole bore operator

GROUP 2: Combination slusher and motor operator; Concrete pump or pumpcrete gun; Power jumbo operator

GROUP 3: Drill doctor; Mine or shaft hoist

GROUP 4: Combination slurry mixer cleaner; Grouting machine operator; Motor person

GROUP 5: Bit sharpener; Brake person; Combination mixer and compressor (gunite); Compressor operator; Oiler (assistant to engineer); Pump operator; Slusher operator

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	Rates	Fringes
AMADOR COUNTY:		

HEAVY AND HIGHWAY CONSTRUCTION:

POWER EQUIPMENT OPERATORS:

AREA 1:

GROUP 1	32.82	12.70
GROUP 2	31.29	12.70
GROUP 3	29.81	12.70
GROUP 4	28.43	12.70
GROUP 5	27.16	12.70
GROUP 6	25.84	12.70
GROUP 7	24.70	12.70
GROUP 8	23.56	12.70
GROUP 8-A	21.35	12.70

AREA 2:

GROUP 1	34.82	12.70
GROUP 2	33.29	12.70
GROUP 3	31.81	12.70
GROUP 4	30.43	12.70
GROUP 5	29.16	12.70
GROUP 6	27.84	12.70
GROUP 7	26.70	12.70
GROUP 8	25.56	12.70
GROUP 8-A	23.35	12.70

POWER EQUIPMENT OPERATORS - ALL CRANES AND ATTACHMENTS:

AREA 1:

GROUP 1	33.70	12.70
Truck crane oiler	26.73	12.70
Oiler	24.44	12.70
GROUP 2	31.94	12.70

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Truck crane oiler	26.47	12.70
Oiler	24.23	12.70
GROUP 3	30.20	12.70
Truck crane oiler	26.23	12.70
Hydraulic	25.84	12.70
Oiler	23.95	12.70
AREA 2:		
GROUP 1	35.70	12.70
Truck crane oiler	28.73	12.70
Oiler	26.44	12.70
GROUP 2	33.94	12.70
Truck crane oiler	28.47	12.70
Oiler	26.23	12.70
GROUP 3	32.20	12.70
Truck crane oiler	28.23	12.70
Hydraulic	27.84	12.70
Oiler	25.95	12.70
POWER EQUIPMENT OPERATORS - PILEDRIVERS:		
GROUP 1	34.04	12.70
Truck crane oiler	27.06	12.70
Oiler	24.78	12.70
GROUP 2	32.22	12.70
Truck crane oiler	26.81	12.70
Oiler	24.51	12.70
GROUP 3	30.54	12.70
Truck crane oiler	26.52	12.70
Oiler	24.29	12.70
GROUP 4	28.77	12.70
GROUP 5	26.13	12.70
GROUP 6	23.90	12.70
POWER EQUIPMENT OPERATORS - STEEL ERECTORS:		
GROUP 1	34.67	12.70
Truck crane oiler	27.35	12.70
Oiler	25.12	12.70
GROUP 2	32.90	12.70
Truck crane oiler	27.13	12.70
Oiler	24.85	12.70
GROUP 3	31.42	12.70
Truck crane oiler	26.86	12.70
Hydraulic	26.47	12.70
Oiler	24.63	12.70
GROUP 4	29.40	12.70
GROUP 5	28.10	12.70

FOOTNOTE:

Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

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GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine; Crane mounted continuous flight tie back machine; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/boxman; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-Place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt; Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and

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including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Soils & materials tester; Tractor

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination; Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt), Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator; Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader - Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe - trencher)

POWER EQUIPMENT OPERATOR CLASSIFICATIONS
ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and Dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and Dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including

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100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and Dragline up to and including 1 cu. yd.; Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) -under 15 tons; Boom truck or dual purpose A-frame truck, non-rotating, over 15 tons

POWER EQUIPMENT OPERATORS - PILEDRIVER CLASSIFICATIONS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

POWER EQUIPMENT OPERATORS - STEEL ERECTOR CLASSIFICATIONS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled Boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100 tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower Crane

GROUP 3: Crane, 45 tons and under; Self-propelled Boom-type lifting device, 45 tons and under

GROUP 4: Chicago Boom; Forklift, 10 tons and over; Heavy-duty Repair Person/Welder

GROUP 5: Boom Cat

IRON0001N 07/01/2000

Rates Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, MARIN, MODOC,
NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA,

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SISKIYOU, SOLANO, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA
COUNTIES:

IRONWORKERS:

Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

IRON0001W 07/01/2000

	Rates	Fringes
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LASSEN COUNTY:

IRONWORKERS:

Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

FOOTNOTE:

Work at Susanville Federal Prison: \$3.00 per hour additional.

IRON0001X 07/01/2000

	Rates	Fringes
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SONOMA COUNTY:

IRONWORKERS:

Fence erector	25.19	14.575
Ornamental, reinforcing and structural	26.08	14.575

FOOTNOTE:

Work at the U.S. Coast Guard - Two Rock: \$1.00 per hour additional.

LABO0067C 12/01/2000

	Rates	Fringes
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ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MARIN, NAPA, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:

ASBESTOS REMOVAL LABORER	22.07	7.36
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SCOPE OF WORK:

Covers site mobilization; initial site clean-up; site preparation; removal of asbestos-containing materials from walls and ceilings; or from pipes, boilers and mechanical systems only if they are being scrapped; encapsulation, enclosure and disposal of asbestos-containing materials by hand or with equipment or machinery; scaffolding; fabrication of temporary wooden barriers; and assembly of decontamination stations.

LABO0067F 06/26/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MARIN COUNTY:

LABORERS:

Construction specialist group	22.86	7.76
GROUP 1	22.16	7.76
GROUP 1-a	22.38	7.76
GROUP 1-b: see note below		
GROUP 1-c	22.21	7.76
GROUP 1-d: see note below		
GROUP 1-e	22.71	7.76
GROUP 1-f	22.74	7.76
GROUP 2	22.01	7.76
GROUP 3	21.91	7.76
GROUP 4	15.60	7.76

See groups 1-b and 1-d under laborer classifications.

GUNITE LABORERS:

GROUP 1	23.12	7.76
GROUP 2	22.62	7.76
GROUP 3	22.03	7.76
GROUP 4	21.91	7.76

WRECKING WORK:

GROUP 1	22.16	7.76
GROUP 2	21.01	7.76
GROUP 3	15.60	7.76

GARDENERS, HORTICULTURAL AND LANDSCAPE

LABORERS:

New construction	21.91	7.76
Establishment warranty period	15.60	7.76

TUNNEL AND SHAFT LABORERS:

GROUP 1	26.52	7.76
GROUP 2	26.29	7.76
GROUP 3	26.04	7.76
GROUP 4	25.77	7.76
GROUP 5	25.59	7.76
GROUP 6	25.05	7.76

FOOTNOTE:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Masonry and plasterer tender; Cast-in-place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural nozzle operator

GROUP 2: Nozzle operator (including gun person, pot person); Rod person; Ground person

GROUP 3: Rebound person

GROUP 4: Gunitite laborer

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 3: General laborer (includes all clean-up work, loading lumber, loading and burning of debris)

TUNNEL AND SHAFT LABORER CLASSIFICATIONS

GROUP 1: Diamond driller; Ground person; Gunitite and shotcrete nozzle operator

GROUP 2: Rod person; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powder person - heading; Cherry picker operator - where car is lifted; Concrete finisher in tunnel; Concrete screed person; Grout pump operator and pot person; Gunitite & shotcrete gun person & pot person; Header person; High pressure nozzle operator; Miner - tunnel, including top and bottom person on shaft and raise work; Nipper; Nozzle operator on slick line; Sandblaster - pot person

GROUP 4: Steel form raiser and setter; Timber person, retimber person (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powder person - primer house

GROUP 5: Vibrator operator, pavement breaker; Bull gang - muckers, track person; Concrete crew - includes rodding and spreading

GROUP 6: Dump person (any method); Grout crew; Rebound person; Swamper

LABO0067I 06/26/2000

Rates Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN,
MODOC, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA,
SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA
COUNTIES:

LABORERS:

Construction specialist group	21.86	7.76
GROUP 1	21.16	7.76
GROUP 1-a	21.38	7.76
GROUP 1-b: see note below		
GROUP 1-c	21.21	7.76
GROUP 1-d: see note below		
GROUP 1-e	21.71	7.76
GROUP 1-f	21.74	7.76
GROUP 2	21.01	7.76

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3	20.91	7.76
GROUP 4	14.60	7.76

See groups 1-b and 1-d under laborer classifications.

GUNITE LABORERS:

GROUP 1	22.12	7.76
GROUP 2	21.62	7.76
GROUP 3	21.03	7.76
GROUP 4	20.91	7.76

WRECKING WORK:

GROUP 1	21.16	7.76
GROUP 2	21.01	7.76
GROUP 3	14.60	7.76

GARDENERS, HORTICULTURAL AND LANDSCAPE LABORERS:

New construction	21.91	7.76
Establishment warranty period	14.60	7.76

TUNNEL AND SHAFT LABORERS:

GROUP 1	26.52	7.76
GROUP 2	26.29	7.76
GROUP 3	26.04	7.76
GROUP 4	25.77	7.76
GROUP 5	25.59	7.76
GROUP 6	25.05	7.76

FOOTNOTE:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Masonry and plasterer tender; Cast-in-place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator

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GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

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GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

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- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

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GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural nozzle operator

GROUP 2: Nozzle operator (including gun, pot); Ground person

GROUP 3: Rebound

GROUP 4: Guniting laborer

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GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 3: General laborer (includes all clean-up work, loading lumber, loading and burning of debris)

TUNNEL AND SHAFT LABORER CLASSIFICATIONS

GROUP 1: Diamond driller; Ground person; Guniting and shotcrete

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

nozzle operator

GROUP 2: Rod person; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powder person - heading; Cherry picker operator - where car is lifted; Concrete finisher in tunnel; Concrete screed person; Grout pump operator and pot person; Gunitite & shotcrete gun person & pot person; Header person; High pressure nozzle operator; Miner - tunnel, including top and bottom person on shaft and raise work; Nipper; Nozzle operator on slick line; Sandblaster - pot person

GROUP 4: Steel form raiser and setter; Timber person, retimber person (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powder person - primer house

GROUP 5: Vibrator operator, pavement breaker; Bull gang - muckers, track person; Concrete crew - includes rodding and spreading

GROUP 6: Dump person (any method); Grout crew; Rebound person; Swamper

LABO0073A 01/01/2001

	Rates	Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MARIN, MODOC, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		

PLASTERER TENDER	21.10	8.25
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LABO0139B 07/01/2000

	Rates	Fringes
NAPA, SOLANO AND SONOMA COUNTIES:		

BRICK TENDER	23.84	5.31
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FOOTNOTE:

Refractory work where heat-protective clothing is required: \$2.00 per hour additional.

LABO0185C 07/01/2000

	Rates	Fringes
ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		

BRICK TENDER	23.24	5.31
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FOOTNOTE:

Refractory work where heat-protective clothing is required:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 \$2.00 per hour additional.

LABO0291A 07/01/2000	Rates	Fringes
MARIN COUNTY:		
BRICK TENDER	24.84	5.31

FOOTNOTE:
 Refractory work where heat-protective clothing is required:
 \$2.00 per hour additional.

PAIN0008F 07/01/1999	Rates	Fringes
MARIN COUNTY:		
PAINTERS:		
General contracts of \$7 million and under	20.75	6.85
General contracts over \$7 million	23.36	6.85

PAIN0008J 07/01/1999	Rates	Fringes
SONOMA COUNTY:		
PAINTERS:		
General contracts of \$7 million and under	20.50	6.85
General contracts over \$7 million,	24.11	6.85

PAIN0012D 01/01/2001	Rates	Fringes
MARIN, NAPA, SOLANO AND SONOMA COUNTIES:		
SOFT FLOOR LAYER	29.00	11.25

PAIN0016D 07/01/2000	Rates	Fringes
NAPA AND SOLANO COUNTIES:		
PAINTERS:		
Brush and Roller	23.85	9.94
Industrial	24.10	9.94
Industrial Sandblast/Spray	24.10	9.94
Spray/Blasting	24.10	9.94

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Spray Exotic Materials

24.10

9.94

PAIN0016E 08/01/1999

	Rates	Fringes
BUTTE AND COLUSA COUNTIES; GLENN COUNTY; LASSEN COUNTY (west of Hwy. 395, excluding Honey Lake); MARIN, MODOC AND NAPA COUNTIES; PLUMAS AND SHASTA COUNTIES; SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY AND YUBA COUNTIES; EL DORADO COUNTY (west of the Sierra Nevada Mountains); NEVADA COUNTY (west of the Sierra Nevada Mountains); PLACER COUNTY (west of the Sierra Nevada Mountains); SACRAMENTO COUNTY; SIERRA COUNTY (west of the Sierra Nevada Mountains); AND YOLO COUNTY		

DRYWALL FINISHER:

Remodel/tenant improvement work (shopping centers, offices and warehouses where the taping contractor is working directly for the tenant	22.38	8.28
All other work	28.08	9.98

FOOTNOTE:

Clean-up work (limited to clean-up, erection of interior OSHA approved scaffolding, masking, truck and forklift driving, stocking of taping materials, and sanding: 40% of the journeyman rate.

PAIN0016G 01/01/2001

	Rates	Fringes
BUTTE AND COLUSA COUNTIES; EL DORADO COUNTY (west of the Sierra Nevada Mountains); GLENN COUNTY; LASSEN COUNTY (west of Highway 395, excluding Honey Lake); MODOC COUNTY; NEVADA COUNTY (west of the Sierra Nevada Mountains); PLACER COUNTY (west of the Sierra Nevada Mountains); PLUMAS, SACRAMENTO AND SHASTA COUNTIES; SIERRA COUNTY (west of the Sierra Nevada Mountains); SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		

PAINTERS:

Brush, Pot Tender, Roller	20.63	9.04
Sandblaster, Spray, Structural Steel; Swing stage	21.63	9.04

PAIN0016P 03/01/1999

	Rates	Fringes
ALPINE COUNTY:		
DRYWALL TAPER	18.85	7.23
PAINTERS:		
Brush	18.05	7.23
Sandblaster; Waterblaster; Steam cleaning	19.05	7.23

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Work with coal tar and exotic materials	19.80	7.23
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FOOTNOTES:

High time:

Steel construction workers working on erected steel construction, bridges, stacks, towers, tanks and similar structures, from 50 to 100 ft. above ground or water level: to be paid 1/2 hr. per day additional.

Work on such structures from 100 to 180 ft. above ground or water level: to be paid 1 hr. additional.

Work on such structures over 180 ft. above ground or water level: to be paid 2 hrs. per day additional.

Water level is defined as mean water level.

Exterior stage:

Work on exterior stage 4-7 stories: to be paid 1/2 hr. per day additional.

Work on exterior stage 8-11 stories: to be paid 1 hr. per day additional.

Work on exterior stage 12 stories or higher: to be paid 1-1/2 hrs. per day additional.

One story equals 10 ft.

PAIN0169D 07/01/2000

	Rates	Fringes
NAPA COUNTY; SOLANO COUNTY (west of a line defined as follows: Hwy. 80 corridor beginning at the City of Fairfield, including Travis Air Force Base and Suisun City; going north of Manakas Corner Rd., continue north on Suisun Valley Rd. to the Napa County line; Hwy. 80 corridor south on Grizzly Island Rd. to the Grizzly Island Management area):		
GLAZIER	29.35	9.91

PAIN0169H 07/01/2000

	Rates	Fringes
NAPA COUNTY; SOLANO COUNTY (west of a line defined as follows: Hwy. 80 corridor beginning at the City of Fairfield, including Travis Air Force Base and Suisun City; going north of Manakas Corner Rd., continue north on Suisun Valley Rd. to the Napa County line; Hwy. 80 corridor south on Grizzly Island Rd. to the Grizzly Island Management area):		
SHOWER DOOR INSTALLER	23.57	4.60

PAID HOLIDAYS:

New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving, and Christmas Day.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAIN0567A 10/01/1999

	Rates	Fringes
EL DORADO COUNTY (east of the Sierra Nevada Mountains); LASSEN COUNTY (east of Highway 395, beginning at Stacey and including Honey Lake); NEVADA COUNTY (east of the Sierra Nevada Mountains); PLACER COUNTY (east of the Sierra Nevada Mountains); AND SIERRA COUNTY (east of the Sierra Nevada Mountains):		

DRYWALL TAPERS:

Taper	21.28	4.36
Steeplejack - taper, over 40 ft. with open space below	22.78	4.36

PAINTERS:

Brush and roller	20.03	4.36
Sandblaster; Special coating application - brush	20.53	4.36
Spray; Paperhanger	20.78	4.36
Structural steel & steeplejack, 40 ft. open space below (does not include stairways, tube steel, Q-decks, and trust joints worked off power lift in enclosed buildings); Special coating application - spray	20.73	4.36
Special coating application - spray steel	21.28	4.36
Swing stage	22.03	4.36

FOOTNOTE:

A special coating is a coating that requires the mixing of 2 or more products.

PAIN0567H 07/01/2000

	Rates	Fringes
EL DORADO COUNTY (east of the Sierra Nevada Mountains); LASSEN COUNTY (east of Highway 395, beginning at Stacey and including Honey Lake); NEVADA COUNTY (east of the Sierra Nevada Mountains); PLACER COUNTY (east of the Sierra Nevada Mountains) AND SIERRA COUNTY (east of the Sierra Nevada Mountains):		

SOFT FLOOR LAYER	20.00	4.10
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PAIN0718A 07/01/1999

	Rates	Fringes
MARIN AND SONOMA COUNTIES:		
GLAZIER	28.17	9.89

PAIN0767F 07/01/2000

	Rates	Fringes
ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA AND SISKIYOU COUNTIES;		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SOLANO COUNTY (east of a line defined as follows: Hwy. 80 corridor beginning at the City of Fairfield, including Travis Air Force Base and Suisun City; going north of Manakas Corner Rd., continue north on Suisun Valley Rd. to the Napa County line; Hwy. 80 corridor south on Grizzly Island Rd. to the Grizzly Island Management area); SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:

GLAZIER 26.77 8.41

PAID HOLIDAYS:

New Year's Day, Washington's Birthday, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Day after Thanksgiving Day, and Christmas Day.

FOOTNOTE:

Work thirty (30) feet or over free fall: \$0.60 per hour additional.

PAIN1176A 06/26/2000

	Rates	Fringes
PARKING LOT STRIPING/HIGHWAY MARKING:		
GROUP 1	22.84	6.91
GROUP 2	22.45	6.91
GROUP 3	19.51	6.91
GROUP 4	22.15	6.91
Service Person (maintenance and repair of equipment)	13.33	5.87
Parking Lot, Game Court and Playground Installer	19.51	6.91

PARKING LOT STRIPING / HIGHWAY MARKING CLASSIFICATIONS

GROUP 1: STRIPER: Layout and application of painted traffic stripes and marking; hot thermo plastic; tape traffic stripes and markings

GROUP 2: TRAFFIC DELINEATING DEVICE APPLICATOR: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices; includes all related surface preparation (sandblasting, waterblasting, grinding) as part of the application process

GROUP 3: TRAFFIC SURFACE ABRASIVE BLASTER: Removal of traffic lines and markings; preparation of surface for coatings and traffic control devices

GROUP 4: TRAFFIC PROTECTIVE DELINEATING SYSTEMS INSTALLER: Removes, relocates, installs permanently affixed roadside and parking delineation barricades, fencing, guard rail, cable anchor, retaining walls, reference signs, and monument markers

PAIN1237A 06/01/1999

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ALPINE, BUTTE AND COLUSA COUNTIES; EL DORADO COUNTY (west of the Sierra Nevada Mountains); GLENN COUNTY; LASSEN COUNTY (west of Highway 395, beginning at Stacey and including Honey Lake); MODOC COUNTY; NEVADA COUNTY (west of the Sierra Nevada Mountains); PLACER COUNTY (west of the Sierra Nevada Mountains); PLUMAS, SACRAMENTO AND SHASTA COUNTIES; SIERRA COUNTY (west of the Sierra Nevada Mountains); SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:

SOFT FLOOR LAYER	20.57	9.10
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PLAS0001D 06/28/1999		
	Rates	Fringes
CEMENT MASONS:		
Cement mason	22.35	9.46
Swing or slip form scaffolds;		
Mastic, magnesite, gypsum,		
epoxy, polyester, resin and		
all composition	23.10	9.46

PLAS0300C 07/01/2000		
	Rates	Fringes
PLASTERER	23.76	8.50

PLUM0036F 01/01/2001		
	Rates	Fringes
ALPINE COUNTY; AMADOR COUNTY (south of the San Joaquin River);		
BUTTE, COLUSA, GLENN, LASSEN, MODOC, PLUMAS, SHASTA, SIERRA,		
SISKIYOU, SUTTER, TEHAMA, TRINITY AND YUBA COUNTIES:		
PLUMBER	27.79	9.19

PLUM0038B 07/01/1998		
	Rates	Fringes
MARIN AND SONOMA COUNTIES:		
PLUMBERS:		
Work on structures 5 stories		
or less except for new		
additions or remodel of		
prisons or waste water		
treatment plants	27.04	12.86
All other work	36.05	13.93
LANDSCAPE/IRRIGATION FITTER	27.32	10.60

* PLUM0343A 07/01/2000		
	Rates	Fringes
NAPA AND SOLANO COUNTIES:		
PLUMBER AND STEAMFITTER:		
Work on condominiums and apartment		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

houses which are over 4 stories;
 office buildings, schools, and
 other commercial structures for
 which the total plumbing bid
 does not exceed \$250,000. Any
 project bid in phases shall not
 qualify unless the total project
 is less than \$250,000 for the
 plumbing bid and \$250,000 for the
 heating and cooling bid.

Regardless of project size,
 hospitals, jails, institutions
 and industrial projects are not
 included.

	24.75	11.19
All other work	33.75	12.20

FOOTNOTES:

While welding or fitting galvanized material: \$.75 per hour
 additional.

Work from trusses, temporary staging, unguarded structures 35'
 from the ground or water: \$.75 per hour additional.

Work from swinging scaffolds, boatswains chairs or similar
 devices: \$.75 per hour additional.

 PLUM0350A 02/01/2001

Rates Fringes
 EL DORADO COUNTY (Lake Tahoe area only); NEVADA COUNTY (Lake
 Tahoe area only); AND PLACER COUNTY (Lake Tahoe area only):

PLUMBER/PIPEFITTER	23.45	5.75
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 PLUM0355A 07/01/2000

Rates Fringes
 ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC,
 NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA,

SISKIYOU, SOLANO, SUTTER, TEHAMA, TRINITY, YOLO, AND YUBA
 COUNTIES

LANDSCAPE FITTER; UNDERGROUND UTILITY WORKER	22.00	5.55
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 PLUM0447A 07/01/2000

Rates Fringes
 EL DORADO COUNTY (does not include Lake Tahoe area); NEVADA
 COUNTY (does not include Lake Tahoe area); PLACER COUNTY (does
 not include Lake Tahoe area); SACRAMENTO AND YOLO COUNTIES:

PLUMBER and PIPEFITTERS	29.97	10.25
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 PLUM0447B 07/01/2000

Rates Fringes
 AMADOR COUNTY (north of the San Joaquin River):

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HEAVY AND HIGHWAY CONSTRUCTION:

PLUMBER; PIPEFITTER	29.97	10.25

ROOF0081G 08/01/2000		
	Rates	Fringes
MARIN, NAPA, SOLANO AND SONOMA COUNTIES:		
ROOFER	22.80	9.85

ROOF0081H 09/01/1999		
	Rates	Fringes
ALPINE, ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO, AND YUBA COUNTIES:		
ROOFER	18.26	10.03

SFCA0483C 01/01/2001		
	Rates	Fringes
MARIN, NAPA, SOLANO AND SONOMA COUNTIES:		
SPRINKLER FITTER (FIRE)	35.59	11.20

SFCA0669C 04/01/2001		
	Rates	Fringes
ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES:		
SPRINKLER FITTER (FIRE)	28.35	6.00

SHEE0104C 07/01/2000		
	Rates	Fringes
TRINITY COUNTY:		
SHEET METAL WORKER (does not include metal deck and siding):		
Work on multiple family housing units over 4 stories where each individual family apartment is individually conditioned by a separate and independent unit or system; Also, work on any structure other than multiple family housing units, with a total HVAC and architectural sheet metal price of \$125,000		

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or less	16.36	5.33
All other work	21.71	9.39

SHEE0104F 07/01/2000

	Rates	Fringes
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MARIN, NAPA, SOLANO AND SONOMA COUNTIES:

SHEET METAL WORKER :

Work on tenant completion projects providing the contract price is \$220,000 or less; remodel or add-on contracts on existing facilities providing the contract price is \$220,000 or less; architectural sheet metal work of \$100,000 or less; pre-engineered and pre-manufactured siding	31.85	12.06
All other work	37.36	12.81

SHEE0104N 07/01/1999

	Rates	Fringes
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MARIN, NAPA, SOLANO, SONOMA AND TRINITY COUNTIES:

SHEET METAL WORKER:

Metal deck and siding	27.44	11.80
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SHEE0104S 07/01/2000

	Rates	Fringes
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AMADOR, COLUSA, EL DORADO, NEVADA, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES:

SHEET METAL WORKER:

Metal deck and siding	28.44	12.05
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SHEE0162F 07/01/2000

	Rates	Fringes
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AMADOR, COLUSA, EL DORADO, NEVADA, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES:

SHEET METAL WORKER (does not include metal deck and siding)

30.16	10.450
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SHEE0162G 01/01/2001

	Rates	Fringes
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ALPINE COUNTY:

SHEET METAL WORKER:	26.14	10.26
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SHEE0162H 07/01/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Rates Fringes
 AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC,
 NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU,
 SUTTER, TEHAMA, YOLO AND YUBA COUNTIES:

SHEET METAL WORKER:		
Metal deck and siding	30.16	10.50

SHEE0162N 07/01/2000
 Rates Fringes
 BUTTE, GLENN, LASSEN, MODOC, PLUMAS, SHASTA, SIERRA, SISKIYOU AND
 TEHAMA COUNTIES:

SHEET METAL WORKER:	24.13	10.50
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SUCA1002A 07/01/1985
 Rates Fringes

AMADOR COUNTY:		
BUILDING CONSTRUCTION:		
BOILERMAKERS:		
Boilermaker	21.60	4.25
Boilermaker - blacksmith (storage tank erection)	17.25	4.00
Boilermaker - blacksmith (storage tank repair)	16.05	4.00
BRICKLAYER; STONEMASON	17.57	4.04
BRICK TENDER	13.80	3.46
CARPENTERS:		
Carpenter	18.58	6.455
Hardwood floorlayer; Power saw operator; Saw filer; Shingler; Steel scaffold erector and steel shoring	18.73	6.455
Millwright	19.48	7.855
Piledriver, bridge, wharf and dock builder	19.38	9.715
CEMENT MASONS:		
Cement mason	16.91	6.18
Swing or slip form scaffolds; Mastic, magnesite, gypsum, epoxy, polyester, resin and all composition	17.16	6.18
DRYWALL INSTALLERS/LATHERS:		
Drywall installer/lather	18.14	6.485
Drywall stocker, scraper & clean-up	9.07	3.335
ELECTRICIANS:		
Electrician	16.30	3% + 3.38
Cable splicer	17.93	3% + 3.38
Residential electrician	12.50	3.30
Sound and signal technician	15.15	1.50
ELEVATOR CONSTRUCTOR	29.39	3.29 + a
GLAZIER	15.75	6.44

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INSULATOR/ASBESTOS WORKER

Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems 23.85 5.61

IRONWORKERS:

Fence erector 18.01 8.93
Ornamental, reinforcing and structural 18.90 8.93

MARBLE FINISHER 13.92 3.67

MARBLE SETTER AND TERRAZZO WORKER 17.57 4.04

PAINTERS:

Brush 13.39 4.60
Spray 14.14 4.60
Sandblaster; Scaffold; Sheetrock; Structural steel; Swing stage; Taper 13.79 4.60

PARKING LOT STRIPING WORK AND/OR

HIGHWAY MARKERS:

Traffic delineating device applicator 14.83 2.00 + b
Sandblaster; Striper; Wheel stop installer 14.30 2.00 + b
Slurry seal operation:
Applicator operation; Shuttle; Squeegee 12.37 2.00 + b
Compactor, top, traffic control, service and spreader 10.39 2.00 + b
Mixer operator 13.95 2.00 + b
Traffic surface protective

coating applicator 14.48 2.00 + b

PLASTERER 17.36 6.35

PLUMBER; STEAMFITTER:

Amador County (northern half) 19.72 6.71
Amador County (southern half) 22.03 6.35

ROOFERS:

Rofer (slate, tile and composition) 14.90 7.64
Enameler and pitch 17.65 7.64

SHEET METAL WORKER 18.37 12% + 5.06

SOFT FLOOR LAYER 16.01 3.00

SPRINKLER FITTER 21.87 3.23

TERRAZZO FINISHERS:

Base machine operator 16.72 3.95
Terrazzo finisher 16.02 3.95

TILE SETTER 18.92 3.29

TILE FINISHER 10.68 1.65

LABORERS:

GROUP 1 12.11 5.36
GROUP 1-a 12.31 5.36
GROUP 1-b * 5.36
GROUP 1-c 12.16 5.36
GROUP 1-d 12.36 5.36
GROUP 1-e 12.59 5.36

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GROUP 1-f	12.62	5.36
GROUP 2	11.98	5.36
GROUP 3	11.88	5.36
GROUP 4	8.46	5.36

GUNITE LABORERS:

GROUP 1	12.52	5.36
GROUP 2	12.00	5.36
GROUP 3	11.88	5.36

WRECKING WORK:

GROUP 1	12.11	5.36
GROUP 2	11.98	5.36
GROUP 3	11.88	5.36

*See Group 1-b under the group descriptions.

POWER EQUIPMENT OPERATORS:

Area 1:

GROUP 1-a	11.76	9.60
GROUP 1	15.54	9.60
GROUP 2	16.09	9.60
GROUP 3	16.42	9.60
GROUP 4	17.27	9.60
GROUP 5	17.60	9.60
GROUP 6	17.83	9.60
GROUP 7	18.08	9.60
GROUP 8	18.76	9.60
GROUP 9	19.10	9.60
GROUP 10	19.45	9.60
GROUP 10-a	19.64	9.60
GROUP 11	19.91	9.60
GROUP 11-a	21.71	9.60
GROUP 11-b	22.14	9.60
GROUP 11-c	22.65	9.60

Area 2:

GROUP 1-a	13.76	9.60
GROUP 1	17.54	9.60
GROUP 2	18.09	9.60
GROUP 3	18.42	9.60
GROUP 4	19.27	9.60
GROUP 5	19.60	9.60
GROUP 6	19.83	9.60
GROUP 7	20.08	9.60
GROUP 8	20.76	9.60
GROUP 9	21.10	9.60
GROUP 10	21.45	9.60
GROUP 10-a	21.64	9.60
GROUP 11	21.91	9.60
GROUP 11-a	23.71	9.60
GROUP 11-b	24.14	9.60
GROUP 11-c	24.65	9.60

TRUCK DRIVERS:

GROUP 1	16.80	7.04
GROUP 2	16.88	7.04

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GROUP 3	16.90	7.04
GROUP 4	16.91	7.04
GROUP 5	16.92	7.04
GROUP 6	16.93	7.04
GROUP 7	16.95	7.04
GROUP 8	16.97	7.04
GROUP 9	16.98	7.04
GROUP 10	17.00	7.04
GROUP 11	17.01	7.04
GROUP 12	17.05	7.04
GROUP 13	17.06	7.04
GROUP 14	17.07	7.04
GROUP 15	17.10	7.04
GROUP 16	17.11	7.04
GROUP 17	17.12	7.04
GROUP 18	17.14	7.04
GROUP 19	17.15	7.04
GROUP 20	17.16	7.04
GROUP 21	17.21	7.04
GROUP 22	17.24	7.04
GROUP 23	17.25	7.04
GROUP 24	17.34	7.04
GROUP 25	17.35	7.04
GROUP 26	17.38	7.04
GROUP 27	17.40	7.04
GROUP 28	17.44	7.04
GROUP 29	17.45	7.04
GROUP 30	17.48	7.04
GROUP 31	17.54	7.04
GROUP 32	17.47	7.04
GROUP 33	17.69	7.04
GROUP 34	17.79	7.04
GROUP 35	17.84	7.04
GROUP 36	17.99	7.04
GROUP 37	18.14	7.04

FOOTNOTES:

a. Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

b. Employer contributes \$.80 per hour to vacation fund for the first year of employment; 1 year but less than 5 years, 1.13 per hour to vacation fund; 5 years but less than 10 years, 1.48 per hour to vacation fund; over 10 years 1.83 per hour to vacation fund.

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt ironer and raker; Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Chainsaw, faller, logloader and buckler; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete saw; Concrete sander; Cribber and/or shoring; Cut granite curb setter; Form raiser; Slip form; Green Cutter,

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headerboard, hubsetter, aligner; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactors; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials; Lagging, sheeting, whaling, bracing, trenchjacking, handguided lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); Perma curb; Precast-manhole setter; Cast-in-place manhole form setter; Pressure pipe tester; Pavement breaker and spader, including tool grinder; Pipelayer, caulker, bander, pipewrapper, conduit layer, plastic pipelayer, post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry); Rotary Scarifier, multiple head concrete chipper; Davis trencher, 300 or similar type (and all small trenchers); Roto and Ditch Witch; Roto-tiller; Sandblaster, pot, gun, nozzle operator; Signalling and rigging; Tank cleaner; Tree climber; Vibrascreed, bull float in connection with laborers' work; Vibrator; Dri-pak-it machine; High pressure blow pipe (1-1/2-inch. or over, 100 lbs. pressure and over); Hydro seeder and similar type; Laser beam in connection with laborers' work

GROUP 1-a: Joy drill model TWM-2A; Gardener-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Diamond driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Multiple unit drill; Blaster and powder; All work or loading, placing and blasting of all power and explosives of whatever type regardless of method used for such loading and placing; High scaler (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaner receives an additional \$4.00 per day; \$5.00 per day on recently active large diameter sewers or sewer manholes

GROUP 1-c: Burning and welding in connection with laborers' work

GROUP 1-d: Repair track and road beds (cut and cover work of subway after the temporary cover has been placed)

GROUP 1-e: Laborer on general construction work on or in bell hole footings and shaft

GROUP 1-f: Wire winding machine in connection with guniting or shotcrete-aligner

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and digger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Chuck tender; High pressure nozzle operator, adductor; Grout-crew; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Singlefoot, hand held, pneumatic tamper; All

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pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe under 12 inches

GROUP 3: All clean-up work of debris, grounds and buildings including but not limited to street cleaner; Cleaning and washing windows; Construction laborers including bridge and general laborer; Dump; Load spotter; Fire watcher; Street cleaner; Gardener, horticultural and landscape laborer; Jetting; Limber; Brush loader; Piler, maintenance landscape laborer on new construction; Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Fence erector; Guardrail erector; Pavement marker (button setter)

GROUP 4: Brick cleaner; Lumber cleaner

GUNITE CLASSIFICATIONS

GROUP 1: Nozzle operator (including gun, pot); Ground person

GROUP 2: Rebound person

GROUP 3: General laborer

WRECKING WORK CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows, doors, plumbing and electric fixtures)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 3: General laborer (includes all clean-up work, loading lumber, loading and burning of debris)

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1-a: Landscape irrigation trencher, Davis trencher (300 or similar and all small trenchers including all trenching equipment with seats) capacity up to 3 ft. in depth

GROUP 1: Assistant to engineer (Brake; Fire tender; Heavy duty repair tender; Oiler; Deckhand; Signal; Switch; Tar pot fire tender)

GROUP 2: Compressor operator; Concrete mixer (up to and including 1 yd.); Conveyor belt operator (tunnel); Fire tender, hot plant; Hydraulic monitor; Mechanical conveyor (handling building materials); Mixer box operator (concrete plant); Pump operator; Spreader box (with screeds); Tar pot fire tender (power agitated)

GROUP 3: Box operator (bunker); Helicopter radio operator (signal); Motor operator; Locomotive (30 tons or under); Oiler; Ross Carrier (construction job site); Rotomist operator; Screed (except asphaltic concrete paving); Self-propelled, automatically applied concrete curing machine (on streets, highways, airports and canals); Trenching machine (maximum digging capacity 5 ft.

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depth); Tugger hoist, single drum; Truck crane oiler; Boiler tender

GROUP 4: Ballast jack tamper; Ballast regulation; Ballast tamper multipurpose; Box (asphalt plant); Elevator operator (inside); Fork lift or lumber stacker (construction job site); Line master; Material hoist (1 drum); Shuttlecar; Tie spacer; Towermobile

GROUP 5: Compressor operator (over 2); Concrete mixer (over 1 yd.); Concrete pump or pumpcrete gun; Generator; Grouting machine; Pressweld (air operated); Pumps (over 1); Welding machines (powered other than by electricity)

GROUP 6: BLH Lima road pactor or similar; Boom truck or dual-purpose A-frame truck; Concrete batch plant (wet or dry); Concrete saw (self-propelled unit) on streets, highways, airports and canals; Drilling and boring machinery, vertical and horizontal (not to apply to waterliners, wagon drills or jackhammers); Gradesetter, grade checker (mechanical or otherwise); Highline cableway signal; Locomotive (steam of over 30 tons); Maginnis internal full slab vibrator (on airports, highways, canals and warehouses); Mechanical finisher (concrete) (Clary, Johnson, Bidwell Bridge deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt; Portable crusher; Post driver (M-1500 and similar); Power jumbo operator (setting slip forms, etc., in tunnels); Roller (except asphalt); Screed (Barber-Greene and similar) (asphaltic concrete paving); Self-propelled compactor (single engine); Self-propelled pipeline wrapping machine, Perault, CRC, or similar types; Slip form pump (lifting device for concrete forms); Small rubber-tired tractor; Surface heater; Self-propelled power sweeper; Self-propelled tape machine; Auger-type drilling equipment, up to and including 30 ft. depth digging capacity m.r.c.

GROUP 7: Concrete conveyor or concrete pump, truck or equipment mounted (boom length to apply); Concrete conveyor, building site; Deck engineer; Dual drum mixer; Fuller Kenyon pump and similar types; Gantry rider (or similar); Hydra-hammer (or similar); Material hoist (2 or more drums); Mechanical finisher or spreader machine (asphalt, Barber-Greene and similar); Mine or shaft hoist; Mixermobile; Pavement breaker with or without compressor combination; Pipe bending machine (pipelines only); Pipe cleaning machine (tractor propelled and supported); Pipe wrapping machine (tractor propelled and supported); Refrigeration plant; Roller operator (finish asphalt); Self-propelled boom-type lifting device (center mount) (10 tons or less m.r.c.); Self-propelled elevating grader plane; Slusher operator; Small tractor (with boom); Soil tester; Truck-type loader; Welding machine (gasoline or diesel)

GROUP 8: Armor-Coater (or similar); Asphalt plant engineer; Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete batch plant (multiple units); Dozer; Heading shield operator; Heavy-duty repair and/or welder; Ken Seal machine (or similar); Kolman loader; Loader (up to 2 yds.);

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Mechanical trench shield; Portable crushing and screening plant; Push cat; Rubber-tired earth-moving equipment (up to and including 45 cu. yds. "struck" m.r.c.) (Euclids, T-Pulls, DW-10, 20, 21 and similar); Rubber-tired dozer; Self-propelled compactor with dozer; Sheepfoot; Timber skidder (rubber-tired or similar equipment); Tractor-drawn scraper; Tractor; Trenching machine; Tri-batch paver; Tunnel mole boring machine; Woods-Mixer (and other similar Pugmill equipment)

GROUP 9: Canal finger drain digger; Chicago boom; Combination mixer and compressor (gunite); Combination slurry mixer and/or cleaner; Highline cable (5 tons and under); Lull Hi-lift or similar (20 ft. or over); Mucking machine (rubber-tired, rail or track type); Tractor (with boom) (D-6 or larger and similar)

GROUP 10: Boom-type backfilling machine; Bridge crane; Cary-lift (or similar); Chemical grouting machine, truck-mounted; Combination backhoe and loader (up to and including 1/2 cu. yd. m.r.c.); Derrick (2 operators required when swing engine remote from hoist); Derrick barge (except excavation work); Do-mor loader; Adams elegrader; Elevating grader; Heavy rotary drill rig (including caisson foundation work and Euclid loader and similar type); Robbins type drill; Koehring Skooper (or similar); Lift slab machine (Vagtborg and similar types); Loader (2 yds. up to and including 4 yds.); Locomotive, 100 tons (single or multiple units); Multiple engine earthmoving machine (Euclids, dozers, etc.) (no tandem scraper); Pre-stress wire wrapping machine; Reservoir-debris tug (self-propelled floating); Rubber-tired scraper, self-loading (paddle wheels, etc.); Shuttle car (reclaim station); Single-engine scraper over 45 yds.; Soil stabilizer (P & H or equal); Sub-grader (Gurrier or other automatic type); Tractor, compressor drill combination; Track-laying-type earthmoving machine (single engine with tandem scrapers); Train loading station; Trenching machine, multi-engine with sloping attachment, Jeffco or similar; Vacuum cooling plant; Whirley crane (up to and including 25 tons)

GROUP 10-a: Backhoe (hydraulic) (up to and including 1 cu. yd. m.r.c.); Backhoe (cable) (up to and including 1 cu. yd. m.r.c.); Combination backhoe and loader (over 3/4 cu. yd. m.r.c.); Continuous flight tie back auger (crane attached/separate controls); Crane not over 25 tons, Hammerhead and Gantry; Gradall (up to and including 1 cu. yd.); Power blade operator (single engine); Power shovel, clamshell, dragline (up to and including 1 cu. yd. m.r.c.) (long boom pay); Rubber-tired scraper, self-loading (Paddle Wheel, twin engine); Self-propelled boom-type lifting device (center mount); over 10 tons up to and including 25 tons); CMI dual land auto grader SP-30 or similar

GROUP 11: Automatic concrete slip-form paver (Gradesetter, Screed); Automatic railroad car dumper; Canal trimmer with ditching attachment; Cary-lift, Campbell or similar; Continuous flight tie back auger (crane attached, single controls); Crane (over 25 tons up to and including 125 tons); Drott travelift 650-A-1 or similar (45 tons or over); Euclid loader when controlled

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

from the Pullcat; Highline cableway (over 5 tons); Loader (over 4 cu. yds. up to and including 12 cu. yds.); Miller formless M-900 slope paver or similar (grade setter required); Multiple engine scraper (when used as Push Pull); Power blade operator (multi-engine); Power shovel, clamshell, dragline, backhoe, gradall (over 1 cu. yd. up to and including 7 cu. yds. m.r.c., long boom pay); Rubber-tired earthmoving machine (multiple propulsion power units and two or more scrapers) (up to and including 75 cu. yds. struck m.r.c.); Self-propelled compactor boom-type lifting device (center mount) (over 25 tons m.r.c.); Single engine rubber-tired earthmoving machine (with tandem scrapers); Slip form paver (concrete or asphalt) (screed required); Tandem cat; Tower crane mobile (including rail mounted); Trencher (pulling attached shield); Tower cranes, Universal Liebherr and similar types (in the erection, dismantling and moving of equipment); Wheel excavator (up to and including 750 cu. yds. per hour); Whirley crane (over 25 tons); Multi-earthmoving equipment (up to and including 75 cu. yds. "struck" m.r.c.); Truck-mounted hydraulic crane when remote control equipped (over 10 tons up to and including 25 tons)

GROUP 11-A: Band wagon (in conjunction with wheel excavator); Crane (over 125 tons); Loader (over 12 cu. yds. up to and including 18 cu. yds.); Power shovel, clamshell, backhoe, gradall and dragline (over 7 cu. yds. m.r.c.); Rubber-tired multi-purpose earthmoving machine (2 units over 75 cu. yds. "struck" m.r.c.); Wheel excavator (over 750 cu. yds. per hour)

GROUP 11-b: Loader (over 18 yds.)

GROUP 11-c: Operator of helicopter (when used in erection work); Remote-controlled earthmoving equipment

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Bulk cement spreader (with or without auger, under 4 yds. water level); Bus driver; Concrete pump machine; Concrete pump truck (when flat rack truck is used appropriate flat rack rate shall apply); Dump (under 4 yds. water level); Dumpcrete truck (under 4 yds. water level); Dumpster (under 4 yds. water level); Escort or pilot car driver; Nipper truck (when flat rack truck is used appropriate flat rack rate shall apply); Pickup; Skid (debris box, under 4 yds. water level); Team driver; Truck (dry pre-batch concrete mix, under 4 yds. water level)

GROUP 2: Teamster oiler and/or greaser and/or service person

GROUP 3: Bulk cement spreader (with or without auger, 4 yds. and under 6 yds. water level); Dump (4 yds. and under 6 yds. water level); Dumpcrete (4 yds. and under 6 yds. water level); Dumpster (4 yds. and under 6 yds. water level); Skid (debris box, 4 yds. and under 6 yds. water level); Single unit flat rack (2 axle unit); Industrial lift truck (mechanical tailgate); Truck (dry pre-batch concrete mix, 4 yds. and under 6 yds. water level)

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GROUP 4: Jetting truck and water truck (under 2,500 gallons)

GROUP 5: Road oil truck or boot person

GROUP 6: Lift jitney, fork lift

GROUP 7: Transit mix, agitator (under 6 yds.)

GROUP 8: Fuel and/or grease truck driver or fuel

GROUP 9: Vacuum truck, under 3,500 gallons

GROUP 10: Scissor truck; Single unit flat rack (2 axle unit); Industrial lift truck (mechanical tailgate); Small rubber-tired tractor (when used within Teamsters' jurisdiction)

GROUP 11: Jetting truck and water trucks, 2,500 gallons and under 4,000 gallons

GROUP 12: Combination winch truck with hoist; Transit mix agitator (6 yds. and under 8 yds.)

GROUP 13: Vacuum truck, 3,500 gallons and under 5,500 gallons

GROUP 14: Rubber-tired muck car (not self-loaded)

GROUP 15: Bulk cement spreader (with or without auger, 6 yds. and under 8 yds. water level); Dump (6 yds. and under 8 yds. water level); Dumpcrete (6 yds. and under 8 yds. water level); Dumpster (6 yds. and under 8 yds. water level); Skid (debris box, 6 yds. and under 8 yds. water level); Truck (dry pre-batch concrete mix, 6 yds. and under 8 yds. water level)

GROUP 16: A-frame, winch truck; Buggymobile; Jetting and water truck (4,000 gallons and under 5,000 gallons); Rubber-tired jumbo

GROUP 17: Heavy-duty transport (high bed)

GROUP 18: Ross Hyster and similar straddle carrier

GROUP 19: Transit mix agitator (8 yds. through 10 yds.)

GROUP 20: Vacuum truck (5,500 gallons and under 7,500 gallons)

GROUP 21: Jetting truck and water truck (5,000 gallons and under 7,000 gallons)

GROUP 22: Combination boot person and road oiler

GROUP 23: Transit mix agitator (over 10 yds. through 12 yds.)

GROUP 24: Bulk cement spreader (with or without auger, 8 yds. and including 12 yds. water level); Dump (8 yds. and including 12 yds. water level); Dumpcrete (8 yds. and including

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

12 yds. water level); Self-propelled street sweeper with self-contained refuse bin; Skid (debris box, 8 yds. and including 12 yds. water level); Snow Go and/or snow plow; Truck (dry pre-batch concrete mix, 8 yds. and including 12 yds. water level)

GROUP 25: Heavy-duty transport (gooseneck lowbed)

GROUP 26: Transit mix agitator (over 12 yds. through 17 yds.)

GROUP 27: Ammonia nitrate distributor driver and mixer; Bulk cement spreader (with or without auger, over 12 yds. and including 18 yds. water level); Dump (over 12 yds. and including 18 yds. water level); Dumpcrete (over 12 yds. and including 18 yds. water level); Dumpster (over 12 yds. and including 18 yds. water level); Skid (debris box, over 12 yds. and including 18 yds. water level); Truck (dry pre-batch concrete mix, over 12 yds. and including 18 yds. water level)

GROUP 28: Double gooseneck (7 or more axles); Heavy-duty transport tiller

GROUP 29: P.B. or similar type self-loading truck

GROUP 30: Transit mix agitator (over 14 yds. through 16 yds.)

GROUP 31: Bulk cement spreader (with or without auger, over 18 yds. and including 24 yds. water level); Combination dump and dump trailer; Dump (over 18 yds. and including 24 yds. water level); Dumpcrete (over 18 yds. and including 24 yds. water level); Dumpster (over 18 yds. and including 24 yds. water level); Skid (debris box, over 18 yds. and including 24 yds. water level); Transit mix agitator (over 12 yds. through 16 yds.); Truck (dry pre-batch concrete mix, over 18 yds. and including 24 yds. water level)

GROUP 32: Bulk cement spreader (with or without auger, over 24 yds. and including 35 yds. water level); Dump (over 24 yds. and including 35 yds. water level); Dumpcrete (over 24 yds. and including 35 yds. water level); Dumpster (over 24 yds. and including 35 yds. water level); DW 10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTournapulls, Tournarocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers; Skid (debris box, over 24 yds. and including 35 yds. water level); Truck (dry pre-batch concrete mix, over 24 yds. and including 35 yds. water level)

GROUP 33: Truck repair person

GROUP 34: Bulk cement spreader (with or without auger, over 35 yds. and including 50 yds. water level); Dump (over 35 yds. and including 50 yds. water level); Dumpcrete (over 35 yds. and including 50 yds. water level); Dumpster (over 35 yds. and including 50 yds. water level); Skid (debris box, over 35 yds.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

and including 50 yds. water level); Truck (dry pre-batch concrete mix, over 35 yds. and including 50 yds. water level)

GROUP 35: DW 10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTournapulls, Tournarocker, Euclid and similar type equipment when pulling Aqua/Pak or water tank trailers

GROUP 36: Bulk cement spreader (with or without auger, over 50 yds. and under 65 yds. water level); Dump (over 50 yds. and under 65 yds. water level); Dumpcrete (over 50 yds. and under 65 yds. water level); Dumpster (over 50 yds. and under 65 yds. water level); Helicopter pilot (when transporting workers or materials); Skid (debris box, over 50 yds. and under 65 yds. water level); Truck (dry pre-batch concrete mix, over 50 yds. and under 65 yds. water level)

GROUP 37: Bulk cement spreader (with or without auger, 65 yds. and including 80 yds. water level); Dump (65 yds. and including 80 yds. water level); Dumpcrete (65 yds. and including 80 yds. water level); Dumpster (65 yds. and including 80 yds. water level); Skid (debris box, 65 yds. and including 80 yds. water level); Truck (dry pre-batch concrete mix, 65 yds. and including 80 yds. water level)

GROUP 38: Bulk cement spreader (with or without auger, over 80 yds. and including 95 yds. water level); Dump (over 80 yds. and including 95 yds. water level); Dumpcrete (over 80 yds. and including 95 yds. water level); Dumpster (over 80 yds. and including 95 yds. water level); Skid (debris box, over 80 yds. and including 95 yds. water level); Truck (dry pre-batch concrete mix, over 80 yds. and including 95 yds. water level)

TEAM0094B 06/16/1999

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	21.06	11.46
GROUP 2	21.36	11.46
GROUP 3	21.66	11.46
GROUP 4	22.01	11.46
GROUP 5	22.36	11.46

FOOTNOTES:

Articulated dump truck; Bulk cement spreader (with or without auger); Dumpcrete truck; Skid truck (debris box); Dry pre-batch concrete mix trucks; Dumpster or similar type; Slurry truck: Use dump truck yardage rate.

Heater planer; Asphalt burner; Scarifier burner; Industrial lift truck (mechanical tailgate); Utility and clean-up truck: Use appropriate rate for the power unit or the equipment utilized.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump trucks, under 6 yds.; Single unit flat rack (2-axle unit); Nipper truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump truck (when

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

flat rack truck is used appropriate flat rack shall apply); Concrete pump machine; Fork lift and lift jitneys; Fuel and/or grease truck driver or fuelperson; Snow buggy; Steam cleaning; Bus or personhaul driver; Escort or pilot car driver; Pickup truck; Teamster oiler/greaser and/or serviceperson; Hook tender (including loading and unloading); Team driver; Tool room attendant (refineries)

GROUP 2: Dump trucks, 6 yds. and under 8 yds.; Transit mixers, through 10 yds.; Water trucks, under 7,000 gals.; Jetting trucks, under 7,000 gals.; Vacuum trucks, under 7,500 gals.; Single unit (flat rack 3-axle unit); Highbed heavy duty transport; Scissor truck; Rubber-tired muck car (not self-loaded); Rubber-tired truck, jumbo; Winch truck and "A" frame drivers; Combination winch truck with hoist; Road oil truck or bootperson; Buggymobile; Ross, Hyster and similar straddle carrier; Small rubber-tired tractor

GROUP 3: Dump trucks, 8 yds. and including 35 yds.; Transit mixers, over 10 yds.; Water trucks, 7,000 gals. and over; Jetting trucks, 7,000 gals. and over; Vacuum trucks, 7,500 gals. and over; Trucks towing tilt bed or flat bed pull trailers; Lowbed heavy duty transport; Heavy duty transport tiller person; Self-propelled street sweeper with self-contained refuse bin; Boom truck - hydro-lift or Swedish type extension or retracting crane; P.B. or similar type self-loading truck; Tire repairperson; Truck repairperson; Combination bootperson and road oiler; Dry distribution truck (A bootperson when employed on such equipment, shall receive the rate specified for the classification of road oil trucks or bootperson); Ammonia nitrate distributor, driver and mixer; Snow Go and/or plow

GROUP 4: Dump trucks, over 35 yds. and under 65 yds.; Water pulls - DW 10's, 20's, 21's and other similar equipment when pulling Aqua/pak or water tank trailers; Helicopter pilots (when transporting men or materials); DW10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTourneau Pulls, Tournorocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers

GROUP 5: Dump trucks, 65 yds. and over; Holland hauler

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION CO010002 07/06/2001 CO2

Date: July 6, 2001
 General Decision Number **CO010002**

Superseded General Decision No. CO000002

State: **Colorado**

Construction Type:
BUILDING

County(ies):
 EL PASO

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/20/2001
3	05/04/2001
4	07/06/2001

COUNTY(ies):
 EL PASO

	Rates	Fringes
ASBE0028A 01/01/2001		
ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems and asbestos removal)	17.12	4.85

	Rates	Fringes
* BR00007A 05/01/2001		
TILE SETTERS	22.42	5.66

	Rates	Fringes
BR00007B 05/01/2001		
TILE FINISHERS	17.97	5.26

	Rates	Fringes
* CARP0001E 05/01/2001		
CARPENTERS (Including Drywall Hanging, Acoustical Ceiling Installation and Batt Insulation)	19.80	5.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* ELEC0113B 06/01/2001		
	Rates	Fringes
ELECTRICIANS (Includes Low Voltage and Fiberoptic Work)	23.35	3%+8.14
* ENGI0009E 04/23/2001		
	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Backhoe, under 3/4 yd.	19.22	5.17
Backhoe, 3/4 yd. and over	19.37	5.17
Cranes		
50 tons and under	19.37	5.17
51 to 90 tons	19.52	5.17
91 to 140 tons	19.67	5.17
140 tons and over	20.43	5.17
Front End Loader:		
up to and including 6 cy	19.22	5.17
over 6 cubic yards	19.37	5.17
Belt & Elevating	19.67	5.17
Mechanic/Equipment Welder	19.52	5.17
Oiler, Assistant to Engineer	18.52	5.17
LABO0720B 05/01/1999		
	Rates	Fringes
LABORERS, Unskilled	12.20	2.95
PAIN0930A 07/01/2000		
	Rates	Fringes
GLAZIERS	23.64	4.40
PLUM0058A 07/01/2000		
	Rates	Fringes
PIPEFITTERS (Including HVAC) & PLUMBERS (Mechanical Contracts):	23.15	5.85
SFCO0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	26.51	7.50
SHEE0009B 07/01/2000		
	Rates	Fringes
SHEET METAL WORKERS (Includes HVAC Ductwork and Architectural/Roofing)	23.98	7.21
SUCO1014A 09/20/1993		
	Rates	Fringes
BRICKLAYERS/STONEMASONS	14.85	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASONS	13.00	
DRYWALL FINISHERS	12.58	2.44
HOD CARRIERS/BRICKMASON TENDERS	9.20	
IRONWORKERS, Structural	12.30	1.77
LABORERS:		
Cement	8.00	
PAINTERS (Excluding Drywall Finishing)		
Brush	11.16	
Paperhanger	13.25	
Roller	11.81	
POWER EQUIPMENT OPERATORS:		
Blade	14.00	1.35
ROOFERS	13.00	2.62
TRUCK DRIVERS	11.25	

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
 position on a wage determination matter
- * a conformance (additional classification and rate)
 ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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U. S. Department of Labor
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Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION DC010003 07/06/2001 DC3

Date: July 6, 2001
 General Decision Number **DC010003**

Superseded General Decision No. DC000003

State: **WASHINGTON, D.C.**

Construction Type:
BUILDING

County(ies):
 WASHINGTON, D.C.

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	05/04/2001
3	05/25/2001
4	06/01/2001
5	06/15/2001
6	07/06/2001

COUNTY(ies):
 WASHINGTON, D.C.

ASBE0024A 03/01/2001	Rates	Fringes
ASBESTOS WORKERS/HEAT AND FROST INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ASBE0024B 10/01/2000	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* BRDC0001A 04/29/2001

	Rates	Fringes
BRICKLAYERS	22.02	4.83

CARP0132L 05/01/2001

	Rates	Fringes
CARPENTERS (Including Drywall Hanging)	19.77	3.71
PILEDRIVERS	19.65	4.50

ELEC0026C 12/06/1999

	Rates	Fringes
COMMUNICATION TECHNICIANS	19.00	3.49

SCOPE OF WORK:

Includes low voltage construction, installation, maintenance and removal of teledata facilities (voice, data and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, railroad communications, micro waves, V SAT, bypass, CATV, WAN (Wide area networks), LAN (Local area networks) and ISDN (Integrated systems digital network).

WORK EXCLUDED:

The installation of computer systems in industrial applications such as assembly lines, robotics and computer controller manufacturing systems.
 The installation of conduit and/or raceways shall be installed by Inside Wiremen. On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway or conduit not greater than 10 feet.
 Fire alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit.
 All HVAC control work.

ELEC0026T 06/04/2001

	Rates	Fringes
ELECTRICIANS (Excluding Communication Low Voltage Wiring)	27.08	6.69 + 3%

ENGI00770 05/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS (HEAVY AND HIGHWAY CONSTRUCTION):		
GROUP 1	22.29	4.77+a
GROUP 2	21.83	4.77+a
GROUP 3	21.12	4.77+a
GROUP 4	19.54	4.77+a
GROUP 5	15.00	4.77+a
GROUP 6	23.66	4.77+a

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

- GROUP 1: 35 ton cranes & above, tower & climbing cranes, derricks, concrete boom pump, drill rigs (equivalent to L & Double L), mole.
- GROUP 2: Backhoes, cableways, cranes, cherry pickers, elevating graders, hoists, paving mixers, power shovels, tunnel shovels, batch plants, shields, tunnel mining machines, gradalls, front end loaders, 3 1/2 cu. yds. and above, power driven wheel scoops and scrapers (50 cu. yds. struck capacity or above), rail tamper, draglines, boomcat, mucking machines, graders in tunnels, pile driving engines.
- GROUP 3: Front end loaders below 3 1/2 cu. yds, boom trucks, hydraulic backhoes 1/2 yds. capacity or below rubber or track mounted, tug boats, power driven wheel scoops and scrapers, blade graders, motor graders, bulldozers, trenching machines, concrete mixer, speed swing pettibone, ballast regulator, concrete pump, mechanic, welder, mechanic welder, shotcrete machines, Hoeram, locomotive (standard, narrow gauge), tuggers.
- GROUP 4: High lifts above 10 feet, boilers (skelton), asphalt spreaders, bullfloat finishing machines, concrete finishing machines, concrete spreaders, fine graders, air compressors, welding machines, pumps, generators, well points, deep wells, hydraulic pumps, elevators, freeze units, tunnel motorman or dinky operator, roller, conveyors, well drilling machines, grout pump, fireman.
- GROUP 5: Fork lifts, ditch witch, bobcat 1/3 cu. yd. and below, space heaters, sweepers, assistant engineers, oilers.
- GROUP 6: Master mechanic.

- a. PAID HOLIDAYS: New Year's Day, Inaugural Day, Decoration Day, Independence Day, Labor Day, Martin Luther King's Birthday, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

IRON0005A 06/01/2001	Rates	Fringes
IRONWORKERS: Structural, Ornamental and Chain Link Fence	22.53	8.055

IRON0201C 05/01/2001	Rates	Fringes
IRONWORKERS, REINFORCING	21.70	8.40

LABO0074A 06/01/2000	Rates	Fringes
LABORERS: Skilled Laborers	15.40	2.85

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SKILLED LABORERS:

Potmen, power tool operator, small machine operator, concrete labor, signalmen, laser beam operator, water-proofer, open caisson, test pit, underpinning, pier hole and ditches, ladders and overhead strippers, operator of hand derricks, vibrator operators, pipelayers, or tile layers, operators of jackhammers, paving breakers, spaders or any machine that does the same general type of work, scaffold builders, operators of towmasters, scootcretes, buggymobiles and other machines of similar character, operators of tampers and rammers, and other machines that do the same general type of work, whether powered by air, electric or gasoline builders of trestle scaffolds over one tier high and sand blasters.

* LABO0456S 07/01/2001

	Rates	Fringes
LABORERS:		
Mason Tenders, Brick	12.77	2.85
Mortarmen	13.39	2.85

MARB0002C 05/01/2001

	Rates	Fringes
MARBLE & STONE MASONS (INCLUDES pointing, caulking and cleaning of All types of masonry, brick, stone and cement structures; EXCEPT pointing, caulking and cleaning of existing masonry, brick, stone and cement (restoration work)).	24.62	8.25

* MARB0003I 05/01/2001

	Rates	Fringes
MOSAIC and TERRAZZO WORKERS, TILE LAYERS	19.18	7.01

* MARB0003O 05/01/2001

	Rates	Fringes
MARBLE, TILE and TERRAZZO FINISHERS	15.79	6.05

PAIN0051D 06/16/2000

	Rates	Fringes
GLAZIERS		
Contracts over \$2,000,000	21.15	5.64
Contracts \$2,000,000 and under	19.95	5.64

PAIN0051M 06/16/2000

	Rates	Fringes
PAINTERS:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Brush, Roller, Spray and Drywall Finishers	20.23	5.47

PLAS0891A 05/01/2000		
	Rates	Fringes
CEMENT MASONS	19.80	3.895

PLUM0005I 09/01/2000		
	Rates	Fringes
PLUMBERS:		
Apartment Buildings over 4 stories (except hotels)	17.04	5.085
ALL Other Work	25.80	8.035

PLUM0602F 08/01/2000		
	Rates	Fringes
STEAMFITTERS, REFRIGERATION AND AIR CONDITIONING MECHANICS (Including HVAC Pipe Work):		
Light commercial refrigeration and/or air conditioning systems serving a single business; the air conditioning systems shall not total more than 15 tons and the refrigeration system shall not total more than 7 1/2 tons; apartment buildings over 4 stories with individual units not to exceed 5 tons (excluding split units)	13.75	8.105
All other work	25.71	8.105

* SFDC0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	25.20	7.00

* SHEE0100B 07/01/2001		
	Rates	Fringes
SHEET METAL WORKERS (Including HVAC Duct Work)	26.18	7.41

SUDC1003A 04/12/2000		
	Rates	Fringes
LABORERS:		
Unskilled	11.83	2.23
POINTERS, CAULKERS, CLEANERS (INCLUDES pointing, caulking and cleaning of existing		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

masonry, brick, stone and
cement structures (restoration
work); EXCLUDES pointing,
caulking and cleaning of new
or replacement masonry, brick,
stone and cement) 20.00

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.

=====

Unlisted classifications needed for work not included within
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award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

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listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the Branch
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION FL010095 03/02/2001 FL95

Date: March 2, 2001

General Decision Number **FL010095**

Superseded General Decision No. FL000095

State: **Florida**

Construction Type:

BUILDING

County(ies):

OKALOOSA

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

OKALOOSA

SUFL1055A 06/28/1996	Rates	Fringes
BRICKLAYERS/BLOCKLAYER	13.11	
CARPENTERS (Including Drywall Hanging, Batt Insulation, and Acoustical Ceiling Installation)	9.94	
CEMENT MASONS/CONCRETE FINISHERS	10.19	
ELECTRICIANS	9.97	.86
GLAZIERS	11.50	
INSULATORS, HEAT AND FROST	10.46	
LABORERS:		
UNSKILLED	6.84	
MASON TENDERS	7.00	.35
PAINTERS, BRUSH (Including Drywall Finishing)	10.23	
PLUMBERS	9.82	
POWER EQUIPMENT OPERATORS:		
BACKHOE	7.88	
GRADER	9.38	
ROLLER	6.75	

SHEET METAL WORKERS (Including

ATTACHMENT J-11

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HVAC Duct Work) 8.70

TRUCK DRIVERS 6.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION FL010102 03/02/2001 FL102

Date: March 2, 2001
 General Decision Number **FL010102**

Superseded General Decision No. FL000102

State: **Florida**

Construction Type:
BUILDING

County(ies):
 SANTA ROSA

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):
 SANTA ROSA

SUFL1054A 06/28/1996		
	Rates	Fringes
BRICKLAYERS/BLOCKLAYERS	14.00	
CARPENTERS (including Drywall Hanging and Batt Insulation)	10.38	
ELECTRICIANS	11.81	4.56
INSULATORS, HEAT AND FROST	11.50	
LABORERS: UNSKILLED	6.40	
PAINTERS, BRUSH (Including Drywall Finishing)	9.50	
PIPEFITTERS (Including HVAC Pipe Work)	10.40	
PLUMBERS	10.89	
ROOFERS	8.00	
SHEET METAL WORKERS (Including HVAC Duct Work)	10.00	

 WELDERS - Receive rate prescribed for craft performing operation
 to which welding is incidental.
 =====

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION FL010016 04/13/2001 FL16

Date: April 13, 2001
 General Decision Number **FL010016**

Superseded General Decision No. FL000016

State: **Florida**

Construction Type:
BUILDING

County(ies):
 WALTON

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001

COUNTY(ies):
 WALTON

* BOIL0199D 01/01/2001

	Rates	Fringes
BOILERMAKER	21.85	9.24

	Rates	Fringes
SUFL1042A 04/27/1998		
ACOUSTICAL CEILING MECHANIC	10.23	
BRICKLAYER	13.55	
CARPENTER (Including partition installation and excluding acoustical ceiling installation, case and cabinet installation, drywall hanging, formwork, metal stud framing, metal building erection, and softfloor installation)	8.87	
CARPENTER (Formwork only)	8.25	
CASE AND CABINET INSTALLER	9.25	0.84
DRYWALL FINISHER	11.00	
DRYWALL HANGER	10.25	
ELECTRICIAN (excluding HVAC control wiring)	11.15	1.76
GLAZIER	9.81	2.02
HVAC MECHANIC (Including setting unit, ductwork, piping and control wiring)	9.66	
IRONWORKER (Structural)	8.50	0.16
LABORERS (Unskilled)	7.32	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

METAL STUD FRAMER/TECHNICIAN	10.00	
PAINTER (Excluding drywall finishing)	10.00	
PLASTERER	12.65	
PLUMBER (Excluding HVAC piping)	11.12	0.58
POWER EQUIPMENT OPERATOR		
BACKHOE	10.00	
ROOFER	9.77	0.62
SHEETMETAL WORKER (Excluding metal building erection and excluding HVAC duct work	9.42	
SHEETMETAL WORKER (Metal building only)	9.58	
SPRINKLERFITTER (Fire)	10.39	1.19

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010006 03/02/01 GA6

General Decision Number GA010006

Superseded General Decision No. GA000006

State: **Georgia**

Construction Type:
BUILDING

County(ies):

BANKS	HABERSHAM	RABUN
CHATTOOGA	HALL	STEPHENS
DAWSON	HARALSON	TOWNS
FANNIN	JACKSON	UNION
FLOYD	LUMPKIN	WHITE
GILMER	MURRAY	
GORDON	POLK	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

BANKS	HABERSHAM	RABUN
CHATTOOGA	HALL	STEPHENS
DAWSON	HARALSON	TOWNS
FANNIN	JACKSON	UNION
FLOYD	LUMPKIN	WHITE
GILMER	MURRAY	
GORDON	POLK	

ASBE0048C 02/01/2001

Rates	Fringes
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INSULATOR/ASBESTOS WORKER

Includes the application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems

20.35	6.12
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CARP0654D 05/01/1999

Rates	Fringes
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FANNIN, GILMER, MURRAY, TOWNS AND UNION COUNTIES:

MILLWRIGHT	17.71	3.60
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CARP1263C 01/01/2001

Rates	Fringes
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BANKS, CHATTOOGA, DAWSON, FLOYD, GORDON, HABERSHAM, HALL, HARALSON, JACKSON, LUMPKIN, POLK, RABUN, STEPHENS AND WHITE COUNTIES:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MILLWRIGHT 20.00 6.82

PLUM0072J 02/01/2001

	Rates	Fringes
BANKS, DAWSON, FANNIN, HABERSHAM, HALL, HARALSON, JACKSON, LUMPKIN, RABUN, STEPHENS, TOWNS, UNION AND WHITE COUNTIES:		

PLUMBER & PIPEFITTER (includes
HVAC piping):

Work on commercial and institu- tional projects 250,000 sq. ft. and under	20.10	5.84
All other work	23.95	5.84

PLUM0072K 02/01/2001

	Rates	Fringes
CHATTOOGA, FLOYD, GILMER, GORDON, MURRAY AND POLK COUNTIES:		

PLUMBER & PIPEFITTER (includes
HVAC piping):

Work on residential housing, over 4 stories, including housing projects, townhouses and condominiums designed for residential occupancy; refrigeration and air conditioning work on residential projects over 4 stories; and work on all buildings including restaurants, service stations, churches, schools, civic centers, hospitals, shopping centers or malls, motels or hotels, colleges or universities and any and all building additions thereto, including waste water and sewage disposal plants; all commercial refrigeration and air conditioning work; all public utilities including gas, water and sewers in the street and the various services installed up to the building	14.24	5.64
All other work	17.80	5.64

SUGA1047B 05/04/2000

	Rates	Fringes
CARPENTER (includes batt insulation and drywall hanging)	12.77	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASON/CONCRETE FINISHER	12.00	
DRYWALL FINISHER	9.50	
ELECTRICIAN	17.14	3.94
LABORER	8.72	
PAINTER, BRUSH (does not include drywall finishing)	10.48	
POWER EQUIPMENT OPERATORS:		
Backhoe	12.28	.75
Roller	10.00	.16
Dozer	12.94	.63
ROOFER	11.00	
SHEET METAL WORKER (includes HVAC duct work)	17.11	4.89
SPRINKLER FITTER	14.25	1.21
TRUCK DRIVER	12.03	.29

WELDERS - Receive rate prescribed for craft performing operation
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=====

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- * a conformance (additional classification and rate)
ruling

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Regional Office for the area in which the survey was conducted
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010001 03/02/01 GA1

General Decision Number GA010001
 Superseded General Decision No. GA000001

State: **Georgia**

Construction Type:
BUILDING

County(ies):
 CHATTAHOOCHEE MUSCOGEE

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number **Publication Date**
 0 03/02/2001

COUNTY(ies):
 CHATTAHOOCHEE MUSCOGEE

SUGA1001D 11/22/1993

	Rates	Fringes
BRICKLAYER/BLOCKLAYER	12.15	
CARPENTER (including batt insulation, drywall hanging, and metal framing)	9.77	
CEMENT MASON/CONCRETE FINISHER	8.35	
ELECTRICIAN	12.76	2.83
HVAC MECHANIC (duct work only)	12.00	
LABORERS:		
Unskilled	5.65	
Pipelayer	6.50	.13
PAINTER, BRUSH (does not include drywall finishing)	8.38	
PLASTERER	10.00	
PLUMBER (including HVAC piping)	12.31	
POWER EQUIPMENT OPERATORS;		
Backhoe	8.04	
Bulldozer	8.47	
Loader	7.80	

 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
 =====

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010049 03/02/01 GA49

General Decision Number GA010049

Superseded General Decision No. GA000049

State: **Georgia**

Construction Type:
BUILDING

County(ies):
COLUMBIA MCDUFFIE

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):
COLUMBIA MCDUFFIE

SUGA1005B	03/24/2000		
		Rates	Fringes
ACOUSTICAL CEILING MECHANIC		13.60	2.01
BLOCKMASON		16.00	
BRICKLAYER		12.21	
CARPENTER (does not include acoustical ceiling installation, automatic door installation, awning installation, batt and blown insulation, bin and shelf installation, cabinet installation, concrete form work, decking, drapery installation, drywall finishing, drywall hanging, gypsum flooring installation, or partition installation)		11.89	
CARPENTER/CONCRETE FORM WORK ONLY		12.00	
CARPENTER/METAL FRAMING ONLY		13.01	
CAULKER		9.00	
CEMENT MASON		11.57	
DRYWALL FINISHER		13.07	
DRYWALL HANGER		13.60	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELECTRICIAN (does not include low voltage computer wiring, or instrumentation wiring)	15.69	3.46
GLAZIER	12.81	2.03
INSULATOR, BATT & BLOWN	9.00	
IRONWORKER, STRUCTURAL (does not include awning installation or fence erection)	11.33	1.26
LABORER	7.97	
MASON TENDER	9.25	
MILLWRIGHT	13.14	2.58
PIPELAYER	7.00	.32
PAINTER (includes waterproofing; does not include caulking or drywall finishing)	10.95	
PLUMBER (does not include HVAC piping, or the installation of lawn irrigation systems)	14.09	
POWER EQUIPMENT OPERATORS: Backhoe	11.50	
ROOFER	10.28	.35
SHEET METAL WORKER (does not include HVAC duct work, HVAC piping, setting the unit, service or startup)	10.25	
SHEET METAL WORKER/HVAC DUCT WORK ONLY	10.42	.53
SHEET METAL WORKER/HVAC STARTUP ONLY	11.63	.62
SPRINKLER FITTER (FIRE)	13.76	1.42
TILE SETTER	14.34	
TRUCK DRIVER	14.00	.27

 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
 =====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

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Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010036 03/02/01 GA36

General Decision Number GA010036

Superseded General Decision No. GA000036

State: **Georgia**

Construction Type:

BUILDING

County(ies):

APPLING	EMANUEL	MONTGOMERY
ATKINSON	EVANS	PIERCE
BACON	JEFF DAVIS	SCREVEN
BRANTLEY	JEFFERSON	TATTNALL
BULLOCH	JENKINS	TELFAIR
BURKE	JOHNSON	TOOMBS
CANDLER	LAURENS	TREUTLEN
CHARLTON	LIBERTY	WARE
CLINCH	LONG	WAYNE
ECHOLS	MCINTOSH	WHEELER

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

APPLING	EMANUEL	MONTGOMERY
ATKINSON	EVANS	PIERCE
BACON	JEFF DAVIS	SCREVEN
BRANTLEY	JEFFERSON	TATTNALL
BULLOCH	JENKINS	TELFAIR
BURKE	JOHNSON	TOOMBS
CANDLER	LAURENS	TREUTLEN
CHARLTON	LIBERTY	WARE
CLINCH	LONG	WAYNE
ECHOLS	MCINTOSH	WHEELER

CARP0144B 12/01/2000

	Rates	Fringes
JOHNSON, LAURENS, MONTGOMERY, TELFAIR, TREUTLEN AND WHEELER COUNTIES:		

MILLWRIGHT	17.50	5.06
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CARP0256B 07/01/2000

	Rates	Fringes
BULLOCH, CANDLER, EVANS, LIBERTY, LONG, SCREVEN, TATTNALL AND TOOMBS COUNTIES:		

MILLWRIGHT:

Commercial work	15.13	4.60
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Industrial work	16.00	4.60
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FOOTNOTE:

Work with creosote materials, acid or other strong chemicals; work with cofferdams and tunnels; swinging scaffolds and boatswain chair, 25 ft. or higher; chimneys, silos or towers which are independent of the building and which are 25 ft. or higher; clip forms; erecting and dismantling scaffolds 35 ft. or higher; operation of radial arm saws: \$.50 per hour additional. If handrails and/or safety belts are provided by the contractor, the premium pay will not be applicable.

CARP0283A 10/01/1999		
	Rates	Fringes
BURKE, EMANUEL, JEFFERSON AND JENKINS COUNTIES:		
MILLWRIGHT	16.40	4.13

CARP0865D 09/16/2000		
	Rates	Fringes
APPLING, ATKINSON, BACON AND BRANTLEY COUNTIES; CHARLTON COUNTY (does not include the city of Folkston); CLINCH, ECHOLS, JEFF DAVIS, MCINTOSH, PIERCE, WARE AND WAYNE COUNTIES:		
MILLWRIGHTS:		
General contracts under \$3,000,000	16.75	4.14
General contracts \$3,000,000 and over	17.60	4.17

CARP2411C 06/19/2000		
	Rates	Fringes
CHARLTON COUNTY (City of Folkston):		
MILLWRIGHT	16.65	4.19

SUGA1011C 05/10/2000		
	Rates	Fringes
BRICKLAYER	15.00	
CARPENTER (does not include batt insulation or drywall hanging)	13.31	
CABINET INSTALLER	8.83	
CEMENT MASON/CONCRETE FINISHER	12.04	
DRYWALL HANGER	13.64	
ELECTRICIAN	12.29	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HVAC MECHANIC (does not include HVAC duct work)	11.94	
INSULATION, BATT	7.00	
IRONWORKER, STRUCTURAL	10.13	
LABORER	7.95	
MASON TENDER	8.00	
PAINTER, BRUSH (does not include drywall finishing)	12.44	
PIPEFITTER (does not include HVAC piping)	15.27	3.20
PLUMBER (does not include HVAC piping)	13.69	
POWER EQUIPMENT OPERATORS:		
Backhoe	11.97	
Roller	8.54	
ROOFER	10.00	
SHEET METAL WORKER (includes HVAC duct work)	10.45	
TRUCK DRIVER	8.70	

WELDERS - Receive rate prescribed for craft performing operation
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- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010002 03/02/01 GA2

General Decision Number GA010002

Superseded General Decision No. GA000002

State: **Georgia**

Construction Type:
BUILDING

County(ies):
RICHMOND

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):
RICHMOND

SUGA1002B	03/24/2000		
		Rates	Fringes
ACOUSTICAL CEILING MECHANIC		13.60	2.01
BLOCK MASON		16.00	
BRICKLAYER		12.21	
CARPENTER (does not include acoustical ceiling installation, automatic door installation, awning installation, batt and blown insulation, bin and shelf installation, concrete form work, decking, drapery installation, drywall finishing, drywall hanging, or partition installation)		12.14	
CARPENTER/CONCRETE FORM WORK ONLY		12.00	
CARPENTER/METAL FRAME WORK		13.01	
CAULKER		9.00	
CEMENT MASON		11.79	
DRYWALL FINISHER		13.07	
DRYWALL HANGER		13.60	
ELECTRICIAN (does not include low voltage computer wiring, or instrumentation work)		15.97	3.72

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GLAZIER	13.11	2.03
IRONWORKER, STRUCTURAL (does not include awning installation or fence erection)	11.51	1.64
LABORER	8.06	
MASON TENDER	9.25	
PAINTER (includes waterproofing; does not include caulking or drywall finishing)	11.41	
PIPELAYER	7.00	.32
PLUMBER (does not include HVAC piping, or the installation of lawn irrigation systems)	13.20	
POWER EQUIPMENT OPERATORS: Backhoe	11.25	
ROOFER	10.28	.35
SHEET METAL WORKER (does not include HVAC duct work, HVAC piping, setting the unit, service or startup)	10.25	
SHEET METAL WORKER/HVAC DUCT WORK ONLY	10.04	
SPRINKLER FITTER (FIRE)	13.67	1.03
TILE SETTER	14.34	
TRUCK DRIVER	14.00	.79

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010087 04/06/01 GA87

General Decision Number GA010087

Superseded General Decision No. GA000087

State: **Georgia**

Construction Type:

BUILDING

County(ies):

FULTON

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001

COUNTY(ies):

FULTON

ASBE0048G	02/01/2001		
		Rates	Fringes
INSULATOR/ASBESTOS WORKER			
Includes the application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems		20.35	6.12

ASBE0207B	08/01/2000		
		Rates	Fringes
ASBESTOS REMOVAL WORKER/ HAZARDOUS MATERIAL HANDLER			
Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not		11.00	3.25

BRGA0033C	01/01/2001		
		Rates	Fringes
MARBLE, TERRAZZO AND TILE SETTER		18.57	4.88

CARP0225E	01/01/2001		
		Rates	Fringes
CARPENTERS:			
Interior specialist (includes acoustical ceiling installation and drywall hanging)		13.24	2.605
Stocker/scrapper		9.46	1.98

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Carpenter (includes batt insulation);		
Marble, terrazzo and tile finisher		
	18.91	3.23
Pilderiver		
	19.06	3.23
Piledriver/welder		
	19.21	3.23

CARP1263B	01/01/2001		
		Rates	Fringes
MILLWRIGHT		20.00	6.82

ELEC0613A	03/01/2001		
		Rates	Fringes
ELECTRICIANS:			
Electrician		23.68	26%
Cable splicer		24.58	26%

FOOTNOTES:

Work on bar joists, walk logs, exposed steel and swinging scaffolds when the surface the worker stands or sits on exceeds twenty-five (25) feet above solid floor and the worker is subject to free fall: \$1.00 per hour additional.

Work of a similar nature above fifty (50) feet: \$3.00 per hour additional.

ELEV0032A	01/01/2001		
		Rates	Fringes
ELEVATOR MECHANIC		22.065	7.195

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0926G	07/01/2000		
		Rates	Fringes
POWER EQUIPMENT OPERATORS:			
Crane		19.13	4.83

IRON0387J	08/01/2000		
		Rates	Fringes
IRONWORKER, ORNAMENTAL & STRUCTURAL		20.32	6.00

LABO0438B	01/01/2001		
		Rates	Fringes
LABORER		11.57	2.10

FOOTNOTE:

Work on chimneys or stacks, isolated: \$.25 per hour additional.

PAIN1940A	10/01/2000		
		Rates	Fringes
GLAZIER		17.50	3.11

FOOTNOTE:

Paid holidays: Thanksgiving Day, Christmas Day, New Year's Day,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

National Memorial Day, July 4th and Labor Day; if the employee works the day before and the day after the holiday.

PLAS0148A	01/01/2001	
	Rates	Fringes
CEMENT MASON	17.32	3.52

PLUM0072E	02/01/2001	
	Rates	Fringes
PLUMBER; PIPEFITTER (includes HVAC work):		
Work on commercial and institutional projects 250,000 sq. ft. and under	20.10	5.84
All other work	23.95	5.84

ROOF0136A	07/01/2000	
	Rates	Fringes
ROOFERS:		
Roofer	16.20	2.10
Slate and tile; Swing stage and bosun chair	17.35	2.10

* SFGA0669A	04/01/2001	
	Rates	Fringes
SPRINKLER FITTER	20.90	6.50

SHEE0085C	02/01/2000	
	Rates	Fringes
SHEET METAL WORKERS (includes HVAC duct work):		
Work on projects of 100,000 sq. ft. or less (does not include work on new construction projects which involve facilities that produce or process a product, nor does it include maintenance work on such facilities) (includes HVAC duct work)	17.08	7.12
All other work (includes HVAC duct work)	21.35	7.25

FOOTNOTE:		
Work on swinging stages, boatswains chairs or scaffolds, booms, or scissors lifts over 50 ft. high: \$0.75 per hour additional.		

SUGA1054A	03/01/1990	
	Rates	Fringes
BRICK & BLOCK MASON	13.00	
DRYWALL FINISHER	11.67	
IRONWORKER, REINFORCING	13.80	
PAINTER, BRUSH & SPRAY (excluding drywall finishing)	11.12	
POWER EQUIPMENT OPERATORS:		
Backhoe	12.29	2.16

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Front end loader	11.85	2.56
SOFT FLOOR LAYER	9.67	1.35
TRUCK DRIVER	8.51	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010034 03/02/01 GA34

General Decision Number GA010034

Superseded General Decision No. GA000034

State: **Georgia**

Construction Type:

BUILDING

County(ies):

BRYAN

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

BRYAN

PLUM0188B 08/01/2000

	Rates	Fringes
PLUMBER & PIPEFITTER	17.40	4.42

FOOTNOTE:

Work performed at a nuclear plant site: 20% additional.

SUGA1010A 05/01/1981

	Rates	Fringes
AIR CONDITIONING & HEATING MECHANIC	6.75	
BRICKLAYER	10.50	
CARPENTER	10.30	
CEMENT MASON	8.14	
ELECTRICIAN	12.75	
GLAZIER	6.17	
INSULATOR/ASBESTOS WORKER	11.24	
IRONWORKER	11.13	
LABORERS:		
Unskilled	5.48	
Asphalt raker	5.50	
Mason tender	6.10	
Air tool operator	6.20	
Mortar mixer	6.34	
LATHER	7.65	
PAINTERS:		
Brush & roller	8.10	
Spray	8.85	
POWER EQUIPMENT OPERATORS:		
Asphalt distributor	8.97	
Backhoe	10.24	
Crane	10.57	
Fork lift	9.18	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Gradeall	8.67	
Mechanic	9.87	
Paver	6.60	
Roller	5.50	
ROOFER	6.50	
SHEET METAL WORKER	10.47	.57
SOFT FLOOR LAYER	9.25	
SPRINKLER FITTER	14.57	3.23
STONE MASON	9.91	
TILE SETTER	10.00	
TILE FINISHER	7.15	.50
TRUCK DRIVER	6.25	

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4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION GA010004 04/13/01 GA4

General Decision Number GA010004

Superseded General Decision No. GA000004

State: **Georgia**

Construction Type:

BUILDING

County(ies):

CHATHAM

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001

COUNTY(ies):

CHATHAM

* BOIL0026A 01/01/2001

	Rates	Fringes
BOILERMAKER	21.85	9.24

ELEC0508A 09/01/2000

	Rates	Fringes
ELECTRICIANS:		
Instrumentation technician	19.75	4-1/4%+3.70
Nuclear work	19.00	4-1/4%+3.70
Work performed in any facility that manufactures, produces or processes a product from raw materials to finished goods or products (e.g., chemical plants, petroleum facility, bulk loading, operators, electrical utilities, paper mills)	18.05	4-1/4%+3.70
All other work	15.10	4-1/4%+3.70

FOOTNOTES:

Work on towers, chimneys and transmitter antennas (does not include the construction of pole and steel tower transmission lines): 1-1/2 times the straight rate of pay.

Work performed while wearing breathing apparatus: 15% per hour additional.

IRON0709A 01/01/2001

	Rates	Fringes
IRONWORKERS, REINFORCING & STRUCTURAL:		
General contracts of \$5,000,000 or more, or work performed on a		

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nuclear facility	19.45	3.87
General contracts below \$5,000,000	17.30	3.87

SUGA1004A 03/01/1988

	Rates	Fringes
ASPHALT RAKER	6.75	
BRICKLAYER	11.00	
CARPENTER (excluding drywall hanger & insulator)	10.04	
CEMENT MASON	9.95	
LABORER	5.53	
MASON TENDER	5.50	
PAINTER (excluding drywall finisher)	9.54	
PIPEFITTER	12.78	
PLASTERER	9.00	
PLUMBER	11.09	
ROOFER	7.03	
SHEET METAL WORKER	8.29	
TRUCK DRIVER	6.75	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION HI010001 07/06/2001 HI1

Date: July 6, 2001
 General Decision Number **HI010001**

Superseded General Decision No. HI000001

State: **Hawaii**

Construction Type:

- BUILDING**
- DREDGING
- HEAVY
- HIGHWAY
- RESIDENTIAL

County(ies):

STATEWIDE

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS
 (consisting of single family homes and apartments up to and including 4 stories); **HEAVY AND HIGHWAY CONSTRUCTION PROJECTS AND DREDGING**

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001
2	05/04/2001
3	07/06/2001

COUNTY(ies):

STATEWIDE

ASBE0132A 08/30/1998

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	26.50	14.89

* BOIL0204A 10/01/1998

	Rates	Fringes
BOILERMAKERS	26.25	13.76

* BRHI0001A 09/04/2000

	Rates	Fringes
BRICKLAYERS; Caulkers; Cement Block Layers; Cleaners; Pointers;		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

and Stonemasons	25.77	14.83

* BRHI0001B 09/04/2000		
	Rates	Fringes
TERRAZZO WORKERS:		
Terrazzo Workers	25.77	14.83
Terrazzo Base Grinders	23.96	14.83
Terrazzo Floor Grinders and Tenders	22.41	14.83

* BRHI0001C 09/04/2000		
	Rates	Fringes
MARBLE MASONS	25.77	14.83

BRHI0001D 03/01/1999		
	Rates	Fringes
TILE LAYERS (CERAMIC)	25.37	12.19
TILE LAYER FINISHERS (CERAMIC)	22.01	12.19

CARP0745A 02/26/2001		
	Rates	Fringes
CARPENTERS:		
Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers; and Transit and/or Layout Man	29.10	15.35
Millwrights and Machine Erectors	29.35	15.35
Power Saw Operators (2 H.P. and over)	29.25	15.35

CARP0745B 02/26/2001		
	Rates	Fringes
DRYWALL HANGERS	29.35	15.32
LATHERS	29.35	15.32

* ELEC1186A 02/11/2001		
	Rates	Fringes
ELECTRICIANS:		
Electricians	30.60	5.85+30.6%
Technicians	31.52	5.85+30.6%
Cable Splicers	33.66	5.85+30.6%

* ELEC1186B 02/11/2001		
	Rates	Fringes
LINE CONSTRUCTION:		
Linemen	30.60	5.85+30.6%
Technicians	31.52	5.85+30.6%

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Heavy Equipment Operators	27.54	5.85+30.6%
Cable Splicers	33.66	5.85+30.6%
Groundmen; Truck Drivers	22.95	5.85+30.6%

ELEV0126A 10/04/1999

	Rates	Fringes
ELEVATOR MECHANICS	34.65	6.935+a+b

- a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.
- b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving Day and Christmas Day.

ENGI0003I 09/04/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS (Includes All Types of Paving):		
GROUP 1	26.89	14.18
GROUP 2	27.00	14.18
GROUP 3	27.17	14.18
GROUP 4	27.44	14.18
GROUP 5	27.75	14.18
GROUP 6	28.40	14.18
GROUP 7	28.72	14.18
GROUP 8	28.83	14.18
GROUP 9	28.94	14.18
GROUP 9A	29.17	14.18
GROUP 10	29.23	14.18
GROUP 10A	29.38	14.18
GROUP 11	29.53	14.18
GROUP 12	29.89	14.18
GROUP 12A	30.25	14.18

WAGE RATES FOR TUNNEL WORK:

GROUP 1	27.19	14.18
GROUP 2	27.30	14.18
GROUP 3	27.47	14.18
GROUP 4	27.74	14.18
GROUP 5	28.05	14.18
GROUP 6	28.70	14.18
GROUP 7	29.02	14.18
GROUP 8	29.13	14.18
GROUP 9	29.24	14.18
GROUP 9A	29.47	14.18
GROUP 10	29.53	14.18
GROUP 10A	29.68	14.18
GROUP 11	29.83	14.18
GROUP 12	30.19	14.18
GROUP 12A	30.55	14.18

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose "A" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines ("Bank" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose "A"Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less

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than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loader and Adams Elegrader; Dozer (D-7 or equal); Wheel and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar); Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple

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propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds., "struck" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds "struck"m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebherr, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

HELICOPTER WORK:

Pilot of Helicopter	31.06	14.18
Co-Pilot of Helicopter	30.89	14.18
Airborne Hoist Operator for Helicopter	30.75	14.18

DIVERS (AQUA LUNG) (SCUBA):

Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)	41.58	14.18
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)	50.95	14.18
Stand-by Diver (Aqua Lung) (Scuba)	31.06	14.18

DIVERS (OTHER THAN AQUA LUNG):

Diver (Other than Aqua Lung)	50.95	14.18
Stand-By Diver (Other than Aqua Lung)	32.20	14.18
Diver Tender (Other than Aqua Lung)	29.17	14.18

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.35
Booms and/or Leads of 130 feet up to but not including 180 feet	0.50
Booms and/or Leads of 180 feet up to and including 250 feet	0.90
Booms and/or Leads over 250 feet	1.35

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.00
Booms over 250 feet	1.50

ENGI0003K 09/04/2000

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	27.17	14.18+a
GROUP 2	27.44	14.18+a
GROUP 3	27.75	14.18+a
GROUP 4	28.40	14.18+a
GROUP 5	28.72	14.18+a
GROUP 6	28.83	14.18+a

TRUCK DRIVERS CLASSIFICATIONS

- GROUP 1: Utility, flatbed, or similar.
- GROUP 2: Dump, 8 yards, and under (water level); water truck, up to and including 2,000 gallons.
- GROUP 3: Tandem Dump, over 8 yards (water level); water truck (over 2,000 gallons).
- GROUP 4: Semi-trailer, rock cans, or semi-dump.
- GROUP 5: Slip-in or pup.
- GROUP 6: End dumps (unlicensed); tractor trailer (hauling equipment).

a. An employee who has completed 1 but less than 2 years service- 1 week's paid vacation; 2 but less than 10 years service - 2 weeks paid vacation; 10 but less than 15 years service - 3 weeks paid vacation; and 15 or more years service - 4 weeks paid vacation.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0003L 09/04/2000

	Rates	Fringes
DREDGING:		
CLAMSHELL OR DIPPER DREDGES:		
GROUP 1	29.89	14.18
GROUP 2	29.23	14.18
GROUP 3	28.83	14.18
GROUP 4	27.17	14.18

DREDGING CLASSIFICATIONS

- GROUP 1: Clamshell or Dipper Operator.
- GROUP 2: Mechanic or Welder; Watch Engineer.
- GROUP 3: Barge Mate; Deckmate.
- GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGES:

GROUP 1	29.53	14.18
GROUP 2	29.38	14.18
GROUP 3	29.23	14.18
GROUP 4	29.17	14.18
GROUP 5	28.83	14.18
GROUP 6	28.72	14.18
GROUP 7	27.17	14.18

DREDGING CLASSIFICATIONS

- GROUP 1: Leverman.
- GROUP 2: Watch Engineer (steam or electric).
- GROUP 3: Mechanic or Welder.
- GROUP 4: Dozer Operator.
- GROUP 5: Deckmate.
- GROUP 6: Winchman (Stern Winch on Dredge).
- GROUP 7: Deckhand (can operate anchor scow under direction of Deckmate); Fireman; Leveeman; Oiler.

DERRICKS:

GROUP 1	29.89	14.18
GROUP 2	29.23	14.18
GROUP 3	28.83	14.18
GROUP 4	27.17	14.18

DERRICK CLASSIFICATIONS

- GROUP 1: Operators (Derricks, Piledrivers and Cranes).
- GROUP 2: Saurman Type Dragline (over 5 cubic yards).
- GROUP 3: Deckmate; Saurman Type Dragline (up to and including 5 yards).
- GROUP 4: Deckhand, Fireman, Oiler.

BOAT OPERATORS:

Master Boat Operator	29.53	14.18
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Boat Operator	29.38	14.18
Boat Deckhand	27.17	14.18

IRON0625A 09/04/2000

	Rates	Fringes
IRONWORKERS	25.50+a	18.66

a. Employees will be paid \$.50 per hour more while working in tunnels and coffer dams; \$1.00 per hour more when required to work under or are covered with water (submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.

LABO0368A 09/04/2000

	Rates	Fringes
LABORERS:		
GROUP 1	22.45	10.74
GROUP 2	20.85	10.74
GROUP 3	23.45	10.74
GROUP 4	22.95	10.74
GROUP 5	21.95	10.74
GROUP 6	14.85	6.49
MASON TENDERS	22.70	10.74

LABORERS CLASSIFICATIONS

GROUP 1: Asbestos Removal Worker (EPA certified workers); Asphalt Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning, Welding, Signalling, Choke Setting, and Rigging in connection with Laborers' work (except demolition); Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Curer (impervious membrane and form oiler); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion

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joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off; Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Curbing, Concreting, and Asphalt; Curing of Concrete, mortar, and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Driller (Track, Diamond Core, and Wagon); Driller (Joydrill Model TWM-2A, Gardner Denver DH-143 and similar type drills); Driller (Mechanical) (not covered elsewhere) (including multiple unit); (Ingersoll-Rand DM45E/DM50E/LM-100/LM-600C, Gardner-Denver SCH2500/SCH3500BV, Furukawa HCR-C300, Tamrock Drilltech CHA800/DHH 850 Tamrock Commando) (similar and replacement equipment thereof); Drilling for blasting; Operation of all rock and concrete drills and Jack Hammers, including handling, carrying, laying out of hose; (Ingersoll-Rand DM45E/DM50E/LM-100/LM-600C), Gardner-Denver SCH2500/SCH3500 BV, Furukawa HCR-C300, Tamrock Drilltech CHA 800/DHH 850/Tamrock Commando) (similar and replacement equipment thereof); Drilling (Mechanical) on the site or along the right-of-way as well as access roads, reservoirs, including areas adjacent or pertinent to construction sites); Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Fence and/or Guardrail Erector; Forklift (9 ft. and under); Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers' AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir, or heat welding for sewer pipes); Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Installation of Gilsulate 500XR; Jackhammer Operator; Jacking of slip forms; All semi and unskilled work connected therewithin; Laying of all multi-cell conduit or multi-purpose pipe; Magnesite and Mastic Workers (Wet or Dry)(including mixer operator); Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzleman (Sandblasting and/or Water Blasting); Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe Accessment in place, bolting and lining up of sectional metal or other pipe including corrugated pipe; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas, air,

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or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Sandblaster (Nozzleman) handling, placing and operation of nozzle; Scaffold Erector; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers' work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

GROUP 2: Air Blasting; Appliance Handling (job site) (after delivery and unloading in storage area); Asphalt Laborer; Asphalt Plant Laborer; Backfill work connected with the installation of Gilsulate 500XR; Backfilling, Grading and all other labor connected therewith; Boring Machine; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Cemetary Laborers; Chainman, Rodmen, and Grade Markers; Cleaning and Clearing of all debris; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Cleanup of Grounds and

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Buildings (other than "Light Clean-Up") (Janitorial Laborer); Clean-up of right-of-way; Clearing and slashing of brush or trees by hand or mechanical cutting; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Cribbers, Shorer, Lagging, Sheeting, and Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, burning or cutting, breaking away, cleaning and removal of all masonry, wood or metal fixtures for salvage or scrap, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Driller, Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Excavation, Preparation of street ways and bridges; Fence and/or Guardrail Erector; Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, establishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; Garbage and Debris Handlers and Cleaners; Gas, Pneumatic, and Electric Tools, not listed Group 1 (except Rototiller); General Clean-up: sweeping, cleaning, washdown, wiping of construction facility, and equipment (other than "Light Clean-up" [Janitorial] Laborer); General Excavation and Grading (all labor connected therewith); Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction; General Laborer; Guniting Operator; Junk Yard Laborers (same as Salvage Yard); Landscape Nursery Laborers; Laser Beam "Target Man" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterponds, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signalling from truck, conveyance or stockpile; Material Yard Laborers; Parks and Sports arenas and all recreational center employees; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer (including Hod Carrier); Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Removal of surplus material;

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Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheeting Piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Shipwright; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Stripper (Asphalt, Concrete or other Paved Surfaces); Tagging and Signaling of all building materials into high-rise units; Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking, stripping, dismantling and handling concrete forms an false work.

GROUP 3: Licensed Powdermen.

GROUP 4: Gunnite Operator; High Scaler (working suspended), Pipelaying.

GROUP 5: Window Washer (Outside) (Working from bosun's chair and/or cable-suspended scaffold or work platform).

GROUP 6: Light Clean-Up.

LABO0368B	10/02/2000		
		Rates	Fringes
LANDSCAPE AND IRRIGATION LABORERS:			
Group 1		17.01	5.37
Group 2		17.51	5.37
Group 3		14.01	5.37

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and

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Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing of landscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons).

GROUP 2: Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in connection with such Landscaping and Irrigation work. This includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities

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Commission Type 5 and/or type 7 license, sit-down type and "gang" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not "take" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and pruning, including the use of "weed eaters", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and "gang" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the performance of other types of gardening, yardman, and horticultural-related work.

LABO0368C 09/04/2000

	Rates	Fringes
UNDERGROUND LABORERS:		
GROUP 1	21.45	10.74
GROUP 2	22.95	10.74
GROUP 3	23.45	10.74
GROUP 4	24.45	10.74
GROUP 5	24.80	10.74
GROUP 6	25.05	10.74
GROUP 7	25.50	10.74

GROUP 1: Watchmen; Change House Attendant
 GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen
 GROUP 3: Chucktenders and Cabetenders; Powderman (Prime House); Vibratorman, Pavement Breakers
 GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Headman; Cherry Pickerman (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line);

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Sandblater-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Gunite or Shotcrete Nozzleman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

PAIN1791A	01/01/2001	
		Rates Fringes
PAINTERS:		
Brush	25.55	17.85
Sandblaster; Spray	26.05	17.85

PAIN1889A	01/01/2001	
		Rates Fringes
GLAZIERS	23.07	17.30

* PAIN1926B	02/25/2001	
		Rates Fringes
SOFT FLOOR LAYERS	22.90	15.50

PAIN1944A	01/01/2000	
		Rates Fringes
TAPERS	31.25	9.85

PLAS0630A	03/01/1999	
		Rates Fringes
PLASTERERS	25.91	12.19

PLAS0630B	09/04/2000	
		Rates Fringes
CEMENT MASONS:		
Cement Masons	25.47	14.83
Trowel Machine Operators	25.62	14.83

* PLUM0675A	07/01/2001	
		Rates Fringes
PLUMBERS, PIPEFITTERS, STEAMFITTERS & SPRINKLER FITTERS	29.80	15.60

ROOF0221A	05/02/1999	
		Rates Fringes
ROOFERS	25.00	11.46

SHEE0293A	08/27/2000	
		Rates Fringes

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SHEET METAL WORKERS	32.47	13.11
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SUHI1001A 09/15/1997

	Rates	Fringes
DRAPERY INSTALLERS	13.60	1.20

SUHI2001A 09/15/1997

	Rates	Fringes
FENCE ERECTORS (Chain Link)	9.33	1.65

RIGGERS; WELDERS - Receive rate prescribed for craft performing operation to which rigging or welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION IL010007 07/06/2001 IL7

Date: July 6, 2001
General Decision Number **IL010007**

Superseded General Decision No. IL000007

State: **Illinois**

Construction Type:
BUILDING
RESIDENTIAL

County(ies):
MADISON ST CLAIR

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) & **RESIDENTIAL CONSTRUCTION PROJECTS** (consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/06/2001
3	05/04/2001
4	07/06/2001

COUNTY(ies):
MADISON ST CLAIR

ASBE0999C 01/01/1994		
	Rates	Fringes
ASBESTOS WORKERS	18.99	2.76

BOIL0363A 01/01/2001		
	Rates	Fringes
BOILERMAKERS	24.20	11.33

BRIL0002C 08/01/2000		
	Rates	Fringes
BRICKLAYERS	24.47	9.20

CARP0295D 08/01/2000		
	Rates	Fringes
MADISON COUNTY:		

CARPENTERS:

BUILDING CONSTRUCTION:

CARPENTERS, MILLWRIGHTS,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PILEDRIVERS & LATHERS, SOFT FLOOR LAYERS	23.26	8.98
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CARP0500B 08/01/2000	Rates	Fringes
ST. CLAIR COUNTY		

BUILDING

CARPENTERS, MILLWRIGHTS, PILEDRIVERS & LATHERS, SOFT FLOOR LAYERS	23.26	8.98
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CARP1111D 08/01/2000	Rates	Fringes
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RESIDENTIAL CONSTRUCTION:

MADISON COUNTY:

CARPENTERS

Projects of housing units not to exceed three levels (including the level below ground if these are living quarters). that are 2 buildings or less. Housing units shall include single dwellings, duplexes, row houses, garden houses, and four family apartment buildings and condominiums.

CARPENTERS	14.63	8.98
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Projects of 4 story housing units, buildings constructed of steel and concrete construction, apartment complexes(3 buildings or more), apartment buildings that have commercial stores, offices, or professional quarters in conjunction with commercial ventures such as nursing homes motels, etc

CARPENTERS	23.26	8.98
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CARP1111E 08/01/2000	Rates	Fringes
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RESIDENTIAL CONSTRUCTION:

ST. CLAIR COUNTY:

CARPENTERS

Projects of housing units not to exceed three levels (including the level below ground if these are living quarters). that are 2 buildings or less. Housing units shall include single dwellings, duplexes, row houses, garden houses, and eight family apartment buildings and condominiums.

CARPENTERS	21.76	8.98
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Projects of 4 story housing units, buildings constructed of steel and concrete construction, apartment complexes(3 buildings or more), apartment buildings that have commercial stores, offices, or professional quarters in conjunction with commercial

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ventures such as nursing homes motels, etc.

CARPENTERS	23.26	8.98
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ELEC0309E 08/30/2000

	Rates	Fringes
MADISON (EXCLUDES ALTON & VIC.) & ST. CLAIR COUNTIES		
ELECTRICIANS	27.01	36%

ELEC0649C 09/01/2000

	Rates	Fringes
RESIDENTIAL CONSTRUCTION:		
MADISON (ALTON-GODFREY, ROXANA, & HARTFORD AREA) COUNTY		
ELECTRICIANS	15.25	4.81

BUILDING CONSTRUCTION:

MADISON (ALTON & VIE TWPS):

ELECTRICIANS	23.56	7.89+3.3%
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ELEV0003B 07/01/2000

	Rates	Fringes
MADISON & ST. CLAIR COUNTIES		
ELEVATOR CONSTRUCTORS:		
Elevator mechanics	27.765	6.935+a

FOOTNOTE:

a-Employer contributes 8% of basic hourly rate for 5 years service and 6% basic hourly rate for 6 months to 5 years service, as Vacation Pay Credit.

PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day.

ENGI0520C 08/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS		
GROUP 1:	23.50	12.10
GROUP 2:	18.34	12.10
GROUP 3:	17.95	12.10
GROUP 4:	17.62	12.10
GROUP 5:	24.05	12.10
GROUP 6:	24.35	12.10
GROUP 7:	24.63	12.10

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Bosts; Pilderivers; Crane-Type Backhoes; Asphalt Plant Operator; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers & Pumps; Bulk Cement Plants; Cement Pumps; Derrick Type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; Endloaders or Forklifts; Power Blade or Elevating Graders; Winch Cats; Boom or Winch Trucks or Boom Tractors, Pipewrapping or Painting Machines; Drills (other than derrick type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors Two; Water Pumps Regardless of Size; Welding Machines Two; Siphons or Jets Two; Winch Heads or Apparatus Two; Light Plants Two; Tractors Regardless of size Straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution Operator on Trucks; Winch Heads or Apparatuses (1); Excavators; Mobile Track air and Heater (two to five); Heavy Equipment Greaser and all other operators not listed below.

GROUP 2: Air Compressor One; Water Pump Regardless of size one; Welding Machine One; 1-Bag Mixer one; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One.

GROUP 3: Firemen on whirlies and Asphalt Spreader Oilers; Heavy Equipment Oilers; Truck Cranes; Monigans; Large (over 65 ton rate capacity); Concrete Plant Oiler and Black Top Plant Oiler.

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on Equipment with Booms, Including Jibs, One Hundred Feet and Over; And Less than 150 Feet.

GROUP 6: Operators on Equipment with Booms, Including Jibs, 150 Feet and over, and Less Than 200 Feet.

GROUP 7: Operators on Equipment with booms, Including Jibs, 200 Feet and over; Tower Cranes and Whirley Cranes.

IRON0392D	08/01/2000		
		Rates	Fringes
IRONWORKER		22.07	11.18

LABO0044B	08/01/2000		
		Rates	Fringes
MADISON (COLLINSVILLE) COUNTY			
LABORER			
GROUP 1		18.50	10.40

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GROUP 2	18.75	10.40
GROUP 3	19.00	10.40
GROUP 4	20.025	10.40

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0100E 08/01/2000		
	Rates	Fringes
ST CLAIR (East St Louis & Vicinity) COUNTY		
LABORERS:		
GROUP 1	21.10	8.20
GROUP 2	21.35	8.20
GROUP 3	21.36	8.20
GROUP 4	21.60	8.20
GROUP 5	22.10	8.20
GROUP 6	22.625	8.20

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers

GROUP 2 - Gunnite or sandblasting work, working with creosote; burning and or cutting with torch; work in cased wells; working with mastic or other coal tar derivatives doping and wrapping of pipe.

GROUP 3 - Work on bottom of sewer trenches.

GROUP 4 - Plasterer Tenders

GROUP 5 - Work on smoke stacks.

GROUP 6 - Dynamite men.

LABO0179C 08/01/2000		
	Rates	Fringes
MADISON (EDWARDSVILLE, LIVINGSTON, AND MARINE) COUNTY:		

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LABORER

GROUP 1	19.60	9.30
GROUP 2	19.85	9.30
GROUP 3	20.10	9.30
GROUP 4	21.125	9.30

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0197B 08/01/2000		
	Rates	Fringes
ST. CLAIR COUNTY (BELLEVILLE)		
HOD CARRIERS	23.30	6.10

LABO0218C 08/01/1997		
	Rates	Fringes
MADISON (ALTON) COUNTY		

LABORER

GROUP 1	19.20	7.20
GROUP 2	19.45	7.20
GROUP 3	19.70	7.20
GROUP 4	20.725	7.20

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work

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performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0338C	08/01/2000		
		Rates	Fringes
MADISON (Wood River) COUNTY			
LABORER			
GROUP	1	19.55	9.35
GROUP	2	19.80	9.35
GROUP	3	20.05	9.35
GROUP	4	21.075	9.35

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0382A	08/01/1997		
		Rates	Fringes
MADISON (TROY & VICINITY) COUNTY			
LABORER			
GROUP	1	20.25	6.55
GROUP	2	20.50	6.55
GROUP	3	20.75	6.55
GROUP	4	21.10	6.55

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Working on Bottom of Sewer Trenches; using burning or cutting torches; working with mastic; working with creosote or

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

other harmful material; using chain saws; high work of 25 + feet.

GROUP 3 - Brick Mason Tenders and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0397A 08/01/2000

	Rates	Fringes
MADISON (GRANITE CITY, MADISON, VENICE, NAMEOKI, & MITCHELL) COUNTY		
LABORERS		
Group 1	21.10	8.20
Group 2	21.375	8.20
Group 3	21.60	8.20
Group 4	21.625	8.20
Group 5	22.425	8.20

LABORER DEFINITIONS:

GROUP 1-General Laborers

GROUP 2-Cutting, burning and welding.

GROUP 3-Brick Mason Tenders and Plasterer Tenders

GROUP 4-Oxygen Lancing

GROUP 5-Dynamite men.

LABO0454A 08/01/2000

	Rates	Fringes
ST. CLAIR (E. ST. LOUIS & VICINITY) COUNTY:		
HOD CARRIERS	24.75	4.65

LABO0459B 08/01/2000

	Rates	Fringes
ST. CLAIR (BELLEVILLE, FREEBURG, NEW ATHENS & VICINITY) COUNTY:		
LABORER		
GROUP 1	19.70	9.20
GROUP 2	19.95	9.20
GROUP 3	20.20	9.20
GROUP 4	21.225	9.20

LABORER CLASSIFICATION

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or

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sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0474C 08/01/2000

	Rates	Fringes
MADISON (GLEN CARBON) COUNTY:		
LABORER		
GROUP 1	19.10	9.80
GROUP 2	19.35	9.80
GROUP 3	18.60	9.80
GROUP 4	20.625	9.80

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0670C 08/01/2000

	Rates	Fringes
ST CLAIR (O'FALLON, SCOTT AFB, SHILOH, LEBANON & VICINITY) COUNTY		
LABORERS:		
GROUP 1	21.15	8.15
GROUP 2	21.40	8.15
GROUP 3	21.65	8.15
GROUP 4	22.00	8.15

LABORERS CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1: General Laborers

GROUP 2: Work on Bottom of Sewer Trenches; using burning or cutting torches; working with mastic; working with creosote or other harmful material; using chain saws; high work of 25+ feet.

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0674B	08/01/2000		
		Rates	Fringes
MADISON (St. Jacob) COUNTY:			
LABORER			
GROUP			
GROUP	1	27.65	1.25
GROUP	2	27.90	1.25
GROUP	3	28.15	1.25
GROUP	4	29.175	1.25

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0680C	08/01/2000		
		Rates	Fringes
MADISON (Highland) COUNTY:			
LABORER			
GROUP			
GROUP	1	19.10	9.80
GROUP	2	19.35	9.80
GROUP	3	19.60	9.80
GROUP	4	20.625	9.80

LABORER CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1 - General Laborers.

GROUP 2 - Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3 - Brick Mason and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0742C	08/01/2000		
		Rates	Fringes
ST. CLAIR (MUSCOUTAH) COUNTY			
LABORER			
GROUP			
GROUP 1		19.60	9.70
GROUP 2		19.85	9.70
GROUP 3		20.10	9.70
GROUP 4		20.45	9.70

LABORER CLASSIFICATIONS

GROUP 1 - General Laborers.

GROUP 2 - Working on Bottom of Sewer Trenches; using burning or cutting torches; working with mastic; working with creosote or other harmful material; using chain saws, high work of 25+ feet.

GROUP 3 - Brick Mason Tenders and Plasterer Tenders

GROUP 4 - Dynamite and Powder Men.

PAIN0058E	05/01/2000		
		Rates	Fringes
PAINTERS			
COMMERCIAL:			
BRUSH		21.82	6.60
SPRAYING BLASTING			
STEAM CLEANING		23.82	6.60
TAPER		22.07	6.60
RESIDENTIAL:			
BRUSH		20.69	6.60

PAIN0513F	11/01/2000		
		Rates	Fringes

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GLAZIERS	25.23	15.34
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PLAS0090C 08/01/2000

	Rates	Fringes
CEMENT MASON	23.10	9.70
PLASTERERS	22.50	9.85
TERRAZZO WORKERS	17.55	
TILE SETTERS	13.98	2.905
TILE SETTERS' FINISHERS	11.70	1.605

* PLUM0101B 07/01/2001

	Rates	Fringes
ST. CLAIR (BELLEVILLE, FAYETTEVILLE, FREESBURG, LEBANON, LENZBERG, MASCOUTAH, MARISSA, MILLSTADT, NEW ATHENS, SCOTT AFB, SHILOH, SMITHON, ST. LIBORY, SUMMERFIELD, & SWANSEE) COUNTY:		
PLUMBERS & PIPEFITTERS	27.90	6.55

* PLUM0360B 07/01/2001

	Rates	Fringes
MADISON (GRANITE CITY & SOUTHERN 1/2 OF COUNTY) & ST. CLAIR (E. ST. LOUIS & VIC.) COUNTIES		
PLUMBERS	26.95	7.55

PLUM0439A 01/01/2000

	Rates	Fringes
MADISON (Grant City and Southern 1/2 of County) and St Clair (East St. Louis and Vic) Counties		
STEAMFITTERS	24.05	9.15

PLUM0553B 07/01/2000

	Rates	Fringes
MADISON (North of East - West which is one mile North of South line of Chouteau, Edwardsville, Oak, Marine, and Saline Townships) COUNTY		
PLUMBERS & PIPEFITTERS	27.45	5.80 + A

FOOTNOTES: A. 4 HOURS PD. FOR CHRISTMAS EVE IF HOLIDAY FALLS ON MONDAY THRU FRIDAY.

ROOF0002E 03/01/2000

	Rates	Fringes
ROOFERS:		

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ROOFER	22.30	6.45
KETTLEMAN	20.10	6.45

SFIL0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	29.04	6.00

SHEE0268B 07/01/1999		
	Rates	Fringes
SHEET METAL WORKERS(Residential-defined as any single family dwelling or multiple family housing unit where each individual family apartment is individually conditioned by a separate and independent unit or system. Multiple family units limited to three levels of tenants,)	14.14	5.72
SHEET METAL WORKERS (All other work)	23.57	8.84

TEAM0001I 05/01/2001		
	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	23.19	4.36+A
GROUP 2	23.59	4.36+A
GROUP 3	23.79	4.36+A
GROUP 4	24.04	4.36+A
GROUP 5	24.79	4.36+A

FOOTNOTE FOR TRUCK DRIVERS:
A: \$85.00 per week

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Drivers on 2 Axle Trucks Hauling Less Than 9 Tons. Air Compressor and Welding Machines & Brooms, Including Those Pulled by Separate Units, Warehousemen, Greasers & Tiremen, Pickup Trucks When Hauling Material, Tools, or Men to and from & on the Job Site, & Fork Lifts up to 6,000 LB. Capacity.

GROUP 2: Two or Three Axle Trucks Hauling more than 9 tons But Hauling less than 16 Ton, A-Frame Winch Trucks, Hydrolift Trucks, or Similar Equipment When Used For Transportation Purposes. Fork Lifts over 6,000 LB. Capacity, Winch Trucks, & Four Axle Combination Units.

GROUP 3: Two, Three or Four Axle Trucks Hauling 16 tons or more, Drivers on Water Pulls. Five Axle or more Combination Units.

GROUP 4: Lowboy & Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
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Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the Branch
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION IL010001 07/06/2001 IL1

Date: July 6, 2001

General Decision Number **IL010001**

Superseded General Decision No. IL000001

State: **Illinois**

Construction Type:

BUILDING

County(ies):

ADAMS	JO DAVIESS	OGLE
BOND	KNOX	PIKE
BOONE	LA SALLE	PUTNAM
BROWN	LEE	RANDOLPH
BUREAU	LIVINGSTON	ROCK ISLAND
CALHOUN	LOGAN	SCHUYLER
CARROLL	MACOUPIN	SCOTT
CASS	MARSHALL	STARK
CLINTON	MASON	STEPHENSON
DE KALB	MCDONOUGH	WARREN
FULTON	MCLEAN	WASHINGTON
GREENE	MENARD	WHITESIDE
HANCOCK	MERCER	WINNEBAGO
HENDERSON	MONROE	WOODFORD
HENRY	MONTGOMERY	
JERSEY	MORGAN	

BUILDING PROJECTS (does not include single-family homes and apartments up to and including four stories, and also does not include landscape projects for BOONE and DEKALB COUNTIES).

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/06/2001
3	05/04/2001
4	06/01/2001
5	06/29/2001
6	07/06/2001

COUNTY(ies):

ADAMS	JO DAVIESS	OGLE
BOND	KNOX	PIKE
BOONE	LA SALLE	PUTNAM
BROWN	LEE	RANDOLPH
BUREAU	LIVINGSTON	ROCK ISLAND
CALHOUN	LOGAN	SCHUYLER
CARROLL	MACOUPIN	SCOTT
CASS	MARSHALL	STARK
CLINTON	MASON	STEPHENSON
DE KALB	MCDONOUGH	WARREN
FULTON	MCLEAN	WASHINGTON
GREENE	MENARD	WHITESIDE

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HANCOCK	MERCER	WINNEBAGO
HENDERSON	MONROE	WOODFORD
HENRY	MONTGOMERY	
JERSEY	MORGAN	

ASBE0017H 06/01/2000

	Rates	Fringes
BUREAU, DE KALB, LA SALLE, LEE, LIVINGSTON, MC LEAN, MARSHALL, PUTNAM, STARK, & WOODFORD COUNTIES		

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems	28.25	12.27
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HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not	20.20	9.02
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ASBE0019C 06/01/2000

	Rates	Fringes
BOONE OGLE STEPHENSON & WINNEBAGO COUNTIES:		

INSULATORS/ASBESTOS WORKERS

Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems	25.76	9.22
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* ASBE0081C 06/01/2001

	Rates	Fringes
CARROLL, HANCOCK, HENDERSON, HENRY, JO DAVIESS, KNOX, MC DONOUGH, MERCER, ROCK ISLAND, WARREN, & WHITESIDE COUNTIES		

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems	24.11	10.05
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HAZARDOUS MATERIAL HANDLER:

(INCLUDES PREPARATION HANDLER STRIPPING REMOVAL SCRAPPING, VACUUMING, BAGGING, AND DISPOSAL OF ALL INSULATION MATERIALS WHETHER THEY CONTAIN ASBESTOS OR NOT, FROM MECHANICAL SYSTEMS)	15.75	3.55
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* BOIL0001D 07/01/2001

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
BOONE, DE KALB, & WINNEBAGO COUNTIES		
BOILERMAKERS	33.19	4.65+14%

	Rates	Fringes
BOIL0060A 09/01/1997		
BUREAU, CARROLL, FULTON, HANCOCK, HENDERSON, HENRY, JO DAVIESS, KNOX, LA SALLE, LEE, LIVINGSTON, LOGAN, MC DONOUGH, MC LEAN, MARSHALL, MASON, MERCER, OGLE, PUTNAM, ROCK ISLAND, SCHUYLER, STARK, STEPHENSON, WARREN, WHITESIDE, & WOODFORD COUNTIES		
BOILERMAKERS	22.70	8.36

	Rates	Fringes
BOIL0363C 01/01/2001		
ADAMS, BOND, BROWN, CALHOUN, CASS, CLINTON, GREENE, JERSEY, MACOUPIN, MENARD, MONROE, MONTGOMERY, MORGAN, PIKE, RANDOLPH, & WASHINGTON COUNTIES		
BOILERMAKERS	24.20	11.33

	Rates	Fringes
BRIL0002A 08/01/2000		
BOND, CALHOUN, CLINTON, JERSEY, MACOUPIN (STAUNTON & MT. OLIVE), MONTGOMERY, MONROE, & WASHINGTON COUNTIES		
BRICKLAYERS	24.47	9.20

	Rates	Fringes
BRIL0003A 05/01/2001		
FULTON, HENDERSON, KNOX, MARSHALL, WARREN, & WOODFORD COUNTIES		
BRICKLAYERS	23.97	7.80

	Rates	Fringes
BRIL0004D 05/01/1997		
MENARD COUNTY		
BRICKLAYERS, CAULKERS, CLEANERS, POINTERS, & STONEMASONS	21.52	5.05

	Rates	Fringes
BRIL0005A 05/01/1997		
ADAMS, BROWN, CASS, GREENE, HANCOCK, MACOUPIN (Except Staunton & Mt. Olive), MORGAN, MCDONOUGH, PIKE, SCHUYLER, & SCOTT COUNTIES		
BRICKLAYERS, MARBLE, TERRAZZO WORKERS & TILE LAYERS	19.44	5.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRIL0006B	06/01/2001		
		Rates	Fringes
BRICKLAYERS		24.10	8.60

BRIL0006C	06/01/2000		
		Rates	Fringes
TILE LAYERS		21.35	7.90

BRIL0006D	06/01/2000		
		Rates	Fringes
TILE MASONS (FINISHERS)		19.55	6.40

BRIL0007A	05/01/2001		
		Rates	Fringes
MERCER & ROCK ISLAND COUNTIES			
BRICKLAYERS, CAULKERS, CLEANERS, POINTERS & STONEMASONS		22.70	7.80

BRIL0019B	06/01/1997		
		Rates	Fringes
MCLEAN COUNTY			
BRICKLAYERS, CAULKERS, CLEANERS, POINTERS & STONEMASONS		20.28	7.07

BRIL0027A	10/01/1995		
		Rates	Fringes
DE KALB COUNTY			
BRICKLAYERS		24.08	6.41

BRIL0031A	06/01/2001		
		Rates	Fringes
BOONE, CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, WHITESIDE, & WINNEBAGO COUNTIES			
BRICKLAYERS		26.25	8.36

BRIL0032A	05/01/1997		
		Rates	Fringes
LOGAN & MASON COUNTIES			
BRICKLAYERS, CEMENT BLOCK LAYERS, CAULKERS, CLEANERS, MARBLE MASONS, PLASTERERS, POINTERS, STONE MASONS, TERRAZZO WORKERS, TILE LAYERS		21.52	5.05

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRIL0072B 05/01/1997

	Rates	Fringes
RANDOLPH COUNTY		
BRICKLAYERS, CAULKERS, CLEANERS, POINTERS & STONEMASONS	20.56	5.80

CARP0016A 05/01/2001

	Rates	Fringes
MACOUPIN (N 1/3) & MONTGOMERY (N 1/3, INCLUDING WAGGONER, STANDARD CITY, & NORTH THEREOF) COUNTIES:		
CARPENTERS	21.66	10.09
PILEDRIVERS	22.16	10.09
MILLWRIGHTS	23.45	8.76

CARP0016B 05/01/2001

	Rates	Fringes
MENARD COUNTY		
CARPENTERS	21.66	10.09
PILEDRIVERS	22.16	10.09
MILLWRIGHTS	23.45	8.76

CARP0063G 05/01/2001

	Rates	Fringes
LIVINGSTON AND MCLEAN COUNTIES:		
CARPENTERS, LATHERS	23.35	9.09
PILEDRIVERMEN	23.85	9.09

CARP0166A 05/01/2001

	Rates	Fringes
HENDERSON, HENRY, MERCER, & ROCK ISLAND COUNTIES:		
CARPENTERS; LATHERS; CARPET, LINOLEUM & SOFT TILE LAYERS	22.64	8.41
PILEDRIVERS	22.64	8.41

CARP0183B 05/01/2001

	Rates	Fringes
KNOX & WARREN COUNTIES		
CARPENTERS; LATHERS	23.09	9.44
PILEDRIVERS	23.59	9.44

CARP0183J 05/01/2001

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
WOODFORD COUNTY:		
CARPENTERS	23.04	9.44
PILEDRIVERS	23.54	9.44

	Rates	Fringes
CARP0189A 05/01/2001		
ADAMS COUNTY		
CARPENTERS, LATHERS	21.56	10.19
PILEDRIVERMEN	22.06	10.19

	Rates	Fringes
CARP0195A 06/01/2001		
BUREAU, LA SALLE, MARSHALL, PUTNAM, & STARK COUNTIES		
CARPENTERS	22.41	10.15
PILEDRIVERS	22.66	10.15

	Rates	Fringes
CARP0295A 05/01/1994		
GREENE (South of Apple Creek) COUNTY:		
CARPENTERS, LATHERS, and SOFT FLOOR LAYERS	18.39	6.17
MILLWRIGHTS	19.23	5.99
PILEDRIVERS	18.89	6.17

	Rates	Fringes
CARP0295F 08/01/1997		
BOND, CALHOUN, & JERSEY COUNTIES:		
CARPENTERS, LATHERS, MILLWRIGHTS, & SOFT FLOOR LAYERS	21.41	7.34

	Rates	Fringes
CARP0500D 08/01/1997		
CLINTON (EXCLUDING BROOKSIDE TWP.), MONROE, RANDOLPH, & WASHINGTON (IRVINGTON TWP.) COUNTIES:		
CARPENTERS:		
CARPENTERS, MILLWRIGHTS, PILEDRIVERS & LATHERS, SOFT FLOOR LAYERS	21.41	7.34

	Rates	Fringes
CARP0640A 08/01/2000		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ALEXANDER, FRANKLIN, HARDIN, MASSAC, JACKSON, PERRY, POPE,
JOHNSON, GALLATIN, PULASKI, SALINE, UNION, & WILLIAMSON COUNTIES

CARPENTERS, MILLWRIGHTS, PILEDRIVERS & SOFT FLOOR LAYERS	20.56	8.98
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DIVERS (Receive 1 1/2 times
Carpenter's rate plus fringe
benefits and \$25.00 per day for
equipment)

CARP0644B 05/01/2001		
	Rates	Fringes
HANCOCK (Eastern 1/3) & MCDONOUGH COUNTIES		

CARPENTERS, LATHERS	22.94	9.54
PILEDRIVERS	23.44	9.54

SCHUYLER COUNTY (North of Illinois HWY #101 to U.S. HWY# 67,
South of U.S. HWY #67 1/4 mi. from this point to the Southwest
corner of Fulton County)

CARPENTERS, LATHERS, and SOFT FLOOR LAYERS	18.59	6.17
MILLWRIGHTS	19.23	5.99
PILEDRIVERS	19.09	6.17

CARP0644G 05/01/2001		
	Rates	Fringes
FULTON & MASON COUNTIES:		

CARPENTERS, LATHERS	22.94	9.54
PILEDRIVERS	23.44	9.54

CARP0644H 05/01/2001		
	Rates	Fringes
LOGAN COUNTY:		

CARPENTERS, LATHERS	22.94	9.54
PILEDRIVERS	23.44	9.54

CARP0725B 05/01/2001		
	Rates	Fringes
MACOUPIN (Southern 2/3) & MONTGOMERY (Except Waggoner, Standard City, & North thereof) COUNTIES:		

CARPENTERS, LATHERS	21.04	10.71
MILLWRIGHTS	23.45	8.76
PILEDRIVERS	21.54	10.71

CARP0790A 06/01/2001

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Rates Fringes

CARROLL, JO DAVIESS, LEE (Ashton, Franklin Grove, Amboy, Lee Center, Compton, W. Brooklin, Shaw Station Sublette, Eldena, Harmon, Nelson, & Prairieville), OGLE (Polo, Haldene, Mt.Morris), STEPHENSON & WHITESIDE (Penrose Corner) COUNTIES

CARPENTERS, LATHERS	22.59	10.21
PILEDRIVERMAN	23.59	10.21

CARP0790B 06/01/2001

Rates Fringes

DEKALB AND OGLE (East of West Brooklyn) COUNTIES

CARPENTERS, FLOOR LAYERS	24.90	9.71
PILEDRIVERS	25.40	9.71

CARP0792A 06/01/2001

Rates Fringes

BOONE, OGLE (Northern 1/2), & WINNEBAGO COUNTIES

CARPENTERS, LATHERS and SOFT FLOOR LAYERS	24.68	9.94
PILEDRIVERS	25.68	9.94

CARP0904A 05/01/2001

Rates Fringes

BROWN, CASS, GREENE (Whitehall & North thereof), MORGAN, PIKE, SCHUYLER (Except area lying North of State HWY #101 to U.S. HWY 67 South of U.S. HWY #67 1 1/4 mi. from this point to the Southwest corner of Fulton County) & SCOTT (North of Rt 54) COUNTIES

CARPENTERS & LATHERS	21.56	10.19
PILEDRIVERS	22.06	10.19
MILLWRIGHTS	23.45	8.76

CARP1051A 05/01/2001

Rates Fringes

FULTON, HANCOCK, KNOX, LOGAN, MASON, MCDONOUGH, WARREN, AND WOODFORD COUNTIES:

MILLWRIGHTS	24.04	8.76
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CARP1051C 05/01/2001

Rates Fringes

ADAMS, BROWN, CASS, GREENE, MACOUPIN, MENARD, MONTGOMERY, MORGAN, PIKE, SCHUYLER, AND SCOTT COUNTIES:

MILLWRIGHTS	23.45	8.76
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CARP1051G 05/01/2001

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
LIVINGSTON AND MCLEAN COUNTIES:		
MILLWRIGHTS	24.13	8.76

CARP2158A 06/01/2001

	Rates	Fringes
HENDERSON, HENRY (South of I-80), MERCER, ROCK ISLAND (South of I-80) COUNTIES		
MILLWRIGHTS	23.01	11.03

CARP2158C 06/01/2001

	Rates	Fringes
BOONE, OGLE (Northern part of County with boundaries as follows: Longitudinal line of the West boundary of Winnebago County extended South to the line 4 miles North of the City of Oregon and thereon East to the Eastern Longitudinal boundary of Ogle County, thence North to the Southern boundary of Boone County), STEPHENSON, & WINNEBAGO COUNTIES		
MILLWRIGHTS	29.60	11.56

CARP2158D 06/01/2001

	Rates	Fringes
LA SALLE COUNTY (Eastern part)		
MILLWRIGHTS	29.47	12.29

CARP2158E 06/01/2001

	Rates	Fringes
BUREAU, CARROLL, DE KALB, HENRY North of I-80), JO DAVIESS, LA SALLE (Remainder), LEE, MARSHALL, OGLE (Remainder), PUTNAM, ROCK ISLAND (North of I-80), STARK, & WHITESIDE COUNTIES		
MILLWRIGHTS	29.47	12.29

ELEC0034A 03/01/2001

	Rates	Fringes
MARSHALL (Area West of Bell Plain & Roberts TWPS) & WOODFORD (Area West of Kansas, Linn, Palestine & Roanoke TWPS) COUNTIES		
ELECTRICIANS	24.68	8.89+3%
CABLE SPLICERS	26.68	8.89+3%

ELEC0034B 03/01/2001

	Rates	Fringes
FULTON (Cass, Deerfield, Ellisville, Harris, Lee, Union, Young, & Hickory TWPS), HENDERSON, KNOX, MCDONOUGH (Blandinsville, Prairie City, Emmet, Tennessee, Scotland, Sciota, Bushnell, Chalmers TWPS), MERCER (Ohio Grove, Suez, & N. Henderson		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 TWPS) & WARREN COUNTIES

ELECTRICIANS:

Wiremen	24.14	8.35+3%
Cable Splicers	26.14	8.35+3%

ELEC0034C 03/01/2001

Rates Fringes
 ADAMS, BROWN, HANCOCK, MCDONOUGH (Lamoine, Bethel, Industry & Eldorado), PIKE & SCHUYLER COUNTIES

ELECTRICIANS	23.24	6.75+3%
CABLE SPLICERS	25.24	6.75+3%

ELEC0034F 03/01/2001

Rates Fringes
 FULTON (Except Cass, Deerfield, Ellisville, Harris, Lee, Union, Young, and Hickory TWPS) & MASON (Except Bath, Crane, Creek, Kilbourne, Lynchburg, Mason City, and Salt CREEK TWPS) & STARK (Essex, Valley & W. Jersey TWPS) COUNTIES

ELECTRICIANS	24.68	8.89+3%
CABLE SPLICERS	26.68	8.89+3%

ELEC0145B 06/04/2001

Rates Fringes
 CARROLL (Chadwick, Mt. Carroll, Savanna and Thompson TWPS),
 HENRY (Except Annawan, Burns, Cambridge, Galva, Kewanee, Weller, and Westerfield TWPS), JO DAVIESS (Savanna Ordnance Depot),
 MERCER (Except Ohio Grove, North Henderson, & Suez), WHITESIDE (Remainder) & ROCK ISLAND COUNTIES

ELECTRICIANS	24.60	9.97
CABLE SPLICERS	25.60	9.97

ELEC0176B 06/01/1993

Rates Fringes
 BUREAU, HENRY (Anawan, Burns, Cambridge, Galva, Kewanee, Weller, and Westerfield TWPS), LA SALLE (Deer Park, Eden, La Salle, Peru, Utica, Ottawa, Seneca & Vermilion TWPS), PUTNAM (Granville, Hennepin & Senachwine TWPS) & STARK (Elmira, Goshen, Oseola, Penn, and Toulon TWPS) COUNTIES

ELECTRICIAN	21.90	6.70 + 3.6%
CABLE SPLICERS	22.30	6.70 + 3.6%

ELEC01760 12/01/1997

Rates Fringes
 BUREAU, HENRY (Anawan, Burns, Cambridge, Calva, Kewanee, Weller, and Westerfield TWPS), LA SALLE (Deer Park, Eden, La Salle, Peru, Utica, Ottawa, Seneca, & Vermilion TWPS), PUTNAM (Granville,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Hennepin, & Senachwine TWPS), & STARK (Elmira, Goshen, Oseola, Penn, and Toulon TWPS) COUNTIES:

CATV Installer	20.21	3%+8.17
Sound Technician	20.21	3%+8.17

ELEC0193A 06/01/2000

	Rates	Fringes
CASS, LOGAN, MACOUPIN (Athenville, Scottville, Girard & area North thereof), MASON (Lynchburg, Bath, Kilbourne, Crane Creek, Salt Creek & Mason TWPS), MENARD, MONTGOMERY (Bois D Arc, Pitman, & Harvel TWPS), MORGAN, SCOTT & COUNTIES		

ELECTRICIANS:

Wiremen	26.72	5.50+3.5%
Cable Splicers	26.72	5.50+3.5%

ELEC0197A 06/01/2001

	Rates	Fringes
MC LEAN (Except Anchor, Belleflower, Cropsey, Cheney Grove TWPS) & WOODFORD (Palestine, El Paso & Kansas TWPS) COUNTIES		

ELECTRICIANS	26.37	7.00+4.5%
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ELEC0309A 08/30/2000

	Rates	Fringes
BOND (Western 1/2), CLINTON (Except Huey, Hoffman, and vicinity), MACOUPIN (Except Brighton TWP, Athenville, Scottville, Girard, and area North thereof), MONROE, MONTGOMERY (West of Butler Grove, Isham, & Raymond TWPS), RANDOLPH (Red Bud TWP), WASHINGTON (Venedy TWP), COUNTIES		

ELECTRICIANS	27.01	36%
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MONTGOMERY COUNTY (East of Butler Grove, Grisham, & Raymond TWPS)

ELECTRICIANS	17.85	2.14
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ELEC0364A 06/01/2000

	Rates	Fringes
BOONE, CARROLL (Cherry Grove, Shannon, Rock Creek, Lina, Wysox & Elkhorn Grove TWPS), DEKALB (Franklin, Kingston, Genoa, South Grove, Mayfield, Sycamore, Malta, Pow Pow, Victor, & Somonauk TWPS), JO DAVIESS (Warren & Rush), LEE, OGLE, STEPHENSON, WHITESIDE (Genesee, Jordan, Hopkins, Sterling, Hume, Montgomery, Tampico, & Hahnman TWPS) & WINNEBAGO COUNTIES:		

ELECTRICIANS	28.28	11.01+3%
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ELEC0461A 06/01/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 DE KALB COUNTY (Sandwich TWP)

ELECTRICIANS	31.85	39%
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ELEC0461D 06/01/1997

	Rates	Fringes
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DE KALB COUNTY (Sandwich Twp):

ELECTRICAL TECHNICIAN	24.42	31,5%
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Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEC0601C 06/01/2001

	Rates	Fringes
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LA SALLE (Remainder), LIVINGSTON, MC LEAN (Cropsey, Anchor, Cheney Grove, & Belleflower TWPS), MARSHALL (Roberts, Evans, Bell, Plaine, & Bennington), PUTNAM (Magnolia TWP) & WOODFORD (Linn, Clayton, Minonk, Roanoke, Green, & Panola TWPS) COUNTIES

ELECTRICIANS	26.83	6.47+3%
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ELEC0649A 03/01/2000

	Rates	Fringes
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CALHOUN, GREEN, JERSEY, & MACOUPIN (Brighton TWP) COUNTIES

ELECTRICIANS	25.07	9.58
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ELEC0702G 06/01/2001

	Rates	Fringes
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BOND (Eastern 1/2), CLINTON (Huey, Hoffman, & vicinity), RANDOLPH (Except Red Bud TWP), & WASHINGTON (Except Venedy TWP) COUNTIES

ELECTRICIANS	27.15	3.44+19.5%
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ELEC0704C 12/01/2000

	Rates	Fringes
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JO DAVIESS COUNTY (Except Savanna Ordnance Depot & area East of Apple River, Thompson & Woodbine TWPS)

ELECTRICIANS	22.50	6.15+4%
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ELEV0003C 07/01/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN, MONROE,
MONTGOMERY, RANDOLPH, & WASHINGTON COUNTIES:

ELEVATOR MECHANICS 27.765 6.935+A&B

FOOTNOTES:

A. Employer contributes 8% of regular basic hourly rate as
as vacation pay credit for employees with more than 5 years
of service, and 6% for 6 months to 5 years of service

B. Seven paid holidays: New Year's Day, Memorial Day,
Independence Day, Labor Day, Thanksgiving Day
Friday after Thanksgiving Day, and Christmas Day.

ELEV0046A 10/02/2000

BUREAU, HENRY, MERCER, ROCK ISLAND, & WHITESIDE COUNTIES

ELEVATOR MECHANICS 24.17 7.195+A&B

FOOTNOTES:

A. Employer contributes 8% of regular basic hourly rate as
vacation pay credit for employees with more than 5 years
of service, and 6% for employees with 6 months to 5 years
of service.

B. SEVEN PAID HOLIDAYS: New Year's Day; Memorial Day;
Independence Day; Labor Day; Thanksgiving Day; Day after
Thanksgiving; & Christmas Day.

ELEV0055B 07/12/2000

FULTON, HENDERSON, KNOX, LA SALLE, LIVINGSTON, MARSHALL,
MCDONOUGH, MCLEAN, PUTNAM, STARK, WARREN, & WOODFORD COUNTIES:

ELEVATOR MECHANICS 24.915 7.195+A&B

FOOTNOTES:

A. Employer contributes 8% of regular basic hourly rate as
vacation pay credit for employees with more than 5 years
of service, and 6% for 6 months to 5 years of service.

B. Paid Holidays: New Year's Day; Memorial Day;
Independence Day; Labor Day; Thanksgiving Day; Day after
Thanksgiving; & Christmas Day

ELEV0092A 05/01/2001

ADAMS, BROWN, CASS, HANCOCK, LOGAN, MASON, MENARD, MORGAN,
PIKE, SCHUYLER, & SCOTT COUNTIES

ELEVATOR MECHANICS 25.725 7.195+A&B

FOOTNOTES:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

- A. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
- B. SEVEN PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; & Christmas Day.

ELEV0132B 07/01/2000

	Rates	Fringes
BOONE, CARROLL, DE KALB, JO DAVIESS, LEE, OGLE, STEPHENSON, & WINNEBAGO COUNTIES		
ELEVATOR MECHANICS	29.27	6.935+A&B

FOOTNOTES:

- A. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
- B. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day.

ENGI0150C 06/01/2001

	Rates	Fringes
OBONE, CARROLL, DE KALB, JO DAVIESS, LEE, OGLE, STEPHENSON; WHITESIDE, AND WINNEBAGO COUNTIES:		
POWER EQUIPMENT OPERATORS		
GROUP 1	29.30	10.65
GROUP 2	28.60	10.65
GROUP 3	26.15	10.66
GROUP 4	24.15	10.65

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant*; Asphalt Spreader; Autograde*; Backhoes with Caisson attachment*; Batch Plant*; Benoto (Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs*; Central Redi-Mix Plant*; Combination Backhoe Front Endloader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)*; Concrete Conveyor; Concrete Conveyor, Truck Mounted; Concrete Paver over 27E cu. ft.*; Concrete Paver 27E cu ft and Under*; Concrete Placer*; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes*; Cranes, Hammerhead*; Cranes, (GCI and similar type Requires two operators only); Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling*; Formless Curb and Gutter Machine*; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2 1/4 yd. and over; Hoists, Elevators, Outside Type Rack and pinion and similar Machines; Hoists, One, Two, and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes*; Hydraulic Boom Trucks; Hydraulic Vac (and similar equipment); Locomotives; Motor Patrol*; Pile Drivers and Skid Rig*; Post Hole Digger; Pre-

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Stress Machine; Pump Cretes Dual Ram(Requiring frequent Lubrication and Water); Pump Cretes; Squeeze Cretes-Screw Type Pumps Gypsum Bulker and Pump; Raised and Blind Hole Drill*; Roto Mill Grinder (36" and Over)*; Roto Mill Grinder (Less Than 36")*; Scoops-Tractor Drawn; Slip-Form Paver*; Straddle Buggies; Tournapull; Tractor with Boom, and Side Boom; and Trenching Machines*.

GROUP 2: Bobcat (over 3/4 cu yd); Boilers; Brick Forklift; Broom, Power Propelled; Bulldozers; Concrete Mixer (Two Bag and over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front End loaders under 2 1/4 cu yd; Automatic Hoists, Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted)*; Rollers; Steam Generators; Tractors; Tractor Drawn Vibratory Roller (Receives an additional \$.50 per hour); Winch Trucks with "A" Frame.

GROUP 3: Air Compressor-Small 185 and Under (1 to 5 not to exceed a total of 300 ft); Air Compressor-Large over 185; Combination-Small Equipment Operator; Generator- Small 50 kw and under; Generator-Large over 50 kw; Heaters, Mechanical; Hoists, Inside Elevators (Remodeling or Renovatin work); Hydrualic Power Units (Pile Driving, Extracting, and Drilling); Low Boys; Pumps Over 3" (1 To 3 not to exceed a total of 300 ft); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu yd)

GROUP 4 - Oilers; Hoists; Inside Elevators; Push Button Automatic Doors

*-Requires Oiler

PREMIUM PAY:

Long Boom:

Cranes & Derricks 90' to 150' including jib receive an extra \$.50 per hour.

Cranes & Derricks over 150' including jib receive an extra \$.50 per hour plus an additional \$.10 for each additional 10' of boom or jib.

Capacity Pay:

Cranes & Derricks with maximum capacity exceeding 50 ton with less than 90' of boom or jib shall be compensated \$.01 per hour for each ton of the rated capacity in excess of 50 ton.

Long Boom pay and Capacity pay cannot be combined.

Crane mounted earth auger, raised and blind hole drills, and truck mounted drill rigs receive an extra \$.50 per hour.

Creter Cranes:

When the Creter Crane is equipped with a conveyor system capable of extending 70' or more, the engineer shall receive an extra \$.50 per hour.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Truck Mounted Concrete Pumps:

When the Truck Mounted Concrete Pump is equipped with a boom, which is capable of extending 90' or more, the engineer shall receive \$.50 per hour extra.

Truck Mounted Concrete Conveyor:

Truck Mounted Concrete Conveyors equipped with conveyors that are capable of extending 90' or more, the engineer shall receive an extra \$.50 per hour.

Underground Work:

Employees working in tunnels, shafts, etc. shall be paid an additional \$.40 per hour. Employees working under air pressure 1/2 pound to 7 pounds shall receive an additional \$.50 per hour. Employees working under air pressure of 7 pounds or over shall receive \$.65 per hour more.

Mining Machines-Boring Machines:

The crew operating and maintaining the Mining Machines shall be compensated an additional \$.50 per hour.

ENGI0150E 06/01/2000

Rates Fringes
BUREAU (East and North of RT. 26), LA SALLE, LIVINGSTON, AND
PUTNAM (East & South of the Illinois River) COUNTIES

POWER EQUIPMENT OPERATORS:

GROUP	Rates	Fringes
GROUP 1	28.55	10.15
GROUP 2	27.25	10.15
GROUP 3	24.70	10.15
GROUP 4	22.95	10.15

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant*; Asphalt Spreader; Autograde*; Backhoes with Caisson Attachment*; Batch Plant*; Benoto (Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs*; Central Redi-Mix Plant*; Combination Backhoe Frontend Loader; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)*; Concrete Conveyor; Concrete Paver over 27E cu ft*; Concrete Paver 27E cu ft and under; Concrete Placer*; Concrete Pump Truck Mounted; Concrete Tower; Cranes; Cranes, Hammerhead*; Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling; Formless Curb and Gutter Machine*; Grader, Elevating; Grouting Machines; Highlift Shovels or Frontend Loader 2 1/4 yd and over; Hoists, Elevators, Outside Type Rack and Pinion and Similar; Hoists, One, Two, and Three Drums; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotive; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Prestress Machine; Pump Crete Dual Ram(Requiring frequent lubrication and water)*; Pump Cretes; Squeeze Cretes Screw Type Pumps Gypsum Bulker and Pump; Roto Mill Grinder 36" and over*; Roto Mill Grinder less than 36"; Scoops-Tractor Drawn; Slip-Form Paver*; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

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Apparatus Two; Light Plants two; Tractors regardless of size Straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution Operator on Trucks; Winch Heads or Apparatuses (1); Excavators; Mobile Track Air and Heater (two to five); Heavy Equipment Greaser and all other Operators not listed below.

GROUP 2: Air Compressor One; Water Pump regardless of size one; Welding Machine One; 1-Bag Mixer One; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One.

GROUP 3: Firemen on Whirlies and Asphalt Spreader Oilers; Heavy Equipment Oilers; Truck Cranes; Monigans; Large (Over 65 ton rated Capacity); Concrete Plant Oiler and Black Top Plant Oiler.

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on equipment with Booms, including Jibs, 100 ft and over, but less than 150 ft.

GROUP 6: Operators on equipment with Booms, including jibs, 150 feet and over, but less than 200 feet.

GROUP 7: Operators on Equipment with Booms, including jibs, 200 Feet and over; Tower Cranes and Whirley Cranes.

ENGI0520D 08/01/2000

	Rates	Fringes
RANDOLPH COUNTY		
POWER EQUIPMENT OPERATORS:		
GROUP 1	23.50	12.10
GROUP 2	18.34	12.10
GROUP 3	17.95	12.10
GROUP 4	17.62	12.10
GROUP 5	24.05	12.10
GROUP 6	24.35	12.10
GROUP 7	24.63	12.10

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Boats; Piledrivers; Crane-Type Backhoes; Asphalt Plant Oper; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry Pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers & Pumps; Bulk Cement Plants; Cement Pumps; Derrick Type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; Endloaders or Forklifts; Power Blade or Elevating Graders; Winch Cats; Boom or Winch Trucks or Boom Tractors, Pipewrapping or Painting Machines; Drills (other than Derrick Type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors (two); Water Pumps Regardless of size; Welding Machines (two); Siphons or Jets (two); Winch Heads

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or Apparatus (two); Light Plants (two); Tractors Regardless of Size Straight (Tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution Operator on Trucks; Winch Heads or Apparatuses (1); Excavators; Mobile Track Air and Heater (two to five); Heavy Equipment Greaser and all other Operators not listed below.

GROUP 2: Air Compressor (one); Water Pump Regardless of size (one); Welding Machine (one); 1-Bag Mixer (one); Conveyor (one); Siphon or Jet; Light Plant (one); Heater (one); Immobile Track Air (one).

GROUP 3: Firemen on Whirlies and Asphalt Spreader Oilers; Heavy Equipment Oilers; Truck Cranes; Monigans; Large (over 65 ton Rated Capacity); Concrete Plant Oiler and Black Top Plant Oiler.

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on equipment with Booms, Including Jibs, 100 feet and over; but less than 150 feet.

GROUP 6: Operators on equipment with Booms, including Jibs, 150 feet and over, but less than 200 feet.

GROUP 7: Operators on Equipment with Booms, including Jibs, 200 feet and over; Tower Cranes and Whirley Cranes.

ENGI0537D 06/01/1993

	Rates	Fringes
SCOTT COUNTY:		
POWER EQUIPMENT OPERATORS:		
GROUP 1	16.50	4.90
GROUP 2	13.85	4.90
GROUP 3	12.80	4.90

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: All hoists or steel erecting equipment, Cranes; Shovels; Clamshells; Draglines; Backhoes; Derricks; Tower Cranes; Cableways; Concrete Spreaders (servicing 2 pavers); Asphalt Spreaders; Asphalt Mixer Plant Engineers; Dipper Dredge Operator; Dipper Dredge Cranemen; Dual Purpose Trucks (Boom or Winch); Leverman or Engine Men (Hydraulic Dredge); Mechanics; Paving Mixers with tower attached (two operators required); Piledriver, Boom Tractor, stationary, portable or floating mixing plant, Trenching Machine (over 40 HP), Building Hoist (2 drums), Hot Paint Wrapping Machine, Cleaning & Priming Machine, Backfiller (throw bucket), Locomotive Engineer, qualified Welder; Tow or Push Boat, Concrete Paver, Seaman trav-1-plant or similar Machine, CMI Autograder or similar machine, Slip Form Paver, Caisson Augering Machine, Mucking Machine, Asphalt Heat Planer Unit, Hydraulic Cranes, Mine Hoists; Athey, barber-green, Euclid or haiss loader, Asphalt Pug Mill, Fireman & Drier, Concrete

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Pump, Concrete Spreader (servicing 1 paver); Bulldozer, Endloader, Log Chippers or similar machines, Elevating Grader, Group Equipment Greaser, LeTourneau pull & similar machines, DW-10, Hyster Winch & similar machines, Motor Patrol, Power Blade, Push Cat, Tractor pulling elevating grader or power blade, Tractor operating scoop or scraper, Tractor with power attachments, roller on asphalt or blacktop, single drum hoist, jaeger mix & Plant Machine, Pipe bending Machine, Flexaplane or similar Machine, Automatic Curbing Machine, Automatic Cement & Gravel batch plants (1 stop set-up), seaman pulvi-mixer or similar Machine, Blastholer, Self-propelled Rotary Drill or similar Machines, Work Boat, Combination concrete finishing & float, Self-propelled sheep foot roller or compactor (used in conjunction with a grading spread), Asphalt Spreader Screed Operator, Apsco Spreader or similar Machine, Slusher, Forklift (over 6000 lbs. capacity or working at heights above 28 ft.), Concrete Conveyors.

GROUP 2: Asphalt Boosters; Firemen and Pump Operators at Asphalt Plants; Mud Jack, Underground Boring Machine, Concrete Finishing Machine, Form Grader with Roller on Earth, Mixers (3 Bag to 16-E) Power Operated Bull Float; Tractors without Power Attachments; Dope Pots (Agitating Motor); Dope Chop Machines; Distributors (back end); Portable Machine Fireman, Power winch on paving work, self-propelled roller or compactor (other than provided for above), Pump Operator (more than one well-point pump). Portable Crusher Operator, Trench Machine (under 40 hp) Power Subgrader (on forms) or similar machines, Forklift (6000 lb. or less cap.), Gypsum Pump, Conveyor over 20 hp., Fuller Kenyon Cement Pump or similar machines.

GROUP 3: Oilers; Mechanical Heater (other than Steam Boiler), Belt Machine, Small Outboard Motor Boats (Safety Boat & Lift Boat), Engine Driven Welding Machine & Small Tractors (used to unroll wire mesh), Water Pumps, Air Compressors, Permanent Automatic Elevators.

 ENGI0649A 05/01/2001

	Rates	Fringes
BUREAU (West of RT. 26), FULTON, HANCOCK, HENDERSON, HENRY (Eastern 1/2), KNOX, MCDONOUGH, MCLEAN, MARSHALL, MASON, PUTNAM (West of Illinois River), STARK, WARREN, & WOODFORD COUNTIES		

POWER EQUIPMENT OPERATORS:

GROUP 1	24.21	9.95
GROUP 2	22.19	9.95
GROUP 3	20.87	9.95

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes (Premium Rates on Crane and Derrick Booms: 5 cents per hour per foot over 90 feet including Jib, \$1.00 per hour over Scale when Crane or Derrick Boom is positioned 50 ft. or more above adjacent ground level or water level; Boom Pay and capacity pay shall not be pyramided); Overhead Cranes; Gradall; All Cherry Pickers; Mechanics; Central Concrete Mixing Plant

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Operator; Road Pavers (27E-Dualdrum-Tri- Batchers); Blacktop Plant Operators and Plant Engineers; 3-Drum Hoist; Derricks; Hydro Cranes; Shovels; Skimmer Scoops; Koehring Scooper; Draglines; Backhoe; Derrick Boats; Pile Drivers and Skig Rigs; Clamshells; Locomotive Cranes; Dredge (all types); Motor Patrol; Power Blades-Dumore-Elevating and Similar Types; Tower Cranes (Crawler-Mobile) and Stationary; Crane-Type Back-Filler; Drott Yumbo and Similar Types Considered as Cranes; Caisson Rigs; Dozer; Tournadozer; Work Boats; Ross Carrier; Helicopter; Tournapulls - All and Similar Types; Scoops (all sizes); Pushcats; Endloaders (all types); Asphalt Surfacing Machine; Slip Form Paver; Rock Crusher; Heavy Equipment Greaser; CMI, CMI Belt Placer, Auto Grade & 3 Track and Similar Types; Side Booms; Multiple Unit Earth Movers: .25 cents per hr., for each Scoop over one (1); Creter Crane; Trench Machine; Pumpcrete-Belt Crete-Squeeze Cretes-Screw-Type Pumps and Gypsum, Bulker & Pump-Operator will clean; Formless Finishing Machine; Flaherty Spreader or Similar Types; Screee Man on Laydown Machine; Wheel Tractors (Industrial or Farm-Type w/Dozer-Hoe-Endloader or other attachments); FWD & Similar Types; Vermeer Concrete Saw.

GROUP 2 - Dinkeys; Power Launches; PH One-Pass Soil-Cement Machine (and similar types); Pugmill with Pump; Backfillers; Euclid Loader; Forklifts; Jeeps w/Ditching Machine or other attachments; Tuneluger; Automatic Cement and Gravel Batching Plants; Mobile Drills (Soil Testing) and Similar Types; Gurries and Similar Types; 1 and 2 Drum Hoists (Buck Hoists and similar types); Chicago Boom; Boring Machine & Pipe Jacking Machine; Hydro Boom; Dewatering System; Straw Blower; Hydro Seeder; Assistant Heavy Equipment Greaser on Spread; Tractors (Track-Type) without Power Unit Pulling Rollers; Rollers on Asphalt - Brick or Macadam; Concrete Breakers; Concrete Spreaders; Mule Pulling Rollers; Cement Stripper; Cement Finishing Machines & CMI Texture & Reel Curing Machines; Cement Finishing Machine; Barber Green or similar loaders; Vibro Tamper (all similar types) Self-Propelled; Winch or Boom Truck; Mechanical Bull Floats; Mixers over 3 Bags to 27E; Tractor Pulling Power Blade or Elevating Grader; Porter Rex Rail; Clary Screed; Truck-Type Hoptoe Oilers; Fireman; Spray Machine on Paving; Curb Machines; Truck Crane Oilers; Oil Distributor.

GROUP 3 - Air Compressor -600 CFM and under, Herman Nelson Heater, Dravo, Warner, Silent Glo, and similar types; Freight Elevators, permanently installed; Water Pump(s), Light Plants, Generators, & Welding Machines.

 ENGI0965A 05/01/2001

Rates Fringes
 ADAMS, BROWN, CASS, LOGAN, MENARD, MORGAN, PIKE, SCHUYLER & SCOTT
 COUNTIES

POWER EQUIPMENT OPERATORS:

GROUP 1	24.55	8.20
GROUP 2	22.30	8.20
GROUP 3	18.80	8.20

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PREMIUM PAY-CRANES WITH BOOMS 90-149 ft. .50 per hour; 150 ft. and up .75 per hour; MULTIPLE UNIT MACHINE- 1.00 per hour; UNDERGROUND WORK- .50 per hour; UNDER AIR PRESSURE- .50 per hour; HAZARDOUS WASTE OR ASBESTOS REMOVAL PROJECTS- 1.00 per hour for Level C work; 1.50 per hour for Level B work; 2.00 per hour for Level A work; LONG BOOM ON A STATIONARY CRANE 1.00 per hour.

Level A: (highest level of respiratory, skin, and eye protection)
Level B: (same as Level A, but a lower level of skin protection)
Level C: (same as Level B, but a lower level of respiratory protection).

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt Plant Engineer; Asphalt screed man; Apsco concrete spreader; Asphalt paver; Asphalt roller on bituminous concrete; Athey loaders; Cableways; Cherry Picker; Clam Shell; C.M.I. & Similar Type Autograde Formless Paver, Autograde Placer & Finisher; Concrete Breaker; Concrete plant Oper; Concrete Pumps; Cranes; Derricks; Derrick boats; Draglines; Earth auger boring machine, Elevating Graders; Engineers on dredge; Gravel processing machines; Head equipment greaser; High lift or fork lift; Hoist with two drums or 2 or more loadlines; Locomotive; Mechanics; Motor graders or auto patrols; Operators or levelman on dredges; Power boat oper; Pug mill oper; (Asphalt plat); Orange peels; Overhead cranes; Paving mixer; Piledrivers; Pipe wrapper & Painting machines; Push dozers, or Push cats; Rock crusher; Ross carrier or similar machine; Scoops; Skimmers 2 cu yd capacity & Under; Sheep foot roller (self propelled); Shovels; Skimmer; Scoops; Test hole drilling machines; Tower machine; Tower mixer; Track Tupe & Loaders; Track type forklifts or high lifts; Track jacks & Tampers; Trackors; Sideboom; Trenching machine; Ditching machine; Tunnel lugger; Wheel type end loader; Winch cat; Scoops (Allor tournapull).

GROUP 2: Asphalt booster & Heater; Asphalt distributor; Asphalt plant fireman; Building Elevator; Bull float or flexplane; Concrete finishing machine; Concrete saw, self propelled; Concrete spreader machine; Gravel or stone spreader, Power operated; Hoist automatic; Hoist with one drum & one load line; Oiler on 2 paving mixers when used in tandem boom or winch truck; Ost hole diggers; Mechanical; Road or street sweeper, Self-propelled; Scissors hoist; Seaman tiller; Straw machine; Vibratory compactor; Well drill machine; & Mud jacks.

GROUP 3: Air compressor, Track or self-propelled; Bulk cement batching- plants; Conveyors; Concrete mixers (Except Plant, Paver, Tower) Firement, Generators; Greasers; Light plants; Mechanical theater; Oilers; Power from graders; Power sub-grader; Pug mill, When used other than asphalt operation; Roolers (Except bituminous); Tractors w/o Power attachments regardless of size or type; Truck crane oiler; & driver (one man); Vibratory hammer; Water pump; Welding machine (one 300 amp or over) Combinations of five of any air compressors; Conveyors, Welding Machines, Water pumps; Light plants or Generators shall be in batteries or with in 300 ft.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Bullfloat; Tractors without Power Attachments; Dope Pots (Agitating Motor); Dope Chop Machines; Distributors (Backend); Portable Machine Fireman; Power Winch on Paving work; Self-propelled Roller or Compactor (other than provided for above); Pump operator (more than one well point pump Portable Crusher operator; Trench Machine, under 40 hp; Power Subgrader (on forms) or similar machines; Forklift, 6000 lb or less capacity; Gypsum pump; Conveyor over 20 hp; Fuller, Kenyon Cement Pump or similar machines.

GROUP 4: Air Compressors (400 CFM or over); Drivere on Truck Cranes or Similar Machines, Light Plants, Mixers, (1 or 2 Bag) Power Batching Machine (Cement Auger or Conveyor), Boiler (Engineer of Fireman), Water Pumps, Mechanical BROOM, automatic Cement and Gravel Batch Plants (2 or 3 stop set-up); Small Rubber Tired Tractors. (Not Including Backhoes or Endloaders), Self-Pro-Propelled Curing Machine, Brush Chipper.

GROUP 5: Oiler, Mechanical Heater (other than Steam Boiler), Belt Machine, Small Outboard Motor Boats (Safety Boat & Lift Boat), Engine Driven Welding Machine & Small Tractors (used to roll or unroll wire mesh), Water pump, Air Compressor, Permanent Automatic Elevators.

 IRON0046D 05/01/2001

	Rates	Fringes
ADAMS (Southeastern corner), BROWN, CASS, FULTON (Southern tip including Marbletown, Astoria & Summun TWPS), GREENE (Northern 1/2), LOGAN, MACOUPIN (Northern part), MASON (East of Rt. 136), MENARD, MONTGOMERY (Except Litchfield, Hillsboro & South thereof) MORGAN, PIKE, SCHUYLER (Eastern 1/2), & SCOTT COUNTIES		

IRONWORKERS	21.83	10.57
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IRON0111C 05/01/2000

	Rates	Fringes
CARROLL (Thompson, Savanna & vicinity), HENRY, JO DAVIESS (E. Dubuque, Galena, Hanover, & vicinity), KNOX (Galesburg and area North of the City), MERCER (except SW part), ROCK ISLAND, WARREN (includes NW part), AND WHITESIDE (Western half) COUNTIES		

IRONWORKERS	21.03	11.22
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IRON0112A 05/01/2001

	Rates	Fringes
FULTON (Except Marbletown, Astoria & Summun TWPS), KNOX (area Southeast of Galensburg), LIVINGSTON, MCDONOUGH, MCLEAN (Western 1/2), MARSHALL (SouthWestern corner), MASON (West of Rt. 136), STARK & WOODFORD COUNTIES		

IRONWORKERS	21.95	11.27
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRON0380B	05/01/2000		
		Rates	Fringes
MCLEAN COUNTY (Eastern half)			
IRONWORKERS		21.77	9.39

IRON0386A	06/01/2001		
		Rates	Fringes
LA SALLE, MARSHALL (Except Southwestern corner) & PUTNAM COUNTIES			
IRONWORKERS		23.00	13.12

IRON0392A	08/01/2000		
		Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE (Southern 1/2), JERSEY, MACOUPIN (Southern part), MONROE, MONTGOMERY (Litchfield, Hillsboro & South thereof), RANDOLPH, WASHINGTON COUNTIES			
IRONWORKER		22.07	11.18

IRON0393A	06/01/2000		
		Rates	Fringes
DEKALB COUNTY (Southeastern 2/3 including Sycamore & Dekalb)			
IRONWORKERS		28.18	15.18

IRON0498A	06/01/2000		
		Rates	Fringes
BOONE, CARROLL (Except Thompson, Savanna & vicinity.), DEKALB (Except Southeastern 2/3), JO DAVIESS (Except E. Dubuque, Galena, Hanover & vicinity), LEE, OGLE, STEPHENSON, WHITESIDE (Cities of Rock Falls, Sterling, West Sterling), & WINNEBAGO COUNTIES			
IRONWORKERS		27.00	13.475

IRON0577H	06/01/2000		
		Rates	Fringes
ADAMS, HANCOCK, HENDERSON, KNOX (West of Hwy #41), MERCER (SW part), SCHUYLER (Western 1/2), & WARREN (except NW part) COUNTIES			
IRONWORKERS		18.95	8.81

LABO0032A	05/01/2001		
		Rates	Fringes
WINNEBAGO COUNTY			
LABORERS GROUP 1		20.26	10.70

LABORERS CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1: Carpenter Tender; Tool Cribmen; Firemen or Alamander Tender; Flagman; Gravel Box Men, Dumpmen & Spotters; Form Handlers; Material Handlers; Fencing Laborers; Cleaning Lumber; Pit Men; Material Checkers; Unloading Explosives; Removal of Trees; Ashpalt Workers with Machine & Layers; Asphalt Plant Laborers; Wrecking; Fireproofing; Janitors; Driving Stakes, Stringlines for all Machinery; Window Cleaning; Demolition Worker. Asbestos Abatement Worker; Hazardous Waste Worker; Handling of any Materials with any Foreign Matter Harmful to skin or clothing; Track; Cement Handler; Chloride Handler; Unloading & Laborers with Steel Workers & Rebars; Concrete Workers Wet; Tunnel Tenders in free air; Batch Dumper; Mason Tender; Kettle & Tar Men; Tank Cleaner; Plastic Installer; Scaffold Worker; Motorized Buggies or Motorized Unit used for Wet Concrete or Handling of Building Materials; Laborers with Dewatering Systems; Sewer Workers Plus Depth; Vibrator Operator; Cement Silica, Clay, Fly Ash, Lime & Plasters, Handlers (bulk or bag); Cofferdam Workers Plus Depth; Concrete Paving, Placing, Cutting & Tying of Reinforcing; Deck Hand, Dredge Hand and Shore Laborers; Bankmen on Floating Plant; Grade Checker; Power Tools; Front End Man on Chip Spreader; Caisson Worker Plus Depth, Gunnite Nozzle Man; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chainsaw Operator; Jackhammer & Drill Oper.; Layout Man or Tile Layer; Stee; Form Setter (street & hwy); Air Tamping Hammermen; Signal Man on Crane; Concrete Saw Operator; Screedman on Aspahl Pavers; Tending Masons with Hot Material or where Foreign Materials are used; Mortar Mixer Operator; Multiple Concrete Duct-Leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready Mix Scaleman, Permanent, Portable or Temporary Plant; Laborers Handling Master Plate or similar materials; Laser Beam; Concrete Burning Machine Operator; Coring Machine Operator; Plaster Tender; Underpinning and Shoring of Buildings; Pump Men; Manhole and Catch Basin; Dirt & Stone Tamper; Hose Men on Concrete Pump.

LABO0032E	05/01/2001		
		Rates	Fringes
DEKALB AND OGLE (City of Rochelle)	COUNTIES		
LABORERS:			
GROUP 1		21.26	9.70

LABORERS CLASSIFICATIONS

GROUP 1: Carpenter Tender; Tool Cribmen; Firemen or Salamander Tender; Flagman; Gravel Box Men, Dumpmen & Spotters; Form Handlers; Material Handlers; Fencing Laborers; Cleaning Lumber; Pit Men; Materials Checker; Unloading Explosives; Removal of Trees; Asphalt Workers with Machine & Layers; Asphalt Plant Laborers; Wrecking; Fireproofing; Janitors; Driving Stakes, Stringlines for all Machinery; Window Cleaning; Demolition Worker. Asbestos Abatement Worker; Hazardous Waste Worker; Handling of any materials with any Foreign Matter Harmful to Skin or Clothing; Track; Cement Handler; Chloride Handler; unloading & Laborers with Steel Workers & Rebars; Concrete Workers Wet;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Tunnel Tenders in free air; Batch Dumper; Mason Tender; Kettle & Tar Men; Tank Cleaner; Plastic Installer; Scaffold Worker; Motorized Buggies or Motorized unit used for Wet Concrete or Handling of Building Materials; Laborers with Dewatering Systems; Sewer Workers plus Depth; Vibrator Operator; Cement Silica, Clay, Fly Ash, Lime & Plasters, Handlers (Bulk or Bag); Cofferdam Workers Plus Depth; Concrete Paving, Placing, Cutting & Tying of Reinforcing; Deck Hand, Dredge Hand and Shore Laborers; Bankmen on Floating Plant; Grade Checker; Power Tools; Front End Man on Chip Spreader; Caisson Worker Plus Depth, Gunnite Nozzle Man; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chainsaw Operator; Jackhammer & Drill Oper.; Layout Man or Tile Layer; Steel Form Setter (street & hwy); Air Tamping Hammermen; Signal Man on Crane; Concrete Saw Operator; Screedman on Asphalt Pavers; Tending Masons with Material or where Foreign Materials are used; Mortar Mixer Operator; Multiple Concrete Duct-Leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready Mix Scaleman, Permanent, Portable or Temporary Plant; Laborers Handling Master Plate or Similar Materials; Laser Beam; Concrete Burning Machine Operator; Coring Machine Operator; Plaster Tender; Underpinning and Shoring of Buildings; Pump Men; Manhole and Catch Basin; Dirt & Stone Tamper; Hose Men on Concrete Pump.

LABO0082A 05/01/1999

	Rates	Fringes
LA SALLE COUNTY (Streator & vicinity)		
LABORERS:		
GROUP 1	19.59	6.55
GROUP 2	19.79	6.55
GROUP 3	19.99	6.55
GROUP 4	20.59	6.55

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Bankmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

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GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker and Hazardous Waste Worker

LABO0084B 08/01/1997

GREENE (Roadhouse) & MONTGOMERY (Litchfield) COUNTIES:

LABORERS

	Rates	Fringes
GROUP 1	23.35	3.05
GROUP 2	23.70	3.05
GROUP 3	23.85	3.05
GROUP 4	24.10	3.05

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0149E 06/01/1999

BOONE COUNTY

LABORERS:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1	24.35	5.74
GROUP 2	24.45	5.74
GROUP 3	24.50	5.74
GROUP 4	24.55	5.74
GROUP 5	24.60	5.74
GROUP 6	24.70	5.74
GROUP 7	24.85	5.74
GROUP 8	25.35	5.74

LABORERS CLASSIFICATIONS

GROUP 1: Common Laborer

GROUP 2: Power Viribrator

GROUP 3: Torchman (demolition), Mortarman

GROUP 4: Power Tamper

GROUP 5: Jackhammer & Air Spade, Chainsaw, Swinging Stage and Boatswain Chair, Cement Gun Nozzleman, Hod Carrier, Plaster Tender, and Tunnel Man.

GROUP 6: Tile Layers, Bottom Men

GROUP 7: Caisson Laborers, Dynamiters

GROUP 8: Asbestos Abatement Laborers, Toxic and Hazardous Waste Removal Laborers, Dosimeter (any device) Monitoring Nuclear Exposure

LABO0196C 08/01/2000

	Rates	Fringes
MONROE COUNTY (Columbia)		
LABORERS		
GROUP 1	19.60	9.30
GROUP 2	19.85	9.30
GROUP 3	20.10	9.30
GROUP 4	21.125	9.30

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and

applying of mastic such as sulfa-seal and/or other coal derivatives

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GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0231C 05/01/1999		
	Rates	Fringes
FULTON COUNTY		
LABORERS:	19.08	8.63

LABO0231D 05/01/1999		
	Rates	Fringes
HANCOCK & MCDONOUGH COUNTIES:		
LABORERS	18.465	8.63
Dynamite Men, Asbestos Abatement Laborer, Hazardous Waste Worker	19.465	8.63

LABO0231G 05/01/1999		
	Rates	Fringes
ADAMS COUNTY		
LABORERS	13.89	8.38

LABO0253A 05/01/2001		
	Rates	Fringes
BROWN, CASS, MASON, MORGAN, PIKE, SCHUYLER, & SCOTT COUNTIES		
LABORERS:		
GROUP 1	18.36	8.48
GROUP 2	18.56	8.48
GROUP 3	18.71	8.48
GROUP 4	19.36	8.48

LABORERS CLASSIFICATIONS

GROUP 1: COMMON - All sewer workers plus depth pay; Asbestos Abatement; Asphalt plant laborers; Bankmen on Floating plant; Batch dumpers; Carpenter tender; Cleaning lumber; Cofferdam workers plus depth pay; Deck hand, Dredge hand & shore laborer; Dispatchers; Driving of stakes; Stinglines for all machinery; Fencing laborer; Firemen or salamander tenders; Fireproofing fire shop laborers; Flagman; Form handlers; Gravel box men, Dumpmen & Spotters; Hazardous Waste Workers; Janitors; Laborers w/dewatering systems; Material Checkers & handlers; Pit men; Plastic installers; Planting & removal of trees; Rip-rapmen; Scaffold workers; Tool cribmen; Track laborers; Unloading explosives; Unloading & carrying lath; Unloading & carrying rebars; Wrecking; Dismantling buildings; Wallmen & housemovers; Wrecking Laborers

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GROUP 2: SEMI-SKILLED - Asphalt workers with machine; Asphalt raker & layer; Cement handler; Cement silica, Clay, Fly ash, Lime & plasters, handlers (bulk or bag); Chain saw; Chloride handler; Concrete workers (wet); Grade checker; Handling material treated with oil, creosote, asphalt or any foreign material harmful to skin or clothing; Kettle tar men on concrete paving, placing, cutting & tying of reinforcing; Signal man on crane; Tank cleaner; Tunnel tenders in free air

GROUP 3: SKILLED - Air tamping hammerman; Caisson workers plus depth pay; Concrete burning machine operator; Concrete saw; Coring machine; Curb asphalt machine operator; Gunnite nozzle men; Jackhammer & drill operators; Laborers handling masterplate or similar materials; Laborers tending masons with hot material or where foreign materials are used; Layout man and/or Tile Layer; Lead Man on sewer work; Luteman; Mason Tenders; Mortar Mixer Opr; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laser Beam Opr.; Multiple concrete duct - leadman; Plasterer tender; Ready mix scaleman, portable or temporary plant; Screedman on asphalt pavers; Steel form setters (street & hwy); Vibrator operator; Welders, Cutters, burners & torchmen.

GROUP 4: Dynamite Men

LABO0287A 05/01/2001

	Rates	Fringes
BUREAU COUNTY		
LABORERS:		
GROUP 1	21.01	7.20
GROUP 2	21.21	7.20
GROUP 3	21.41	7.20
GROUP 4	22.01	7.20

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Backmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing,

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cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker and Hazardous Waste Worker

LABO0309C	05/01/2000		
		Rates	Fringes
ROCK ISLAND COUNTY			
LABORERS:			
	GROUP 1	18.70	6.55
	GROUP 2	20.20	6.55

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer, Carpenter Tender, Tool Cribman, Salamander Tender, Flagman, Form Handler, Floor Sweeper, Material Handler, Fencing Laborer, Cleaning Lumber, Unloading Explosives, Removal of trees, Wrecking Laborer, Unloading of Re-Bars, Scaffold worker, Signal Man on Crane, Handling of Materials treated with creosote, Kettle Man, Prime Mover or motorized unit used for wet concrete or handling of building materials, Vibrator Operator, Mortar Mixer, Power Tools used under the jurisdiction of Laborers, Sand Points, Gunnite Nozzle Men, Welders, cutters, burners, & torchmen, Chain Saw Operator, Jackhammer, Drill, Air Tamping Hammerman, Paving Breakers, Concrete Saw, Concrete Burning Machine Operator, Coring Machine operator-Hod Carrier & Plasterer Tender, Caisson worker after 6 foot depth, Tunnel Miners, Mixerman, (plaster only), Pump Man

GROUP 2: Dynamite Man, Asbestos Abatement Worker (other than mechanical systems), Hazardous Waste Abatement Work

LABO0309E	05/01/2000		
		Rates	Fringes
MERCER COUNTY			
LABORERS:			
	GROUP 1	18.70	6.55

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GROUP 2

20.20

6.55

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer, Carpenter Tender, Tool Cribman, Salamander Tender, Flagman, Form Handler, Floor Sweeper, Material Handler, Fencing Laborer, Cleaning Lumber, Unloading Explosives, Removal of trees, Wrecking Laborer, Unloading of Re-Bars, Scaffold worker, Signal Man on Crane, Handling of Materials treated with creosote, Kettle Man, Prime Mover or motorized unit used for wet concrete or Handling of building materials, Vibrator Operator, Mortar Mixer, Power Tools used under the jurisdiction of Laborers, Sand Points, Gunnite Nozzle Men, Welders, cutters, burners, & torchmen, Chain Saw Operator, Jackhammer, Drill, Air Tamping Hammerman, Paving Breakers, Concrete Saw, Concrete Burning Machine Operator, Coring Machine operator-Hod Carrier & Plasterer Tender, Caisson worker after 6 foot depth, Tunnel Miners, Mixerman, (plaster only), Pump Man

GROUP 2: Dynamite Man, Asbestos Abatement Worker (other than mechanical systems), Hazardous Waste Abatement Work

LABO0362B 05/01/2001		
	Rates	Fringes
MCLEAN COUNTY		
LABORERS	21.15	8.23
Dynamite Men; Asbestos Abatement and Hazardous Waste Removal Laborers	22.15	8.23

LABO0393A 05/01/2001		
	Rates	Fringes
LA SALLE COUNTY (Marseilles & vicinity) & (Streator & Vicinty):		
LABORERS:		
GROUP 1	22.01	6.20
GROUP 2	22.21	6.20
GROUP 3	22.41	6.20
GROUP 4	23.01	6.20

LABORERS CLASSIFICATIONS

GROUP 1: SKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foriegn material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer

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workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Bankmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker and Hazardous Waste Worker

LABO0422A 08/01/1995

	Rates	Fringes
PUTNAM COUNTY		
LABORERS:		
GROUP 1	15.11	7.15
GROUP 2	15.31	7.15
GROUP 3	15.51	7.15
GROUP 4	16.11	7.15

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and

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shore laborers; Bankmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker; and Hazardous Waste Worker

LABO0459E 08/01/2000

Rates Fringes
 RANDOLPH (Sparta & vicinity) and WASHINGTON COUNTIES:

LABORERS

GROUP 1	19.70	9.20
GROUP 2	19.95	9.20
GROUP 3	20.20	9.20
GROUP 4	21.225	9.20

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

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LABO0477A 05/01/2001

MENARD COUNTY (Southern 1/2 including the City of Petersburg)

LABORERS:

	Rates	Fringes
GROUP 1	20.98	7.60
GROUP 2	21.18	7.60
GROUP 3	21.33	7.60
GROUP 4	22.33	7.60

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All sewer workers plus depth pay; Asbestos Abatement; Asphalt plant laborers; Bankmen on Floating plant; Batch dumpers; Carpenter tender; Cleaning lumber; Cofferdam workers plus depth pay; Deck hand, Dredge hand & shore laborer; Dispatchers; Driving of stakes; Stringlines for all machinery; Fencing laborer; Firemen or salamander tenders; Fireproofing fire shop laborer; Flagmen; Form handlers; Gravel box men, Dumpmen & Spotters; Hazardous Waste Workers; Janitors; Laborers with dewatering systems; Material Checkers & handlers; Pit men; Plastic installers; removal of trees; Rip-rap men; Scaffold workers; Tool cribmen; Track laborers; Unloading explosives; Unloading & carrying lath; Unloading & carrying rebars; Wrecking, Dismantling buildings; Wallmen & housemovers; Wrecking Laborers.

GROUP 2: SEMI-SKILLED - Asphalt workers with machine; Asphalt raker & layer; Cement handler; Cement silica, clay, Fly ash; Lime & plasters (bulk or bag); Chain saw; Chloride handler; Concrete workers (wet); Grade checker; Handling material treated with oil, creosote, asphalt or any foreign material harmful to skin or clothing; Kettle tar men; on concrete paving, placing, cutting & typing of reinforcing; Signal man on crane; Tank cleaner; Tunnel tenders in free air

GROUP 3: SKILLED - Air tamping hammerman; Caisson workers plus depth pay; Concrete burning machine operator; Concrete saw; coring machine; Curb asphalt machine operator; Gunnite nozzle men; Jackhammer & drill operators; Laborers handling masterplate or similar materials; Laborers tending masons with hot material or where foreign materials are used; Laser Beam Operator; Layout Man and/or Tile Layer; Lead man on sewer work; Luteman; Mason Tenders; Mortar Mixer Operator; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Multiple concrete duct- leadman; Plasterer tender; Ready-mix scalemen; Screedman on Asphalt pavers; Steel Form Setters (street and highway); Vibrator Operators; Welders, Cutters, Burners, Torchmen

GROUP 4: Dynamite man

LABO0538B 05/01/2001

HENDERSON, KNOX, & WARREN COUNTIES

	Rates	Fringes
LABORERS	20.17	8.90

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Dynamite Men; Asbestos Abatement
 Laborer; Hazardous Waste Worker 21.17 8.90

LABO0581A 08/01/2000

	Rates	Fringes
CLINTON COUNTY (Carlyle, Trenton & vicinity)		
LABORERS		
GROUP 1	19.85	9.05
GROUP 2	20.10	9.05
GROUP 3	20.35	9.05
GROUP 4	21.375	9.05

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0622A 08/01/2000

	Rates	Fringes
BOND (Greenville) COUNTY:		
LABORERS:		
GROUP 1	20.75	8.15
GROUP 2	21.00	8.15
GROUP 3	21.25	8.15
GROUP 4	22.275	8.15

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and

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applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0646C	08/01/1997		
		Rates	Fringes
JERSEY (Jerseyville) COUNTY:			
LABORERS			
GROUP 1		20.90	5.50
GROUP 2		21.15	5.50
GROUP 3		21.40	5.50
GROUP 4		22.425	5.50

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3:- Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0677A	08/01/2000		
		Rates	Fringes
BOND (Pocahontas) COUNTY:			
LABORERS			
GROUP 1		23.35	5.55
GROUP 2		23.60	5.55
GROUP 3		23.85	5.55
GROUP 4		24.875	5.55

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom

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of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0703D 05/01/2001		
	Rates	Fringes
LOGAN & MENARD (Northern 1/2) COUNTIES		
LABORERS:	20.47	8.67

LABO0727A 05/01/2001		
	Rates	Fringes
CARROLL, JO DAVIESS, LEE, OGLE (Except City of Rochelle), STEPHENSON, & WHITESIDE COUNTIES		
LABORERS:		
GROUP 1	20.08	10.90

LABORERS CLASSIFICATIONS

GROUP 1: Carpenter Tender; Tool Cribmen; Firemen or Alamander Tender; Flagman; Gravel Box Men, Dumpmen & Spotters; Form Handlers; Material Handlers; Fencing Laborers; Cleaning Lumber; Pit Men; Material Checkers; Unloading Explosives; Removal of Trees; Ashpalt Workers with Machine & Layers; Asphalt Plant Laborers; Wrecking; Fireproofing; Janitors; Driving Stakes, Stringlines for all Machinery; Window Cleaning; Demolition Worker. Asbestos Abatement Worker; Hazardous Waste Worker; Handling of any Materials with any Foreign Matter Harmful to skin or clothing; Track; Cement Handler; Chloride Handler; Unloading & Laborers with Steel Workers & Rebars; Concrete Workers Wet; Tunnel Tenders in free air; Batch Dumper; Mason Tender; Kettle & Tar Men; Tank Cleaner; Plastic Installer; Scaffold Worker; Motorized Buggies or Motorized Unit used for Wet Concrete or Handling of Building Materials; Laborers with Dewatering Systems; Sewer Workers Plus Depth; Vibrator Operator; Cement Silica, Clay, Fly Ash, Lime & Plasters, Handlers (bulk or bag); Cofferdam Workers Plus Depth; Concrete Paving, Placing, Cutting & Tying of Reinforcing; Deck Hand, Dredge Hand and Shore Laborers; Bankmen on Floating Plant; Grade Checker; Power Tools; Front End Man on Chip Spreader; Caisson Worker Plus Depth, Gunnite Nozzle Man; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chainsaw Operator; Jackhammer & Drill Oper.; Layout Man or Tile Layer; Stee; Form Setter (street & hwy); Air Tamping Hammermen; Signal Man on Crane; Concrete Saw Operator; Screedman on Aspahl Pavers; Tending Masons with Hot Material or where Foreign Materials are used; Mortar Mixer Operator; Multiple Concrete Duct-Leadman; Luteman; Asphalt Raker; Curb Asphalt Machine

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Operator; Ready Mix Scaleman, Permanent, Portable or Temporary Plant; Laborers Handling Master Plate or similar materials; Laser Beam; Concrete Burning Machine Operator; Coring Machine Operator; Plaster Tender; Underpinning and Shoring of Buildings; Pump Men; Manhole and Catch Basin; Dirt & Stone Tamper; Hose Men on Concrete Pump.

LABO0742B	08/01/2000		
		Rates	Fringes
CLINTON COUNTY (New Baden & vicinity)			
LABORERS:			
GROUP 1		19.60	9.70
GROUP 2		19.85	9.70
GROUP 3		20.10	9.70
GROUP 4		20.45	9.70

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Working on Bottom of Sewer Trenches; using burning or cutting torches; working with mastic; working with creosote or other harmful material; using chain saws; high work of 25+ feet.

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0852B	05/01/2001		
		Rates	Fringes
HENRY & STARK (Western 1/2) COUNTIES			
LABORERS			
		19.99	8.85
Dynamite Men; Asbestos Abatement			
Laborer; Hazardous Waste Worker		20.99	8.85

LABO0911A	05/01/2001		
		Rates	Fringes
LA SALLE COUNTY (Ottawa & vicinity)			
LABORERS:			
GROUP 1		22.01	6.20
GROUP 2		22.21	6.20
GROUP 3		22.41	6.20
GROUP 4		23.01	6.20

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

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GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Bankmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker and Hazardous Waste Worker

LABO0925C 08/01/2000

	Rates	Fringes
RANDOLPH COUNTY (Chester & vicinity):		
LABORERS		
GROUP 1	19.60	9.30
GROUP 2	19.85	9.30
GROUP 3	20.10	9.30
GROUP 4	21.125	9.30

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom

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of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: - Dynamite and Powder Men.

LABO0950B 08/01/2000

	Rates	Fringes
MACOUPIN (Carlinville, Gillespie, Mt. Olive, Shipman, and Staunton) COUNTY:		
LABORERS		
GROUP 1	17.95	10.95
GROUP 2	18.20	10.95
GROUP 3	18.45	10.95
GROUP 4	19.475	10.95

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO0968B 08/01/1997

	Rates	Fringes
CALHOUN COUNTY:		
LABORERS:		
GROUP 1	25.80	.60
GROUP 2	26.05	.60
GROUP 3	26.30	.60
GROUP 4	27.325	.60

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

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GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4 - Dynamite and Powder Men.

LABO0996B 05/01/2001		
	Rates	Fringes
LIVINGSTON, MARSHALL, STARK (Eastern 1/2) & WOODFORD COUNTIES		
LABORERS:		
GROUP 1	20.83	8.45
GROUP 2	21.83	8.45

LABORERS CLASSIFICATIONS

GROUP 1: Carpenter tenders; Mason tenders; Plasterers tenders; Mortar mixers; Kettlemen and carrier of hot stuff; Tool crib men; Firmen or salamander tenders; Flagman; Installation and maintenance of temporary gas-fired heating units; Gravel box men; Dumpmen and spotters; Fencing laborers; Cleaning lumber; Pit men; Unloading explosives; Asphalt plant laborers; Fireproofing laborers; Janitors (final clean-up); Asbestos abatement and removal laborers; Handling of materials treated with oil, creosote, chloride, asphalt, and/or foreign material harmful to skin or clothing; Laborers with dewatering systems; Gunnite nozzle men; Laborers tending masons with hot material or where foreign materials are used; Laborers tending masons with hot material or where foreign materials are used; Laborers handling masterplate or similar materials; Concrete burning machine operator; Mateerial selector men working with fireback or combustable material; Dynamite men; Track laborers; Cement handlers; Chloride handlers; The unloading and laborers with steel workers and re-bars; Concrete workers (wet); Luteman; Asphalt raker; Curb asphalt machine operator; Ready-mix scalemenn, permanent, portable or temporary plant; Coring machine operator; Plasterers tenders; Underpinning and shoring of buildings; Fire watch; Signaling of all power equipment, to include trucks, excavating equipment, etc.; Tree topper ot trimmer; Batch dumpers; Kettle and tar men; Tank cleaners; Plastic installers; Scaffold workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Sewer workers plus depth; Rod and chain men; Vibrator operators; Mortar mixer operator; Cement silica, clay, fly, ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; on concrete paving, placing, cutting and tying of reinforcing; deck hand, dredge hand and shore laborers; Bankmen on floating plant;

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Asphalt workers with machine and layers; Grade checkers; Power tools; Cassion workered plus depth; Welders, cutters; burners and torch men; Chain saw operators; Paving breaker, jackhammer and drill operator; Layout man and/or tile layer; Steel form setters - street and highway; Air tamping hammerman; Signal man on crane; Concrete saw operator; Screen man on asphalt pavers; front end man on chip spreader; Wrecking laborers; Land scrapers; Scaffold workers; Handling, lighting and maintaining of all lights, flares and flashers; Cleaning of windows, doors, walls, floors, scrubbing and waxing of floors and covering and protection; Building construction shall be done by Laborers at the minimum rate that prevails in this agreement; Moving, signalling, hooking on and unhooking, flagging of all power machines; Driving stakes and setting of all stringlines for all electronic devices and all machinery.

GROUP 2: Dynamite Men; Asbestos Abatement Laborer; Hazardous Waste Worker

LABO1084B 08/01/2000

MONTGOMERY (Hillsboro) AND BOND (Sorento) COUNTY

LABORERS

	Rates	Fringes
GROUP 1	19.85	9.05
GROUP 2	20.10	9.05
GROUP 3	20.35	9.05
GROUP 4	21.375	9.05

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers.

GROUP 2: Work in Septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on Bottom of Sewer Trenches on Final Grading, Laying or Caulking of performed sectional Sewer Pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick Mason Tenders and Plasterer Tenders.

GROUP 4: Dynamite and Powder Men.

LABO1203A 05/01/2001

LA SALLE (La Salle & vicinity), & PUTNAM COUNTIES:

LABORERS:

	Rates	Fringes
GROUP 1	20.01	8.20
GROUP 2	20.21	8.20

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GROUP 3	20.41	8.20
GROUP 4	21.01	8.20

LABORERS CLASSIFICATIONS

GROUP 1: UNSKILLED - All classifications not listed below

GROUP 2: SEMI-SKILLED - Handling of materials treated with oil, creosote, asphalt and/or foreign material harmful to skin or clothing; Track laborers; Cement handlers; Chloride handlers; Unloading and laborers with Steel Workers and Re-bars; Concrete Workers (wet); Batch Dumpers; Mason Tenders; Kettle and Tar Men; Tank Cleaners; Plastic Installers; Scaffold Workers; Motorized buggies or motorized unit used for wet concrete or handling of building materials; Laborers with de-watering systems; Sewer workers plus depth; Vibrator Operators; Motor Mixer Operators; Cement Silica, clay, fly ash, lime and plasters, handlers (bulk or bag); Cofferdam workers plus depth; Concrete paving, placing, cutting and tying of reinforcing; Deck hand, dredge hand and shore laborers; Bankmen on floating plant; Asphalt workers with machine and layers; Grade checker; Power tools; Driving all stakes, stringlines for all machinery; Setting and building of manholes and catch basins; Stripping of all concrete forms except paving forms; All concrete paving and slope walls, placing, cutting and tying of reinforcing (re-bars and wire mesh)

GROUP 3: SKILLED - Caisson Workers plus depth; Gunnite Nozzle Men; Lead Man on Sewer Work; Welders, Cutters, Burners & Torchmen; Chain Saw Operators; Paving Breaker, Jackhammer & Drill Operators; Layout Man and/or tile layer; Steel Form Setters (Street & Hwy); Air Tamping hammerman; Signal man on Crane; Concrete Saw Operator; Screenman on Asphalt Pavers; Front End Man on Chip Spreader; Laborers tending masons with hot materials or where foreign materials are used; Multiple Concrete duct-leadman; Luteman; Asphalt Raker; Curb Asphalt Machine Operator; Ready mix scalemen, permanent, portable or temporary plant; Laborers handling masterplate or similar materials; Laser Beam Operator; Coring Machine Operator; Plasterer Tenders; Underpinning and Shoring of Building; Material selector when working with firebrick or castable materials; Fire Watch; Signalling of all power equipment; Tree Topper or Trimmer

GROUP 4: Dynamite man; Asbestos Abatement Worker and Hazardous Waste Worker

MARB0003E	05/01/1998		
		Rates	Fringes
FULTON, HENDERSON, KNOX, MARSHALL, WARREN, & WOODFORD COUNTIES			
MARBLE & TILE SETTER, TERRAZZO WORKERS		20.78	7.22

MARB0004D	05/01/1997		
		Rates	Fringes
MENARD COUNTY			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MARBLE AND TILE SETTERS AND TERRAZZO WORKERS	21.52	5.05
BOND, CLINTON, MONROE, RANDOLPH, & WASHINGTON COUNTIES		
TERRAZZO WORKERS	22.95	2.40
BOND, MONROE, & WASHINGTON COUNTIES		
TILE SETTERS	19.18	5.56
CASS, GREENE, MACOUPIN, MORGAN, SCHUYLER & SCOTT COUNTIES		
MARBLE, TILE SETTERS, & TERRAZZO	18.24	4.28
HANCOCK & MCDONOUGH COUNTIES		
TERRAZZO WORKERS	18.24	4.28
LOGAN & MASON COUNTIES		
MARBLE, TILE SETTERS, & TERRAZZO	19.65	1.50
MCLEAN COUNTY		
MARBLE, TILE SETTERS, & TERRAZZO	18.73	6.25
RANDOLPH COUNTY		
MARBLE & TILE SETTERS	18.31	4.10

MARB0007B 05/01/2001		
	Rates	Fringes
MERCER & ROCK ISLAND COUNTIES		
MARBLE SETTERS, TILE SETTERS, TERRAZZO WORKERS	20.84	6.35

MARB0031A 06/01/2000		
	Rates	Fringes
BOONE, CARROLL, DE KALB, JO DAVIESS, LEE, OGLE, STEPHENSON, WHITESIDE, & WINNEBAGO COUNTIES		
MARBLE SETTER, TILE SETTER, TERRAZZO WORKER	21.41	7.85
MARBLE FINISHER	19.71	6.25

MARB0061A 05/01/1993		
	Rates	Fringes
BUREAU, DE WITT, HENRY, LA SALLE, LIVINGSTON, MERCER, PUTNAM, ROCK ISLAND, & STARK COUNTIES		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MARBLE & TILE FINISHER	16.47	3.80
TERRAZZO FINISHER	16.60	3.80
BASE MACHINE OPERATOR	16.85	3.80

MARB0061C 05/01/1994

	Rates	Fringes
FULTON, HANCOCK, HENDERSON, KNOX, MARSHALL, MC DONOUGH, MC LEAN, WARREN, & WOODFORD COUNTIES		

MARBLE & TILE FINISHER	17.39	5.32
TERRAZZO FINISHER	17.39	5.32
BASE MACHINE OPERATOR	17.39	5.32

BOND, CLINTON, MONROE, RANDOLPH, & WASHINGTON COUNTIES

TILE FINISHER	11.70	1.61
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MARB0109D 05/01/1993

	Rates	Fringes
ADAMS, BROWN, CASS, CALHOUN, GREENE, JERSEY, LOGAN, MACOUPIN, MASON, MENARD, MONTGOMERY, MORGAN, PIKE, SCHUYLER, & SCOTT COUNTIES		

MARBLE AND TILE FINISHER	18.65	
TERRAZZO FINISHER & FLOOR MACHINE	18.80	
TERRAZZO BASE MACHINE	18.55	

MARB0114A 06/01/1993

	Rates	Fringes
BOONE, CARROLL, DE KALB, JO DAVIESS, LEE, OGLE, STEPHENSON, WHITESIDE, & WINNEBAGO COUNTIES		

MARBLE, TILE & TERRAZZO FINISHERS	14.65	2.10
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PAIN0030B 05/01/2000

	Rates	Fringes
DEKALB COUNTY		

PAINTERS:		
Brush, Drywall Taper/Finisher		
Sandblaster, and Spray	27.42	7.20

PAIN0030E 05/01/1999

	Rates	Fringes
JO DAVIESS COUNTY		

PAINTERS:		
Brush, Roller, Paperhanger, and Taper	23.20	6.65
Spray, Structural Steel	23.20	6.65

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PAIN0030G 05/01/1999

LEE, OGLE, STEPHENSON, & WINNEBAGO COUNTIES: Rates Fringes

PAINTERS:

Brush, Roller	23.20	6.65
Sandblasting	23.20	6.65
Spray	23.20	6.65

PAIN0030H 05/01/1999

BOONE COUNTY Rates Fringes

PAINTERS:

Brush & Roller	23.20	6.65
Sandblasting	23.20	6.65
Spray	23.20	6.65

PAIN0030L 05/01/1999

BUREAU, LA SALLE, & PUTNAM COUNTIES: Rates Fringes

PAINTERS:

Brush, Roller	22.00	5.80
Spray, Taper	23.00	5.80

PAIN0030T 05/01/1999

FORD, LIVINGSTON, & MCLEAN COUNTIES Rates Fringes

PAINTERS:

Brush	22.00	5.80
Structural Steel; Spray	22.50	5.80
Airless Spray; Bridges	23.00	5.80

PAIN0030X 05/01/1998

HANCOCK, MCDONOUGH, & STARK COUNTIES Rates Fringes

PAINTERS:

Brush, Drywall Taper/Finisher	18.70	6.97
Spray, Pressure Roller, & Sandblast	19.55	6.97

PAIN0058A 05/01/2000

BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN, MONROE, MONTGOMERY, PIKE, & WASHINGTON COUNTIES Rates Fringes

PAINTERS:

Brush	21.82	6.60
Spray, Blasting, Steam Cleaning	23.82	6.60
Taper	22.07	6.60

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PAIN0058Q 05/01/1999

	Rates	Fringes
RANDOLPH COUNTY:		
PAINTERS	18.77	6.03
Epoxy or Toxic-Lead-Based Paint Work-\$1.00 Premium.		

PAIN0090B 05/01/2000

	Rates	Fringes
BROWN, CASS, CHRISTIAN, LOGAN, MENARD, MORGAN, & SCOTT COUNTIES		
PAINTERS:		
Brush, Spray, Roller and Taping	22.69	5.68
Sandblasting	23.69	5.68

PAIN0090F 05/01/2000

	Rates	Fringes
ADAMS COUNTY		
PAINTERS:		
Brush	20.19	5.68
Sandblasting	21.19	5.68

PAIN0157A 05/01/1998

	Rates	Fringes
MARSHALL, & WOODFORD COUNTIES		
PAINTER:		
Brush	18.70	6.97
Spray, Pressure Roller, Sandblast, Bridge & New Structural Steel work	19.55	6.97

PAIN0157C 05/01/1998

	Rates	Fringes
FULTON COUNTY		
PAINTERS:		
Brush	18.70	6.97
Spray, Pressure Roller, Sandblast, Bridge, New Structural Steel work	19.55	6.97

PAIN0157D 05/01/1998

	Rates	Fringes
MASON & SCHULYER COUNTIES		
PAINTERS:		
Brush	18.70	6.97
Spray, Pressure Roller, Sandblast,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Bridge & New Structural Steel Work 19.55 6.97

PAIN0502C 05/01/2000

	Rates	Fringes
CARROLL ,HENDERSON, HENRY, KNOX, MERCER, ROCK ISLAND, WARREN,& WHITESIDE, COUNTIES		

PAINTERS:

Brush, Roller	21.42	7.25
Structural Steel, Taper, Spray	21.92	7.25

PAIN0513C 11/01/2000

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN (Southern part), MONROE, RANDOLPH, & WASHINGTON COUNTIES		

GLAZIERS	25.23	15.34
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PAIN0581G 05/01/2000

	Rates	Fringes
CARROLL,HANCOCK, HENDERSON, JO DAVIESS, KNOX, MCDONOUGH STEPHENSON, WARREN, & WHITESIDE COUNTIES:		

GLAZIERS	19.22	5.60
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HENRY,MERCER, & ROCK ISLAND COUNTIES:

GLAZIERS	20.10	5.60
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PAIN1164B 05/01/1999

	Rates	Fringes
BUREAU, FULTON, LA SALLE, LIVINGSTON, MCLEAN, MARSHALL, PUTNAM, STARK, & WOODFORD COUNTIES		

GLAZIERS	20.72	7.82
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PAIN1168A 05/01/1999

	Rates	Fringes
ADAMS, BROWN, CASS, LOGAN, MACOUPIN (N. PART), MASON, MENARD, MONTGOMERY, MORGAN, PIKE, SCHUYLER & SCOTT COUNTIES		

GLAZIERS	23.65	2.62
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PAIN1355A 04/01/2000

	Rates	Fringes
BOONE, DE KALB, LEE, OGLE, and WINNEBAGO COUNTIES		

GLAZIERS	22.88	8.40
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PLAS0012B 05/01/2000

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	Rates	Fringes
FULTON, MARSHALL, MASON, & WOODFORD COUNTIES		
CEMENT MASONS	21.63	9.00

PLAS0012H 05/01/2000	Rates	Fringes
FULTON (Except Northwestern portion), KNOX, MARSHALL (Western part except Toluca), MASON, WARREN, & WOODFORD (Except Northwestern part & Minonk) COUNTIES		
PLASTERERS	21.71	9.10

PLAS0018B 05/01/2001	Rates	Fringes
CASS & MENARD COUNTIES:		
CEMENT MASONS	23.65	8.20

PLAS0018C 05/01/2001	Rates	Fringes
ADAMS, BROWN, & PIKE COUNTIES:		
CEMENT MASONS	23.65	8.20

PLAS0018D 05/01/2001	Rates	Fringes
HANCOCK, McDONOUGH & SCHUYLER COUNTIES:		
CEMENT MASONS	23.65	8.20

PLAS0018E 06/01/2000	Rates	Fringes
HENDERSON (Northern 1/2), MERCER (Except Southeastern part), & ROCK ISLAND COUNTIES:		
PLASTERERS	24.00	4.00

PLAS0023A 10/01/1994	Rates	Fringes
HENRY (E 1/2) & STARK COUNTIES:		
CEMENT MASONS	20.17	5.60

PLAS0026B 06/01/2000	Rates	Fringes
HENDERSON COUNTY (Southern 1/2)		
PLASTERERS	24.00	4.00

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PLAS0032A	05/01/1998		
		Rates	Fringes
LOGAN COUNTY			
CEMENT MASONS		23.65	2.35
PLASTERERS		17.30	
MORGAN & SCOTT COUNTIES			
CEMENT MASONS		14.83	2.42
PLASTERERS		15.69	2.06

PLAS0059A	05/01/2000		
		Rates	Fringes
CASS & MENARD COUNTIES			
PLASTERERS		22.55	8.20

PLAS0090B	08/01/2000		
		Rates	Fringes
BOND, CALHOUN, CLINTON (Western 1/2 including Beckemeyer), GREENE, JERSEY, MACOUPIN, MONROE, & MONTGOMERY (Excluding the towns of Coalton, Coffen, Fillmore, Nokomis, Ohlman, Wenoah, Witt) COUNTIES:			
CEMENT MASONS		23.10	9.70
PLASTERERS		22.50	9.85

PLAS0143E	05/01/2000		
		Rates	Fringes
LIVINGSTON COUNTY (Southern part except Pontiac)			
CEMENT MASONS		22.63	7.65

PLAS0143F	05/01/2000		
		Rates	Fringes
LIVINGSTON COUNTY (Southern part except Pontiac)			
PLASTERERS		22.89	6.65

PLAS0152B	05/01/1998		
		Rates	Fringes
LIVINGSTON (Remainder), & MCLEAN COUNTIES			
PLASTERERS		23.75	8.20

PLAS0152C	05/01/2000		
		Rates	Fringes
LIVINGSTON(Rainder),MCLEAN, & WOODWARD(Eastern part except Roanoke) COUNTIES:			

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CEMENT MASONS	20.16	10.15

PLAS0152E 05/01/2000		
	Rates	Fringes
DE WITT COUNTY (Northern 1/2)		
CEMENT MASONS	20.16	10.15

PLAS0158D 06/01/1999		
	Rates	Fringes
BUREAU, LA SALLE, LIVINGSTON (Northern part including Pontiac) MARSHALL (Eastern part including Toluca), PUTNAM, & WOODFORD (Northwestern part Including Minonk) COUNTIES		
CEMENT MASONS & PLASTERERS	21.47	6.95

PLAS0206A 05/01/2000		
	Rates	Fringes
FULTON (Northwestern part), & MERCER (Southeastern corner) COUNTIES		
CEMENT MASONS	22.32	4.75

PLAS0206C 05/01/1993		
	Rates	Fringes
FULTON (Northwestern part), & MERCER (Southeastern corner) COUNTIES		
PLASTERERS	18.87	1.50

PLAS0206E 05/01/2000		
	Rates	Fringes
KNOX AND WARREN COUNTIES:		
CEMENT MASONS	22.32	4.75

PLAS0382A 06/01/1994		
	Rates	Fringes
BOONE COUNTY		
CEMENT MASONS	19.00	7.07

PLAS0382B 06/01/1994		
	Rates	Fringes
BOONE COUNTY		
PLASTERERS	17.90	6.90

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PLAS0382C 06/01/1994

	Rates	Fringes
WINNEBAGO COUNTY:		
CEMENT MASONS	19.00	7.07

PLAS0382D 06/01/1994

	Rates	Fringes
WINNEBAGO COUNTY		
PLASTERERS	17.90	6.90

PLAS0542C 04/01/1998

	Rates	Fringes
RANDOLPH COUNTY		
CEMENT MASONS & PLASTERERS	23.15	1.25

PLAS0544C 05/01/2000

	Rates	Fringes
HENDERSON (Northern 1/2), HENRY (Western 1/2), MERCER (Except Southeastern part), ROCK ISLAND, & WHITESIDE (Erie & area Southwest thereof) COUNTIES		
CEMENT MASONS	21.06	6.58
PLASTERERS (HENRY & Whiteside CTYS)	16.94	
HENDERSON COUNTY (Southern 1/2)		
CEMENT MASONS	17.65	
PLASTERERS	17.30	

PLAS0587A 06/01/2000

	Rates	Fringes
CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, AND WHITESIDE (Except Erie and area Southwest thereof) COUNTIES		
CEMENT MASONS	22.80	9.08

PLAS0587B 06/01/2000

	Rates	Fringes
CARROLL, JO DAVIESS, LEE, OGLE, STEPHENSON, & WHITESIDE (Except Erie & Southwest thereof) COUNTIES		
PLASTERERS	23.00	8.98

PLAS0638C 07/01/1995

	Rates	Fringes
DE KALB COUNTY		

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CEMENT MASONS	24.00	7.11
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PLAS0667C 01/01/1994

	Rates	Fringes
CLINTON (Carlyle & East thereof) & WASHINGTON COUNTIES		
CEMENT MASONS	17.45	.01
PLASTERERS	17.55	.01

PLUM0023A 06/01/2000

	Rates	Fringes
BOONE, CARROLL (East of Rt 78 including Mt Carroll), JO DAVIESS, OGLE, STEPHENSON, & WINNEBAGO COUNTIES		
PLUMBERS & PIPEFITTERS	28.80	7.91

PLUM0025A 05/01/2001

	Rates	Fringes
ADAMS, BROWN, HANCOCK (Western 1/2), CARROLL (West of Rt 78 excluding Mt carroll), HENDERSON, HENRY, KNOX, LEE, MERCER, ROCK ISLAND, SCHUYLER (Except Browning, Frederick, and Hickory TWPS), WARREN, & WHITESIDE COUNTIES		
PLUMBERS & PIPEFITTERS	27.95	9.60

PLUM0063B 05/01/2001

	Rates	Fringes
FULTON, HANCOCK (Eastern 1/2), MCDONOUGH (Except Prairie), MARSHALL (South of Rt 17), MASON (North of Rt 136), SCHUYLER (Browning, Frederick & Hickory TWPS), STARK, & WOODFORD (North of Rt 116 TO Rt 116A, and Area West of Rt 116A to, but excluding Goodfield) COUNTIES		
PLUMBERS & STEAMFITTERS	25.87	10.46

PLUM0081A 06/01/1999

	Rates	Fringes
BUREAU, LA SALLE, LIVINGSTON (North of Pontiac), MARSHALL (North of Rt 17 except City of Pontiac), & PUTNAM COUNTIES		
PLUMBERS & STEAMFITTERS	29.01	6.86

PLUM0099B 05/01/2000

	Rates	Fringes
LIVINGSTON (Pontiac and South of Rt 116 extending East to Ford County), MCLEAN, & WOODFORD (South of Rt 116 to Rt 116A area East of Rt 116A to and including Goodfield) COUNTIES		
PLUMBERS, PIPEFITTERS, & STEAMFITTERS	29.45	7.40

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* PLUM0101A 07/01/2001

Rates Fringes

CLINTON (Western 2/3 including Albers, Aviston, Bartels, Beckemeyer, Breese, Carlyle, Germantown, New Baden, New Memphis, Posey & Trenton), MCDONOUGH (Prairie), MONROE (Hecker), RANDOLPH (Baldwin, Red Bud, Ruma, Tilden), & WASHINGTON (Addieville, Covington, Cardes, Caspars, Damiansville, Darmstrat, Elkhorn, Johannsburg, Lively Grove, Nashville, New Menden, Oakdale, Okawville, Plum, Rentcher, Stone Church Hill & Venedy) COUNTIES

PLUMBERS & PIPEFITTERS 27.90 6.55

PLUM0137C 04/01/2001

Rates Fringes

CASS, LOGAN, MACOUPIN (North of State Rt 108 AND North & East of State Rt 127), MENARD, MONTGOMERY (North and East of ST Rt 127 including Hillsboro & Schram City), MORGAN, PIKE, & SCOTT COUNTIES

PLUMBERS, PIPEFITTERS & STEAMFITTERS 28.75 6.10

PLUM0160B 01/01/2001

Rates Fringes

RANDOLPH COUNTY (Southeastern portion)

PLUMBERS & PIPEFITTERS 25.55 8.25

* PLUM0360A 07/01/2001

Rates Fringes

CLINTON (Northwestern part including St Rose, Frogtown, Jamestown & Keyport), RANDOLPH (Western 1/4 including Kellog, Modoc, Prairie, Durocker, and Roots) AND MONROE (Except Hecker) COUNTIES

PLUMBERS 26.95 7.55

PLUM0439B 01/01/2001

Rates Fringes

CLINTON (Northwestern part including St. Rose, Frogtown, Jamestown and Key Port), RANDOLPH (Western 1/4 including Kellog, Modoc, Prairie, Durocker, and Roots) AND MONROE (Except Hecker) COUNTIES

STEAMFITTERS 25.29 9.15

PLUM0553A 07/01/2000

Rates Fringes

BOND, CALHOUN, GREENE, JERSEY, MACOUPIN (South of Rt 108), & MONTGOMERY (Southwest of Rt 127) COUNTIES

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLUMBERS	27.45	5.80+A
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FOOTNOTE:

A. 4 Hours paid holiday for Christmas Eve if Holiday falls on Monday through Friday

PLUM0612A 06/01/1997		
	Rates	Fringes
DE KALB COUNTY		

PLUMBERS & PIPEFITTERS	26.95	8.45
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PLUM0653B 09/01/2000

	Rates	Fringes
CLINTON (Eastern 1/3) & WASHINGTON (Eastern 1/2) COUNTIES		

PLUMBERS & STEAMFITTERS	25.05	7.65
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ROOF0002F 03/01/2000

	Rates	Fringes
BOND, CALHOUN, CLINTON, GREENE, JERSEY, MACOUPIN (Southern 1/2), MONROE, PIKE (Rrmainder), RANDOLPH, & WASHINGTON COUNTIES		

ROOFERS:

Roofers	22.30	6.45
Kettlemen	20.10	6.45

ROOF0011G 06/01/2000

	Rates	Fringes
JO DAVIESS, LEE, LIVINGSTON (East of Route 47), OLGE, STEPHENSON, WHITESIDE (Sterling and Rock Falls), and WINNEBAGO COUNTIES		

ROOFERS	29.15	5.69
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ROOF0032B 07/01/2000

	Rates	Fringes
HENDERSON, HENRY, KNOX, MCDONOUGH (Western 1/2 including Macomb), MERCER, ROCK ISLAND, WHITESIDE (excluding Sterling and Rock Falls), & WARREN COUNTIES		

ROOFERS	20.43	7.16
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ROOF0055A 06/01/1997

	Rates	Fringes
BUREAU, LA SALLE, MARSHALL (Northeastern 1/2), & PUTNAM COUNTIES		

ROOFERS	19.50	5.76
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOF0069B 05/30/2000

	Rates	Fringes
FULTON, LIVINGSTON (all towns to Rt. 47), MARSHALL (Camp Grove, Hallock Held, Henry Lacon, LaRose, LaPrairie, Pattonsburg, Sparland, Toluca, Washburn and Wilburn), McDONOUGH (Adair, Bushnell, Industry, Prairie City, Bardolph, Good Hope, New Philadelphia and Walnut Grove), McLEAN, STARK, & WOODFORD COUNTIES		

ROOFERS	20.50	7.90
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ROOF0069D 12/01/1999

	Rates	Fringes
BROWN, PIKE (Northern 1/2) AND SCHUYLER COUNTIES:		

ROOFERS	15.50	3.50
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ROOF0069E 12/01/1999

	Rates	Fringes
ADAMS AND HANCOCK COUNTIES:		

ROOFERS	15.50	3.50
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ROOF0112A 06/01/2001

	Rates	Fringes
CASS, LOGAN, MACOUPIN (Northern 1/2), MASON, MENARD, MONTGOMERY, MORGAN, & SCOTT COUNTIES		

ROOFERS	21.95	7.80
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SFIL0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	29.04	6.00

SHEE0001A 06/01/1998

	Rates	Fringes
BUREAU, LA SALLE, MARSHALL, PUTNAM & STARK COUNTIES		

SHEET METAL WORKERS	22.60	7.86
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SHEE0001F 05/01/1999

	Rates	Fringes
FULTON, McLEAN, & WOODFORD COUNTIES		

SHEET METAL WORKERS	21.67	9.63
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SHEE0091B 12/01/2000

	Rates	Fringes
CARROLL (West of Hwy 78), HENRY, JO DAVIESS (West of Hwy 78),		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 KNOX, MCDONOUGH, MERCER, ROCK ISLAND, WARREN & WHITESIDE (West of
 Hwy 78) COUNTIES

SHEET METAL WORKERS	22.18	3%+10.66
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SHEE0091C 06/01/2000

	Rates	Fringes
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ADAMS, CALHOUN, HANCOCK, HENDERSON, & PIKE COUNTIES

SHEET METAL WORKERS	21.50	3%+10.36
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SHEE0218A 06/01/1999

	Rates	Fringes
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BROWN, CASS, LOGAN, MASON, MENARD, MORGAN, SCHUYLER, & SCOTT
 COUNTIES

SHEET METAL WORKERS	23.42	9.22
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SHEE0219A 12/01/2000

	Rates	Fringes
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BOONE, CARROLL (Eastern 1/2), DEKALB, JO DAVIESS (East of Hwy 78)
 LEE, OGLE, STEPHENSON, WHITESIDE, & WINNEBAGO COUNTIES

SHEET METAL WORKERS	26.70	10.08
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SHEE0265E 12/01/2000

	Rates	Fringes
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LIVINGSTON COUNTY:

SHEET METAL WORKERS	29.65	9.31+3%
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SHEE0268A 07/01/1999

	Rates	Fringes
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BOND, CLINTON, GREENE, JERSEY, MACOUPIN, MONROE, MONTGOMERY,
 RANDOLPH, WASHINGTON & COUNTIES

SHEET METAL WORKERS	23.57	8.84
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TEAM0025C 04/01/1995

	Rates	Fringes
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DEKALB, LEE (E. of Route # 51), LIVINGSTON (excluding Reading,
 New Town, Sunbury, Nevada, Long Point & Amity), OGLE (E. of Rt.
 51) & WOODFORD (Remainder) COUNTIES

TRUCK DRIVERS

2 or 3 Axles	20.90	206.00/wk
4 Axles	21.05	206.00/wk
5 Axles	21.25	206.00/wk
6 Axles	21.45	206.00/wk

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TEAM0065C 05/01/2001

	Rates	Fringes
ADAMS, BONDS, BROWN, BUREAU, CALHOUN, CARROLL (Except area North of Rt. 72 & East of Rt. 78), CASS, CLINTON, FULTON, GREENE, HANCOCK, HENDERSON, HENRY, JERSEY, JO DAVIESS (West of Rt. 78 including Stockton), KNOX, LASALLE, LEE (Except area East of Rt. 51), LIVINGSTON (Reading, New Town, Sunbury, Nevada, Long Point & Amity), LOGAN, MARSHALL, MASON, MCDONOUGH, MCLEAN, MACOUPIN, MENARD, MERCER, MONROE, MONTGOMERY, MORGAN, OGLE (Except area East of Rt. 51), PIKE, PUTNAM, RANDOLPH, ROCK ISLAND, SCHUYLER, SCOTT, STARK, WARREN, WASHINGTON, WHITESIDE, & WOODFORD (Northwestern corner) COUNTIES		

TRUCK DRIVERS:

GROUP 1	23.19	4.36+a
GROUP 2	23.59	4.36+a
GROUP 3	23.79	4.36+a
GROUP 4	24.04	4.36+a
GROUP 5	24.79	4.36+a

FOOTNOTE:

a. \$85.00 per week.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on 2 Axle Trucks Hauling Less Than 9 Tons. Air Compressor and Welding Machines & Brooms, Including Those Pulled by Separate Units, Warehousemen, Greasers & Tiremen, Pickup Trucks When Hauling Material, Tools, or Men to and From & on the Job Site, & Fork Lifts up to 6,000 LB. Capacity.

GROUP 2: Two or Three Axle Trucks Hauling more than 9 Ton But Hauling less than 16 Ton, A-Frame Winch Trucks, Hydrolift Trucks, or Similar Equipment When Used For Transportation Purposes. Fork Lifts Over 6,000 LB. Capacity, Winch Trucks, & Four Axle Combination Units.

GROUP 3: Two, Three or Four Axle Trucks Hauling 16 Ton or more, Drivers on Water Pulls, Mechanics, Five Axle or more Combination Units.

GROUP 4: Lowboy & Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

TEAM0325A 06/01/1997

	Rates	Fringes
BOONE COUNTY:		
TRUCK DRIVERS:		
2-3 Axles	19.18	8.00
4 Axles	19.33	8.00
5 Axles	19.53	8.00
6 Axles	19.73	8.00

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

FOOTNOTE:

Additional 20 cents per axle over 6 axles

TEAM0325B 06/01/1997

Rates Fringes
CARROLL (N. of Rt. #72 & E. of Rt. #78), JODAVIESS (E. of Rt. #78, excluding Stockton), STEPHENSON AND WINNEBAGO COUNTIES

TRUCK DRIVERS

	Rates	Fringes
2 or 3 Axles	19.18	8.00
4 Axles	19.33	8.00
5 Axles	19.53	8.00
6 Axles	19.73	8.00

FOOTNOTE: 20 cents additional per axle over 6 axles

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION KS010008 07/06/2001 KS8

Date: July 6, 2001
 General Decision Number **KS010008**

Superseded General Decision No. KS000008

State: **Kansas**

Construction Type:
BUILDING

County(ies):
 LEAVENWORTH

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	05/11/2001
2	05/25/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):
 LEAVENWORTH

ASBE0027A 10/01/2000	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	25.04	11.18

* ASBE0027C 04/17/2001	Rates	Fringes
HAZARDOUS MATERIAL HANDLERS Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging, and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not	20.85	4.85

CARP0007E 04/01/1999	Rates	Fringes
CARPENTERS (Including acoustical ceilings and drywall hanging)	22.95	5.95

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

 ELEC0124C 09/04/2000

	Rates	Fringes
ELECTRICIANS	27.01	10%+8.60

ELEC0124R 09/04/2000

	Rates	Fringes
COMMUNICATION TECHNICIANS	27.01	10% + 8.60

SCOPE OF WORK

Includes the installation, operation, inspection, maintenance, repair, and service of radio, television, recording, voice, sound and vision production and reproduction apparatus, equipment and appliances used for domestic, commercial, educational and entertainment purposes. Any electrical work that becomes the structural part of a building that is not removable, such as the running of conduit or raceways and the setting of boxes in plaster or concrete, shall be done by journeyman electricians.

PAIN0003G 04/01/2001

	Rates	Fringes
DRYWALL FINISHERS	23.10	6.48

PAIN1179B 10/01/2000

	Rates	Fringes
SOFT FLOOR LAYERS	23.00	5.40

PLUM0008G 06/01/2001

	Rates	Fringes
PLUMBERS	30.39	7.66

PLUM0533B 12/01/1999

	Rates	Fringes
PIPEFITTERS	26.38	9.53

ROOF0020F 06/01/2000

	Rates	Fringes
ROOFERS	20.51	6.34

SFKS0314B 07/01/1999

	Rates	Fringes
SPRINKLER FITTERS	25.15	6.95

* SHEE0002F 07/01/2001

	Rates	Fringes
SHEET METAL WORKERS	30.54	8.65

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SUKS1027A 03/31/1994

	Rates	Fringes
CEMENT MASONS	14.215	
GLAZIERS	14.405	4.845
IRONWORKERS:		
STRUCTURAL	10.50	
REINFORCING	8.42	
LABORERS, UNSKILLED	8.861	
PAINTERS:		
BRUSH AND SPRAY	15.19	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

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- * a survey underlying a wage determination
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On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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U. S. Department of Labor
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Washington, D. C. 20210

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION KS010010 06/01/01 KS10

General Decision Number KS010010

Superseded General Decision No. KS000010

State: **Kansas**

Construction Type:

BUILDING

County(ies):

GEARY

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	05/11/2001
2	06/01/2001

COUNTY(ies):

GEARY

* PLUM0165E 06/01/2001

	Rates	Fringes
PLUMBERS	24.24	7.35

ROOF0020P 06/01/2000

	Rates	Fringes
ROOFERS	20.56	6.29

SFKS0669B 04/01/1999

	Rates	Fringes
SPRINKLERFITTERS	23.01	6.954

* SHEE0077C 06/01/2001

	Rates	Fringes
SHEETMETAL WORKERS (Including HVAC Duct Work)	23.58	7.34

SUKS1024A 03/01/2000

	Rates	Fringes
BRICKLAYERS	18.00	
CARPENTER (Including Drywall Hanging and Excluding Installation, Batt)	12.93	3.01
CEMENT MASON	11.00	0.44

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS:

Unskilled (Excluding Blown
Insulation) 8.42

PAINTER, BRUSH/ROLLER
(Including Drywall Finishing) 11.39

POWER EQUIPMENT OPERATOR:

Backhoe 13.19 2.68
Rollers (All Types) 10.53

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

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listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
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- * a Wage and Hour Division letter setting forth a
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- * a conformance (additional classification and rate)
ruling

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION KS010011 06/01/01 KS11

General Decision Number KS010011

Superseded General Decision No. KS000011

State: **Kansas**

Construction Type:

BUILDING

County(ies):

RILEY

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001
2	06/01/2001

COUNTY(ies):

RILEY

* PLUM0165A 06/01/2001

	Rates	Fringes
PLUMBERS	24.24	7.35

ROOF0020P 06/01/2000

	Rates	Fringes
ROOFERS	20.56	6.29

SFKS0669B 04/01/1999

	Rates	Fringes
SPRINKLERFITTERS	23.01	6.954

* SHEE0077C 06/01/2001

	Rates	Fringes
SHEETMETAL WORKERS (Including HVAC Duct Work)	23.58	7.34

SUKS1029A 03/01/2000

	Rates	Fringes
BRICKLAYERS	18.00	
CARPENTERS (Including Drywall Hanging and Excluding Insulation, Batt)	12.93	3.01
CEMENT MASONS	11.00	0.44

LABORERS:

Unskilled (Excluding Blown

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Installation) 8.42

PAINTER:

Brush/Roller (Including Drywall
Finishing) 11.39

POWER EQUIPMENT OPERATORS:

Backhoe 13.19 2.68
Rollers (All Types) 10.53

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
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WAGE DETERMINATION APPEALS PROCESS

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- * a survey underlying a wage determination
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ruling

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Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION KY010029 07/06/2001 KY29

Date: July 6, 2001

General Decision Number **KY010029**

Superseded General Decision No. KY000029

State: **Kentucky**

Construction Type:

BUILDING

County(ies):

BALLARD	GREENUP	MASON
BRACKEN	HANCOCK	NELSON
BULLITT	HART	OLDHAM
CALDWELL	HENDERSON	OWEN
CALLOWAY	HENRY	ROBERTSON
CARLISLE	HICKMAN	ROWAN
CARROLL	HOPKINS	SHELBY
CARTER	LARUE	SPENCER
CRITTENDEN	LAWRENCE	TAYLOR
FLEMING	LEWIS	TODD
FULTON	LIVINGSTON	TRIGG
GALLATIN	LYON	TRIMBLE
GRANT	MADISON	UNION
GRAVES	MARION	WASHINGTON
GREEN	MARSHALL	WEBSTER

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	03/23/2001
3	04/06/2001
4	05/04/2001
5	05/18/2001
6	06/08/2001
7	07/06/2001

COUNTY(ies):

BALLARD	GREENUP	MASON
BRACKEN	HANCOCK	NELSON
BULLITT	HART	OLDHAM
CALDWELL	HENDERSON	OWEN
CALLOWAY	HENRY	ROBERTSON
CARLISLE	HICKMAN	ROWAN
CARROLL	HOPKINS	SHELBY
CARTER	LARUE	SPENCER
CRITTENDEN	LAWRENCE	TAYLOR
FLEMING	LEWIS	TODD
FULTON	LIVINGSTON	TRIGG
GALLATIN	LYON	TRIMBLE
GRANT	MADISON	UNION
GRAVES	MARION	WASHINGTON

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

materials, protective coverings,
 coatings and finishings to all types
 of mechanical systems) 18.27 5.01

ASBE0207C 06/29/2000

Rates Fringes
 CARTER, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:

HAZARDOUS MATERIAL HANDLERS (Includes
 preparation, wetting, stripping,
 removal, scrapping, vacuuming,
 bagging & disposing of all
 insulation materials, whether they
 contain asbestos or not, from
 mechanical systems) 15.40 3.98

ASBE0207S 06/01/2000

Rates Fringes
 HAZARDOUS MATERIAL HANDLERS (Includes
 preparation, wettings, stripping,
 removal, scrapping, vacuuming,
 bagging & disposing of all insulation
 materials, whether they contain
 asbestos or not, from mechanical
 systems):

BRACKEN, FLEMING, GALLATIN, GRANT, MASON, OWEN & ROBERTSON
 COUNTIES 15.75 4.30

CALLOWAY, TODD & TRIGG COUNTIES 13.75 4.55

ASBE2070A 06/01/2000

Rates Fringes
 BALLARD, CALDWELL, CARLISLE, CRITTENDEN, FULTON, GRAVES, HANCOCK,
 HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, UNION &
 WEBSTER COUNTIES:

HAZARDOUS MATERIAL HANDLER (Includes
 preparation, wetting, stripping,
 removal, scrapping, vacuuming,
 bagging and disposing of all
 insulation materials, whether they
 contain asbestos or not, from
 mechanical systems) 15.55 4.55

ASBE2070D 06/01/2000

Rates Fringes
 BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MADISON, MARION,
 NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON
 COUNTIES:

HAZARDOUS MATERIAL HANDLERS (Includes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

preparation, wetting, stripping,
removal, scrapping, vacuuming,
bagging & disposing of all insulation
materials, whether they contain
asbestos or not, from mechanical
systems)

13.75 4.55

BOIL0040A 10/01/2000

	Rates	Fringes
BOILERMAKERS	23.95	11.70

* BRIN0004B 04/01/2001

	Rates	Fringes
BALLARD, CALDWELL, CARLISLE, CRITTENDEN, FULTON, GRAVES, HANCOCK, HART, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, UNION & WEBSTER COUNTIES:		

BRICKLAYERS	22.65	7.10
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* BRIN0004G 04/01/2001

	Rates	Fringes
CRITTENDEN, HANCOCK, HENDERSON, LIVINGSTON, UNION & WEBSTER COUNTIES:		

MARBLE SETTERS; TERRAZZO WORKERS; & TILE SETTERS	21.69	6.60
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MARBLE SETTERS' FINISHERS; TERRAZZO WORKERS' FINISHERS; & TILE SETTERS' FINISHERS	16.49	6.60
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BRKY0001B 06/01/2001

	Rates	Fringes
BULLITT, CARROLL, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER & TRIMBLE COUNTIES:		

BRICKLAYERS; CAULKERS; CLEANERS; POINTERS; & STONEMASONS	20.23	5.28
LAYOUT MAN; & SAWMAN	20.48	5.28
REFRACTORY; & ACID BRICK	20.83	5.28

BRKY0001D 06/01/1999

	Rates	Fringes
BULLITT, CARROLL, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER & TRIMBLE COUNTIES:		

MARBLE SETTERS; TERRAZZO WORKERS; & TILE SETTERS	18.60	3.40
MARBLE, TERRAZZO & TILE FINISHERS	12.60	2.80

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRKY0002C 06/01/2000

Rates Fringes
BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

BRICKLAYERS; CAULKERS; CLEANERS;
POINTERS & STONEMASONS 21.96 6.04
REFRACTORY 22.46 6.04

BRKY0002D 12/01/2000

Rates Fringes
BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

MARBLE SETTERS 23.42 5.34
TERRAZZO WORKERS & TILE SETTERS 23.37 5.34

BRKY0002H 12/01/2000

Rates Fringes
BRACKEN, GALLATIN, GRANT, LEWIS & MASON COUNTIES:

MARBLE, TERRAZZO & TILE FINISHERS:
Finishers 18.98 5.34
Marble Sanders, Polishers, Waxers,
& Sawyers 19.05 5.34
Terrazzo Base Grinders (While
operating base grinding machine) 19.40 5.34

BRKY0007B 06/01/1998

Rates Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:

BRICKLAYERS; CAULKERS; CLEANERS;
MARBLE SETTERS; POINTERS;
STONEMASONS; TERRAZZO WORKERS; &
TILE SETTERS 21.67 6.70

BRKY0007F 06/01/2000

Rates Fringes
CARTER, FLEMING, GREENUP, LAWRENCE & ROWAN COUNTIES:

MARBLE, TERRAZZO & TILE FINISHERS 19.09 4.96
TERRAZZO BASE GRINDERS 19.51 4.96
MARBLE SANDERS & POLISHERS 19.16 4.96

BRKY0017A 06/01/1998

Rates Fringes
GREEN, MADISON, OWEN, TAYLOR & WASHINGTON COUNTIES:

BRICKLAYERS; CAULKERS; CLEANERS;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POINTERS; & STONEMASONS	15.50	2.55
LAYOUT MEN	15.75	2.55

BRKY0017B 06/01/1998

	Rates	Fringes
GREEN, MADISON, ROWAN, TAYLOR & WASHINGTON COUNTIES:		
MARBLE SETTERS; TERRAZZO WORKERS; & TILE SETTERS	15.50	2.55
MARBLE, TERRAZZO & TILE FINISHERS	10.15	2.55

BRTN0004C 05/01/1999

	Rates	Fringes
CALLOWAY, TODD & TRIGG COUNTIES:		
BRICKLAYERS	20.16	1.60

CARP0064C 06/01/2001

	Rates	Fringes
BULLITT, CARROLL, GALLATIN, HART, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
CARPENTERS	19.00	6.01
PILEDRIVERMEN	19.25	6.01

CARP0357B 01/01/2001

	Rates	Fringes
BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, TODD, TRIGG & WEBSTER (South of a line running easterly from Sturgis to Onton, excluding the town of Luzon) COUNTIES:		
CARPENTERS	16.55	6.32
PILEDRIVERMEN	17.05	6.32

CARP0472B 06/01/2000

	Rates	Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS, MASON, ROBERTSON & ROWAN COUNTIES:		
CARPENTERS; SOFT FLOOR LAYERS	18.89	10.29
PILEDRIVERMEN	19.29	10.29

CARP0549A 06/01/2001

	Rates	Fringes
HANCOCK, HENDERSON, UNION & WEBSTER (North of a line running easterly from Sturgis to Onton, Kentucky, including the town of Luzon) COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARPENTERS; SOFT FLOOR LAYERS	17.85	6.04
PILEDRIVERMEN	18.10	6.04

CARP1031B 06/01/2001		
	Rates	Fringes
GREEN, MADISON, OWEN & TAYLOR COUNTIES:		
MILLWRIGHTS	19.34	8.58

CARP1031I 06/01/2000		
	Rates	Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS, MASON, ROBERTSON & ROWAN COUNTIES:		
MILLWRIGHTS	19.81	12.82

* CARP1031K 06/01/2001		
	Rates	Fringes
BULLITT, CARROLL, GALLATIN, HART, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:		
MILLWRIGHTS	21.86	9.58

CARP1066D 09/01/1999		
	Rates	Fringes
BRACKEN & GRANT COUNTIES:		
MILLWRIGHTS	21.90	7.92

CARP1080D 06/16/1997		
	Rates	Fringes
BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, TODD & TRIGG COUNTIES:		
MILLWRIGHTS	19.05	5.37

CARP1080F 06/01/1997		
	Rates	Fringes
HANCOCK, HENDERSON, UNION & WEBSTER COUNTIES:		
MILLWRIGHTS	19.40	6.67

CARP1311E 06/01/2000		
	Rates	Fringes
BRACKEN & GRANT COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARPENTERS & PILEDRIVERMEN:

(Does not include Walls & Ceiling Work)

19.22 4.77

 CARP1311N 07/01/2000

 Rates Fringes

BRACKEN & GRANT COUNTIES:

CARPENTERS & LATHERS:

(Walls & Ceiling Work only)

18.99 4.98

 CARP1650A 06/01/2001

 Rates Fringes

GREEN, MADISON, OWEN & TAYLOR COUNTIES:

CARPENTERS

16.52 5.63

PILEDRIVERMEN

17.02 5.63

 ELEC0071Q 01/01/2001

 Rates Fringes

BRACKEN, GALLATIN & GRANT COUNTIES:

LINE CONSTRUCTION:

Lineman

24.10 6.66

Equipment Operator

21.69 6.21

Groundman

15.67 5.10

 ELEC0101A 08/01/1998

 Rates Fringes

MADISON, MASON, OWEN & ROBERTSON COUNTIES:

LINE CONSTRUCTION:

Equipment Operators; Linemen; & Technicians

21.38 4.22

Cable Splicers

21.63 4.24

Groundmen; Groundmen Truck Drivers

15.71 3.74

 ELEC0183A 06/01/1997

 Rates Fringes

MADISON, OWEN & ROBERTSON COUNTIES:

ELECTRICIANS

19.70 6.24

 ELEC0212H 06/01/2000

 Rates Fringes

BRACKEN, GALLATIN & GRANT COUNTIES:

ELECTRICIANS

22.55 6.95

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEC0212L	01/18/1998		
		Rates	Fringes
BRACKEN, GALLATIN & GRANT COUNTIES:			
ELECTRICAL SIGN & LUMINOUS			
BUILDING INSTALLER		12.88	1.03+a

FOOTNOTE:

- a. 9 Paid Holidays: New Year's Day, Memorial Day, 4th of July, Labor Day, Thanksgiving Day, the Day after Thanksgiving, Christmas Eve, Christmas Day & New Year's Eve

ELEC0212Q	11/01/2000		
		Rates	Fringes
BRACKEN, GALLATIN & GRANT COUNTIES:			
SOUND COMMUNICATIONS:			
Installer		18.00	3.475
Cable Puller		9.00	2.64

ELEC0317E	05/30/2001		
		Rates	Fringes
CARTER, LAWRENCE & ROWAN COUNTIES:			
ELECTRICIANS:			
Electricians		23.11	11.04
Cable Splicers		24.27	11.08

ELEC0317F	06/01/2000		
		Rates	Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:			
LINE CONSTRUCTION:			
Linemen		21.68	9.76
Cable Splicers		24.09	9.84
Equipment Operators		17.34	9.61
Groundmen		14.09	9.49

ELEC0369D	06/01/2001		
		Rates	Fringes
BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TODD, TRIMBLE & WASHINGTON COUNTIES:			
ELECTRICIANS		23.50	7.73

ELEC0369F	06/01/1998		
		Rates	Fringes
BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TODD, TRIMBLE & WASHINGTON			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

COUNTIES:

LINE CONSTRUCTION:

Linemen; Equipment Operators; & Line Truck Operators	20.94	5.28
Backhoes	16.76	4.70
Trenchers	15.72	4.66
Truck Drivers	14.67	4.41
Groundmen	13.00	4.19

ELEC0575B 05/30/2001

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIANS	25.65	7.30

ELEC0816C 06/01/2000

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON
(Except a 5 mile radius of City Hall in Fulton), GRAVES,
HICKMAN, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

ELECTRICIANS:

	Rates	Fringes
Electricians	22.68	7.56
Cable Splicers	22.93	7.62

ELEC0816D 06/01/1998

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON,
GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

LINE CONSTRUCTION:

	Rates	Fringes
Line Equipment Operator; Lineman	20.14	5.27
Cable Splicer	20.39	5.30
Groundman Truck Driver	15.11	4.60
Groundman	14.70	4.55

ELEC1701A 01/01/2000

HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

ELECTRICIANS:

	Rates	Fringes
Electricians	22.87	7.17
Heilarc Welding; & Cable Splicing	23.12	7.22

ELEC1701B 09/01/1998

HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

LINE CONSTRUCTION:

	Rates	Fringes
Lineman	15.46	1.79

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Cable Splicer	16.25	1.82
Operators: Mechanized Equipment Hole Digging Equipment	13.29	1.72
Line Truck with Power Earth Boring Auger	10.75	1.63
Truck with Winch or Pole & Steel Handling; Groundman	8.77	1.56
Truck without Winch	6.54	1.48

ELEC1925A 07/01/2000

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
ELECTRICIANS	14.90	7.25
CABLE SPLICERS	15.40	7.26

ELEV0020B 10/01/2000

CARROLL, HENRY, MADISON, OLDHAM, OWEN, SHELBY, SPENCER &
TRIMBLE COUNTIES:

	Rates	Fringes
ELEVATOR MECHANICS	24.865	7.195+a+b

FOOTNOTES:

a. Seven Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; & Christmas Day

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years.

ELEV0061B 06/21/1998

HENDERSON & UNION COUNTIES:

	Rates	Fringes
ELEVATOR MECHANICS	21.51	6.12+a+b

FOOTNOTES:

a. 7 Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day, Thanksgiving Day; the Day after Thanksgiving; & Christmas Day

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years

ENGI0181K 06/01/2000

BRACKEN, CARTER, FLEMING, GRANT, GREENUP, LAWRENCE, LEWIS, MASON, ROBERTSON & ROWAN COUNTIES:

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS:

GROUP 1	21.43	7.02
GROUP 2	21.98	7.02
GROUP 3	18.42	7.02
GROUP 4	17.57	7.02

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batch Plant; Bituminous Paver; Cableway; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching and Trenching Machine; Dragline; Dredge; Dredge Engineer; Elevating Grader and all types of Loaders; Hoe type Machine; Hoist (1 Drum when used for stack or chimney construction or repair); Hoisting Engine (2 or more Drums); Locomotive; Motor Scraper; Carry-all Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Piledriver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel; Truck Crane; Winch Truck; Push Dozer; Highlift; Forklift (Regardless of lift height & except when used for masonry construction); Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader (Attached to equipment); Scoopmobile; Kecal Loader; Tower Crane (French, German & other types); Hydrocrane; Backfiller; Gurry; Sub-grader; & Tunnel Mining Machine, including Moles, Shields or Similar Types of Tunnel Mining Equipment

GROUP 2 - Cable Crane (50 tons and over); Hydraulic Crane (100 tons and over)

GROUP 3 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (under 21 cu. ft.); Form Grader; Roller (Rock); Tractor (50 h.p. and Over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom Type Tamping Machine; Truck Crane Oiler; Greaser on Grease Facilities servicing heavy equipment; Switchman or Brakeman; Whirley Oiler; Self-propelled Compactor; Tractair & Road Widening Trencher & Farm Tractor with attachments, except Backhoe, Highlift & Endloader; Elevator (When used for hoisting any building materials); Hoisting Engine (1 Drum or Buck Hoist); Forklift (When used for masonry construction, firebrick masonry excluded); Well Points; Grout Pump; Throttle-valve man; Tugger; & Electric Vibrator Compactor

GROUP 4 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (Earth); Tamping Machine; Tractor (Under 50 h.p.); Vibrator; Oiler; Concrete Saw; Burlap and Curing Machine; Hydro Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

CRANES WITH BOOM 150 FEET AND OVER INCLUDING JIB SHALL RECEIVE \$.50 ABOVE GROUPS 1 AND 2

CRANES WITH (CCO) SHALL RECEIVE \$.10 ABOVE GROUPS 1 AND 2

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0181L 06/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		

MADISON, MARION, OWEN, TAYLOR & WASHINGTON COUNTIES:

GROUP 1	19.55	7.90
GROUP 2	16.81	7.90
GROUP 3	16.04	7.90

GREEN, HANCOCK & HART COUNTIES:

GROUP 1	19.85	7.90
GROUP 2	17.11	7.90
GROUP 3	16.34	7.90

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batcher Plant; Bituminous Paver; Cableway; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loader; Hoe Type Machine; Hoist (1 Drum when used for stack or chimney construction or repair); Hoisting Engine (2 or more Drums); Locomotive; Motor Scrapper; Carry-All Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Piledriver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel; Truck Crane; Winch Truck; Push Dozer; Highlift; Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-Frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader (Attached to Equipment); Scoopmobile; Kecal Loader; Tower Crane (French, German & Other Types); Hydrocrane; Backfiller; Gurry; Subgrader; Tunnel Mining Machine, including Moles; Shield or similar types of Tunnel Mining Equipment; & Forklift (Regardless of Lift Height)

GROUP 2 - Air Compressor (Over 900 CFM); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (Under 21 cu. ft.); Form Grader; Roller (Rock); Tractor (50 H.P. & Over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom Type Tamping Machine; Greaser on Grease Facilities Servicing Heavy Equipment; Switchman or Brakeman; Whirley Oiler; Self-Propelled Compactor; Tractair & Road Widening Trencher & Farm Tractor with attachments (Except Backhoe, Highlift & End Loader); Elevator; Hoisting Engineer (1 Drum or Buck Hoist, Firebrick Masonry Excluded); Well Point; Grout Pump; Throttle Valve Person; Tugger; & Electric Vibrator Compactor

GROUP 3 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (Earth); Tamping Machine; Tractor (Under 50 H.P.); Vibrator; Oiler; Concrete Saw; Burlap & Curing Machine; Truck Crane Oiler; Hydro Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CRANE WITH BOOM 150 FEET & OVER, INCLUDING JIB SHALL RECEIVE
\$.50 ABOVE GROUP 1

ENGI0181M 07/01/2000

	Rates	Fringes
BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON, GRAVES, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, TODD, TRIGG, UNION & WEBSTER COUNTIES:		

POWER EQUIPMENT OPERATORS:

GROUP 1	19.70	6.90
GROUP 2	16.96	6.90
GROUP 3	16.19	6.90

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batcher Plant; Bituminous Paver; Cable Way; Carrydeck Crane; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loader; Heavy Equipment Robotics Operator/Mechanic; Hoe type Machine; Hoist (1-drum when used for stack or chimney construction or repair); Hoisting Engine (2-drums or more); Horizontal Directional Drill Operator; Hydraulic Boom Truck; Locomotive; Mechanically Operated Laser Screed; Motor Scraper; Carry-all Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Overhead Crane; Pile Driver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel; Truck Crane; Winch Truck; Push Dozer; High Lift; Fork Lift (regardless of lift height & except when used for masonry construction); Telescoping Type Forklift; Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-Frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader attached to equipment; Scoopmobile; KeCal Loader; Tower Crane (French, German & other types); Hydro Crane; Backfiller; Gurries; Sub-Grader; & Tunnel Mining Machine, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (over 900 cu. ft. per min.); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (under 21 cu. ft.); Form Grader; Roller (rock); Tractor (50 HP & over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom type Tamping Machine; Truck Crane Oiler; Greaser on grease facilities servicing heavy equipment; Switchman or Brakeman; Whirley Oiler; Self-Propelled Compactor; Tractair & Road Widening Trencher & Farm Tractor with attachments (except Backhoe, Highlift & End Loader); Elevator (when used to hoist building materials); Hoisting Engine (1-drum or buck hoist); Forklift (when used for masonry construction, Firebrick masonry excluded); Well Points; Grout Pump; Throttle-Valve Man; Tugger; & Electric Vibrator Compactor

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (earth); Tamping Machine; Tractor (under 50 HP); Vibrator; Oiler; Concrete Saw; Burlap & Curing Machine; Hydro-Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

CRANE WITH BOOM 150 FEET AND OVER, INCLUDING JIB, SHALL RECEIVE \$1.00 ABOVE GROUP 1; 225 FEET AND OVER, INCLUDING JIB, SHALL RECEIVE \$1.50 ABOVE GROUP 1.

CRANE USING PILING LEADS SHALL RECEIVE \$1.00 ABOVE GROUP 1, REGARDLESS OF BOOM LENGTH

HAZARDOUS PAY:

- Level A Personal Protective Equipment \$1.00 Premium
- Level B Personal Protective Equipment \$.75 Premium
- Level C Personal Protective Equipment \$.50 Premium
- Level D Personal Protective Equipment - No Premium

ENGI1810B 06/01/2001

	Rates	Fringes
BULLITT, CARROLL, GALLATIN, HENRY, LARUE, NELSON, OLDHAM, SHELBY, SPENCER & TRIMBLE COUNTIES:		

POWER EQUIPMENT OPERATORS:

GROUP 1	19.85	7.90
GROUP 2	17.11	7.90
GROUP 3	16.34	7.90

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batcher Plant; Bituminous Paver; Cableway; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loader; Hoe Type Machine; Hoist (1 Drum when used for stack or chimney construction or repair); Hoisting Engine (2 or more Drums); Locomotive; Motor Scrapper; Carry-All Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Piledriver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel; Truck Crane; Winch Truck; Push Dozer; Highlift; Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-Frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader (Attached to Equipment); Scoopmobile; Kecal Loader; Tower Crane (French, German & Other Types); Hydrocrane; Backfiller; Gurry; Subgrader; Tunnel Mining Machine, including Moles; Shield or similar types of Tunnel Mining Equipment; & Forklift (Regardless of Lift Height)

GROUP 2 - Air Compressor (Over 900 CFM); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (Under 21 cu. ft.); Form Grader; Roller (Rock); Tractor (50 H.P. & Over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom Type Tamping Machine; Greaser on Grease Facilities

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Servicing Heavy Equipment; Switchman or Brakeman; Whirley Oiler; Self-Propelled Compactor; Tractair & Road Widening Trencher & Farm Tractor with attachments (Except Backhoe, Highlift & End Loader); Elevator; Hoisting Engineer (1 Drum or Buck Hoist, Firebrick Masonry Excluded); Well Point; Grout Pump; Throttle Valve Person; Tugger; & Electric Vibrator Compactor

GROUP 3 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (Earth); Tamping Machine; Tractor (Under 50 H.P.); Vibrator; Oiler; Concrete Saw; Burlap & Curing Machine; Truck Crane Oiler; Hydro Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

CRANE WITH BOOM 150 FEET & OVER, INCLUDING JIB SHALL RECEIVE \$.50 ABOVE GROUP 1

IRON0044E 06/01/2001

	Rates	Fringes
CARROLL (Eastern third, including the Township of Ghent);		
FLEMING (Western part, Excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);		
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);		
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);		

BRACKEN, GALLATIN, GRANT & ROBERTSON COUNTIES:

IRONWORKERS:

Ornamental; Structural	22.60	10.44
Fence Erector	20.34	10.44

IRON0070C 06/01/2001

	Rates	Fringes
CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);		
OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);		
BULLITT, GREEN, HART, HENRY, LARUE, MADISON, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRONWORKERS:

Structural; Ornamental; Reinforcing; Precast Concrete Erectors	22.26	10.62
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IRON0103B 04/01/2001

	Rates	Fringes
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);		

CRITTENDEN COUNTY (Northeastern half, including the Townships of
Grove, Mattoon, Repton, Shady Grove & Tribune);

HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

IRONWORKERS	22.80	9.15
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* IRON0372E 06/01/2001

	Rates	Fringes
CARROLL (Eastern third, including the Township of Ghent); FLEMING (Western part, Excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);		

MASON (Western two-thirds, including Townships of Dover,
Lewisburg, Mays Lick, Maysville, Minerva, Moranburg,
Murphysville, Ripley, Sardis, Shannon, South Ripley &
Washington);

OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook,
Jonesville, Long Ridge, Lusby's Mill, New, New Columbus,
New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita
& Wheatley);

BRACKEN, GALLATIN, GRANT & ROBERTSON COUNTIES:

IRONWORKERS, Reinforcing: Up to & including 25-mile radius of Hamilton County, Ohio Courthouse	21.86	10.22
Beyond 25-mile radius of Hamilton County, Ohio Courthouse	22.00	10.22

IRON0492B 05/01/2000

	Rates	Fringes
TODD COUNTY:		

IRONWORKERS	17.23	5.92
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IRON0769A 06/01/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);

MASON (Eastern third, including the Townships of Helena, Marshall, Orangeburg, Plumville & Springdale);

CARTER, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:

IRONWORKERS:

ZONE 1	23.20	10.37
ZONE 2	23.60	10.37
ZONE 3	25.60	10.37

ZONE 1 - Up to 10 mile radius of Union Hall, Ashland, Ky., 1643 Greenup Ave.

ZONE 2 - 10 to 50 mile radius of Union Hall, Ashland, Ky., 1643 Greenup Ave.

ZONE 3 - 50 mile radius & over of Union Hall, Ashland, Ky., 1643 Greenup Ave.

IRON0782A 05/01/2001

	Rates	Fringes
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);		

CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told);

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

IRONWORKERS	20.10	9.09
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LABO0189A 06/01/2001

	Rates	Fringes
BRACKEN, GALLATIN, GRANT, MADISON, MASON, OWEN & ROBERTSON COUNTIES:		

LABORER

GROUP 1	14.53	4.52
GROUP 2	14.93	4.52
GROUP 3	15.13	4.52
GROUP 4	15.23	4.52
GROUP 5	15.73	4.52
GROUP 6	16.03	4.52

LABORER CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1 - Asbestos Abatement; Carpenter Tender; General; Concrete Pouring & Curing; Concrete Form Stripping & Wrecking; Hand Digging & Backfilling of Ditches; Clearing of Right-of-ways & Building Sites; Wood Sheeting & Shoring; Signalperson for Concrete Bucket; General Cleaning; Toxic Waste Removal; & Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level D

GROUP 2 - Air Tool Operator; Air Track Drill; Asphalt Raker; Tamper; Batch Plant & Scale Man; Chain Saw; Concrete Saw; Electric Hand Grinder; Electric Bush & Chipping Hammer; Flagperson; Forklift Operator; Form Setter (Street or Highway); Gunnite; Hand Spiker; Introflax Burning Rod; Joint Maker; Mason Tender; Pipelayer; Plasterer Tender; Power Driven Georgia Buggy; Power Posthole Digger; Railroad; Sandblaster; Scow Man & Deck Hand; Signalperson; Sweeper & Cleaner Machine; Vibrator Operator; Walk Behind Trenching Machine; Mortar Mixer Machine; Water Pumpman; Metal Form Setter; Heater; Mesh Handler on walkways, streets & roadways (Outside Buildings); & Environmental Laborers - Nuclear, Radiation, Toxic & Hazardous Waste - Level C

GROUP 3 - Gunnite Nozzleman & Gunnite Nozzle Machine Operator; Sand Blaster Nozzleman; Concrete or Grout Pumpman; & Plaster Pumpman

GROUP 4 - Powderman & Blaster; & Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level B

GROUP 5 - Caisson Hole (6 ft. & over - Pressure & Free Air Including Tools); Construction Specialist; Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level A

GROUP 6 - Tunnel Man & Tunnel Sand Miner; Cofferdam (Pressure & Free Air); & Sand Hog or Mucker (Pressure or Free Air)

LABO0561B 04/01/2001

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES: Rates Fringes

LABORERS:

	Rates	Fringes
GROUP 1	17.56	4.90
GROUP 2	17.76	4.90
GROUP 3	17.86	4.90
GROUP 4	18.06	4.90
GROUP 5	18.56	4.90
GROUP 6	19.31	4.90

LABORER CLASSIFICATIONS

GROUP 1 - Building & Construction; Scaffold Builder (Other than for Masons or Plasterers); Window Washer & Cleaner; Railroad Worker; Masonry Wall Washer (Interior & Exterior); Cement Finisher Tender; Carpenter Tender; Portable Water Pump with discharge up to 3"; Flagperson; Signalperson; Wire Mesh; Fire

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Prevention; Fire Watch; & Fire Stop Tender

GROUP 2 - Waterproofing; Handling of Creosote Lumber or like treated material (Excluding Railroad Material); Handling of Toxic Materials Damaging to Clothing; Asphalt Raker & Luteman; Kettleman; Air Tool Operator; Vibrator; Chipping Hammer Operator; Pneumatic Tool Operator & Earth Compactor; Jack Man & Sheeting Man Working in Ditches deeper than 6 Feet; Working in Ditches 6 Feet in depth or deeper; Assembly of Unicrete Pump; Chain Saw Operator; Tile Layer (Sewer or Field); Sewer Pipe Layer (Metallic and Non-metallic) 5 ft. outside the building foundation; Motor Driven Wheelbarrow & Concrete Buggy; Hyster Operator; Pumpcrete Assembler; Conveyor Assembler; Core Drill Operator; Cement/Lime/Silica Clay Handler (Bulk or Bag); Pneumatic Spiker; Deck Engine & Winch Operator; Water Main & Cable Ducking (Metallic or Non-metallic); Handling & Removal of Asbestos Abatement or other Hazardous Materials; Water Line Layers 5 ft. outside the building foundation; & Grout Pump Operator

GROUP 3 - Plaster Tender; Mason Tender; Mortar Mixer; Cutting Torch or Burner; Cement Gun Operator; Scaffold Builder (When working for Plasterer or Mason); & Fork Lift Operator

GROUP 4 - Gunman or Potman

GROUP 5 - Gunite or Shot Crete Nozzle

GROUP 6 - Dynamite Man

*CAISSON & TUNNEL WORK IN FREE AIR - \$1.00 OVER BASE RATE

*CAISSON BOTTOM MAN - \$2.00 OVER BASE RATE

*CAISSON & TUNNEL WORK IN COMPRESSED AIR:

0-15 lbs. - \$1.00 over base rate
 16-20 lbs. - \$1.50 over base rate
 21-26 lbs. - \$2.00 over base rate
 27-33 lbs. - \$3.00 over base rate
 34 & over lbs. - \$4.00 over base rate

* LABO0576B 07/01/2001

BULLITT, GREEN, HART, LARUE, MARION, NELSON, OLDHAM, SPENCER & TAYLOR COUNTIES:

LABORERS:

	Rates	Fringes
GROUP 1	14.32	5.08
GROUP 2	14.52	5.08
GROUP 3	14.62	5.08
GROUP 4	15.32	5.08
GROUP 5	15.82	5.08

GROUP 1 - General; Carpenter Tender; Cement Finisher Tender; Placing of Concrete; Wrecking of Buildings; Hand Digging & Hand Backfilling of Ditches; Clearing of Rights-of-Way &

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Building Sites; Curing of Concrete; Application Hardener; Handling of Chemically Treated Lumber; Installing of Wood Sheeting & Shoring; Signal Laborer; Concrete Bucket & Masonry Work; Cleaning & Moving of General Purpose Materials; General Cleanup of Scrap & Debris; & Mobile Sweeper

GROUP 2 - Mason Tender; Side Rail Setter (Metal); Stackman; Fork Lift Operator (Masonry & Plastering Contractors only); Power Driven Georgia Buggy; Chain Saw; Vibrator Operator; Mesh Handler; Power Tools (Air, Diesel, Electric, Gasoline); Wagon Drill; Pipe Layer; Wall Man; Treatment of Exposed Concrete (Chip, Bush Hammer & Rub); Concrete Saw; Gasoline Tamper Machine; Walk Behind Trenching Machine; Burner Man; Joint Maker; & Asphalt Raker

GROUP 3 - Air Track Driller; Introflax Burning Rod; Gunnite Nozzle Man Operator; Sewer, Tunnel Laborer (Free Air); & Sand Hog or Mucker (Free Air)

GROUP 4 - Holeman Drilled Piers; Augered Caissons; Sand Miner (Tunnel Free Air); Caisson Worker; & Powderman

GROUP 5 - Tunnel Person & Tunnel Miner (Pressure & Free Air); Environmental Worker; Toxic & Hazardous Waste; & Asbestos Removal

Free Hanging Scaffold Above 30' receives \$.25 Premium

LABO0576C 06/01/2001

CARROLL, HENRY, SHELBY, TRIMBLE & WASHINGTON COUNTIES:

LABORER

	Rates	Fringes
GROUP 1	14.52	4.53
GROUP 2	14.92	4.53
GROUP 3	15.12	4.53
GROUP 4	15.22	4.53
GROUP 5	15.72	4.53
GROUP 6	16.02	4.53

LABORER CLASSIFICATIONS

GROUP 1 - Asbestos Abatement; Carpenter Tender; General; Concrete Pouring & Curing; Concrete Form Stripping & Wrecking; Hand Digging & Backfilling of Ditches; Clearing of Right-of-ways & Building Sites; Wood Sheeting & Shoring; Signalperson for Concrete Bucket; General Cleaning; Toxic Waste Removal; & Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level D

GROUP 2 - Air Tool Operator; Air Track Drill; Asphalt Raker; Tamper; Batch Plant & Scale Man; Chain Saw; Concrete Saw; Electric Hand Grinder; Electric Bush & Chipping Hammer; Flagperson; Forklift Operator; Form Setter (Street or Highway); Gunnite; Hand Spiker; Introflax Burning Rod; Joint Maker; Mason Tender; Pipelayer; Plasterer Tender; Power Driven Georgia

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Buggy; Power Posthole Digger; Railroad; Sandblaster; Scow Man & Deck Hand; Signalperson; Sweeper & Cleaner Machine; Vibrator Operator; Walk Behind Trenching Machine; Mortar Mixer Machine; Water Pumpman; Metal Form Setter; Heater; Mesh Handler on walkways, streets & roadways (Outside Buildings); & Environmental Laborers - Nuclear, Radiation, Toxic & Hazardous Waste - Level C

GROUP 3 - Gunnite Nozzleman & Gunnite Nozzle Machine Operator; Sand Blaster Nozzleman; Concrete or Grout Pumpman; & Plaster Pumpman

GROUP 4 - Powderman & Blaster; & Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level B

GROUP 5 - Caisson Hole (6 ft. & over - Pressure & Free Air Including Tools); Construction Specialist; & Environmental Laborer - Nuclear, Radiation, Toxic & Hazardous Waste - Level A

GROUP 6 - Tunnel Man & Tunnel Sand Miner; Cofferdam (Pressure & Free Air); & Sand Hog or Mucker (Pressure or Free Air)

 * LAB01214B 07/01/2001

Rates Fringes
 BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON,
 LYON & MARSHALL COUNTIES:

LABORERS:

GROUP 1	15.37	6.03
GROUP 2	15.57	6.03
GROUP 3	15.62	6.03
GROUP 4	15.87	6.03
GROUP 5	16.37	6.03

LABORER CLASSIFICATIONS

GROUP 1 - General; Wrecking on buildings & Structures; Clearing Right-of-way & Building Site; Carpenter Tender; Truck Spotter & Dumper; Axe & Cross Cut Saw Filer; Concrete Pudler & Form Stripper; Deckhand Flagging Traffic; Asbestos Abatement; & Toxic Waste Removal, Level D Protective Equipment

GROUP 2 - Power Driven Tool; Hod Carrier; Mason Tender; Finisher Tender; Mortar Mixer; Jackhammer; Vibrator; Wagon Drill; Core Drill; Test Drill; Well Drill; Concrete Pump Machine; Tunnel Boring Machine; Man in Tunnel and Crib Ditch Work; Signal Person; Riprap Rock Setter & Handler; Asphalt Raker; Tamper & Smoother; Pipe Layer; Grout Pump Man; Chain Saw; Pipe Clearing; Doping & Wrapping; Swamper & Straight Cable Hooking; Cement Gun; Grade Checker Machine Excavating; Batch Plant Scale Man; Sand Hog (Free Air); Sand Hog (Compressed Air); Cutting Torch Man on Salvage Work; Road Form Setter; Brick Slinger; Hand Spiker; Power Buggy; Handling of Creosote Material; Sandblaster; Curing of Concrete & Apply Hardener; Air & Gas Tamper; Concrete Saw; Power Post Hole

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Digger & Green Cut Man on Concrete Work; & Pavement Breaker (2 men)

GROUP 3 - Toxic Waste Removal, Level C Protective Equipment

GROUP 4 - Powderman or Blaster; Toxic Waste Removal, Level B Protective Equipment

GROUP 5 - Toxic Waste Removal, Level A Protective Equipment

* LAB01392A 07/01/2001

	Rates	Fringes
HANCOCK COUNTY:		
LABORERS:		
GROUP 1	16.12	6.28
GROUP 2	16.32	6.28
GROUP 3	16.37	6.28
GROUP 4	16.62	6.28
GROUP 5	17.12	6.28

LABORER CLASSIFICATIONS

GROUP 1 - General; Wrecking on buildings & Structures; Clearing Right-of-way & Building Site; Carpenter Tender; Truck Spotter & Dumper; Axe & Cross Cut Saw Filer; Concrete Pudler & Form Stripper; Deckhand Flagging Traffic; Asbestos Abatement; & Toxic Waste Removal, Level D Protective Equipment

GROUP 2 - Power Driven Tool; Hod Carrier; Mason Tender; Finisher Tender; Mortar Mixer; Jackhammer; Vibrator; Wagon Drill; Core Drill; Test Drill; Well Drill; Concrete Pump Machine; Tunnel Boring Machine; Man in Tunnel and Crib Ditch Work; Signal Person; Riprap Rock Setter & Handler; Asphalt Raker; Tamper & Smoother; Pipe Layer; Grout Pump Man; Chain Saw; Pipe Clearing; Doping & Wrapping; Swamper & Straight Cable Hooking; Cement Gun; Grade Checker Machine Excavating; Batch Plant Scale Man; Sand Hog (Free Air); Sand Hog (Compressed Air); Cutting Torch Man on Salvage Work; Road Form Setter; Brick Slinger; Hand Spiker; Power Buggy; Handling of Creosote Material; Sandblaster; Curing of Concrete & Apply Hardener; Air & Gas Tamper; Concrete Saw; Power Post Hole Digger & Green Cut Man on Concrete Work; & Pavement Breaker (2 men)

GROUP 3 - Toxic Waste Removal, Level C Protective Equipment

GROUP 4 - Powderman or Blaster; & Toxic Waste Removal, Level B Protective Equipment

GROUP 5 - Toxic Waste Removal, Level A Protective Equipment

* LAB01392C 07/01/2001

	Rates	Fringes
CALDWELL, HOPKINS, TODD & TRIGG COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS:

GROUP 1	15.12	6.28
GROUP 2	15.32	6.28
GROUP 3	15.37	6.28
GROUP 4	15.62	6.28
GROUP 5	16.12	6.28

LABORER CLASSIFICATIONS

GROUP 1 - General; Wrecking on buildings & Structures; Clearing Right-of-way & Building Site; Carpenter Tender; Truck Spotter & Dumper; Axe & Cross Cut Saw Filer; Concrete Pudler & Form Stripper; Deckhand Flagging Traffic; Asbestos Abatement; & Hazardous & Toxic Waste Removal, Level D Protective Equipment

GROUP 2 - Power Driven Tool; Hod Carrier; Mason Tender; Finisher Tender; Mortar Mixer; Jackhammer; Vibrator; Wagon Drill; Core Drill; Test Drill; Well Drill; Concrete Pump Machine; Tunnel Boring Machine; Man in Tunnel and Crib Ditch Work; Signal Person; Riprap Rock Setter & Handler; Asphalt Raker; Tamper & Smoother; Pipe Layer; Grout Pump Man; Chain Saw; Pipe Clearing; Doping & Wrapping; Swamper & Straight Cable Hooking; Cement Gun; Grade Checker Machine Excavating; Batch Plant Scale Man; Sand Hog (Free Air); Sand Hog (Compressed Air); Cutting Torch Man on Salvage Work; Road Form Setter; Brick Slinger; Hand Spiker; Power Buggy; Handling of Creosote Material; Sandblaster; Curing of Concrete & Apply Hardener; Air & Gas Tamper; Concrete Saw; Power Post Hole Digger & Green Cut Man on Concrete Work; & Pavement Breaker (2 men)

GROUP 3 - Hazardous & Toxic Waste Removal, Level C Protective Equipment

GROUP 4 - Powderman or Blaster; Hazardous & Toxic Waste Removal, Level B Protective Equipment

GROUP 5 - Hazardous & Toxic Waste Removal, Level A Protective Equipment

LABO1445B 06/01/2000

CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:

LABORERS:

	Rates	Fringes
GROUP 1	20.03	6.43
GROUP 2	20.18	6.43
GROUP 3	20.20	6.43
GROUP 4	20.13	6.43
GROUP 5	20.28	6.43
GROUP 6	20.53	6.43
GROUP 7	20.73	6.43
GROUP 8	21.23	6.43

LABORER CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1 - General; Carpenter Tender; Cement Finisher Tender;
Concrete Man; Wrecker; Handler of Empty Oxygen & Acetylene
Bottles; & Environmental Laborer

GROUP 2 - Hod Carrier; Mortar Man; & Plasterer Tender

GROUP 3 - Wrapping, Heating & Applying Hot & Cold Tar on all
Pipes, Applying Tape on Pipes; & Operation of Tester

GROUP 4 - Deck Hand & Scow Men

GROUP 5 - Jackhammer; Power Tools (Electrical, Gas, or Air
Power); Burning Torch; Wagon Drill Operator; Tile Layer;
Handling of Creosote Material; Signalperson; & Asphalt Raker

GROUP 6 - Rock & Powder Man

GROUP 7 - Sand Hog & Mucker

GROUP 8 - Caisson Worker

PAIN0012E 06/01/2001

	Rates	Fringes
MADISON & ROBERTSON COUNTIES:		

PAINTERS:

Brush; Roll; Spackling; Drywall Finishing; Wall Covering, Vinyl & Paper; Spray; Sandblasting; Steam Cleaning; Steeplejack Work; Lead Abatement; & Coal Tar	16.81	2.60
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PAIN0012R 06/10/2000

	Rates	Fringes
BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:		

PAINTERS:

GROUP 1	20.30	4.55
GROUP 2	20.80	4.55
GROUP 3	21.05	4.55
GROUP 4	21.30	4.55
GROUP 5	22.05	4.55

PAINTER CLASSIFICATIONS

GROUP 1: Brush; Roller; Paperhanger; & Drywall Taping

GROUP 2: Spray

GROUP 3: Sandblasting; Waterblasting; & Hopper Tender

GROUP 4: Hazardous Work; High Work; Steeplejack; & Lead
Abatement Projects

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5: Sandblasting, Hopper Tender & Waterblasting Under Hazardous Conditions

PAIN0032D 05/01/2000

	Rates	Fringes
BALLARD COUNTY:		
PAINTERS	19.13	6.63
Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) & All Epoxy - \$1.00 Premium		

PAIN0118B 05/01/2000

	Rates	Fringes
BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON COUNTIES:		
PAINTERS:		
Brush; Drywall Finisher-Vinyl Hanger	16.77	4.35
Abrasive Blaster; Fireproofing; Lead Abatement; Spray; & Waterblasting 4000 PSI and Above	17.27	4.35

PAIN0156E 04/01/2001

	Rates	Fringes
HANCOCK, HENDERSON, UNION & WEBSTER COUNTIES:		
PAINTERS:		
STEAM GENERATING & POWER PLANTS:		
GROUP 1	21.45	6.88
GROUP 2	21.70	6.88
GROUP 3	22.45	6.88
GROUP 4	23.45	6.88
ALL OTHER WORK:		
GROUP 1	20.30	6.88
GROUP 2	20.55	6.88
GROUP 3	21.30	6.88
GROUP 4	22.30	6.88

PAINTER CLASSIFICATIONS

GROUP 1 - Brush; Roller & Paperhanger

GROUP 2 - Drywall Finisher; Plasterer

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast; Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAIN0387C 11/25/2000

BRACKEN, CARROLL, FLEMING, GALLATIN, GRANT, MADISON, MASON,
OWEN, ROBERTSON & ROWAN COUNTIES:

	Rates	Fringes
GLAZIERS	20.00	4.95

PAIN0456B 05/01/2001

TODD COUNTY:

PAINTERS:

	Rates	Fringes
GROUP 1	15.43	4.80
GROUP 2	15.78	4.80
GROUP 3	15.93	4.80
GROUP 4	16.13	4.80

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Structural Steel; Swing Stage & Chair & Motor Stage;
Spray; Climbing Shoes; Drywall Finishing; Pressure Cleaning
(Steam & Water); Tuck Point (In connection with Painting);
Epoxies, Vinyl & Plastic Type Paint; Power Driven Buffers &
Sanders; & Lead Base Paint Abatement

GROUP 3 - Bitumastic Coatings, Cold; Paperhanger; & Signwriter

GROUP 4 - Sandblasting, Bitumastic Coatings, Hot

PAIN0456K 03/22/2001

CALLOWAY, TODD & TRIGG COUNTIES:

	Rates	Fringes
GLAZIERS	16.80	4.15

PAIN0500B 05/01/2000

CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON, GRAVES,
HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

	Rates	Fringes
PAINTERS	15.25	4.52

Spray, Sandblasting & Waterblasting - units with 3500 PSI and
above - \$.50 premium

Work 40 ft. and above ground level - \$1.00 premium

PAIN0639B 05/01/2001

	Rates	Fringes
SIGN PAINTER & ERECTOR	16.67	3.97+

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

a+b+c

FOOTNOTES:

a. 7 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Christmas Day & 1 Floating Day

b. Vacation Pay: After 1 year's service - 5 days' paid vacation; After 2, but less than 10 years' service - 10 days' paid vacation; After 10, but less than 20 years' service - 15 days' paid vacation; After 20 years' service - 20 days' paid vacation

c. Funeral leave up to 3 days maximum paid leave for death of mother, father, brother, sister, spouse, child, mother-in-law, father-in-law, grandparent & inlaw provided employee attends funeral

PAIN1072B 06/01/2000

	Rates	Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:		
PAINTERS	19.05	6.53

PAIN1165C 04/01/1999

	Rates	Fringes
BALLARD, BULLITT, CALDWELL, CARLISLE, CRITTENDEN, FULTON, GRAVES, GREEN, HANCOCK, HART, HENDERSON, HENRY, HICKMAN, HOPKINS, LARUE, LIVINGSTON, LYON, MARION, MARSHALL, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE, UNION, WASHINGTON & WEBSTER COUNTIES:		
GLAZIERS	20.71	4.09

PAIN1195C 11/05/2000

	Rates	Fringes
CARTER, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:		
GLAZIERS	22.51	3.25

PLAS0001J 06/22/1999

	Rates	Fringes
BRACKEN, GALLATIN, GRANT, MADISON, OWEN & ROBERTSON COUNTIES:		
PLASTERERS:		
Pointing-Taping of Drywall Surfaces, Acoustical Finishes on Concrete & Drywall Surfaces	18.40	2.60
All Other Work	21.25	2.60

PLAS0132H 06/01/2000

	Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 BRACKEN, GALLATIN, GRANT, MADISON, OWEN & ROBERTSON COUNTIES:

CEMENT MASONS	19.05	5.35
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PLAS0132L 06/01/2000

	Rates	Fringes
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CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS, MASON & ROWAN
 COUNTIES:

CEMENT MASONS; PLASTERERS	23.98	6.97
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PLAS0135B 07/01/2000

	Rates	Fringes
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BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON,
 GRAVES, HICKMAN, LIVINGSTON, LYON & MARSHALL COUNTIES:

CEMENT MASONS	18.10	5.90
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PLAS0692B 06/01/2001

	Rates	Fringes
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BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MARION, NELSON,
 OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON COUNTIES:

CEMENT MASONS	17.45	6.70
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PLAS0692C 04/01/1999

	Rates	Fringes
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HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

CEMENT MASONS	16.19	6.65
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PLAS0692D 06/01/2001

	Rates	Fringes
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HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

PLASTERERS	21.90	6.99
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PLUM0107B 08/01/2000

	Rates	Fringes
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BULLITT, CARROLL (Western Half), GREEN, HART, HENRY, LARUE,
 MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE &
 WASHINGTON COUNTIES:

PLUMBERS; GAS FITTERS:
 Plumbing contracts less than
 \$150,000.00

	18.59	5.32
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All Other Plumbing contracts

	23.59	5.32
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* PLUM0184A 07/01/2001

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON,
GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

PLUMBERS & STEAMFITTERS	22.93	9.01
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* PLUM0248B 06/01/2001

	Rates	Fringes
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CARTER, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:

PLUMBERS & STEAMFITTERS	22.47	11.82
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PLUM0392E 06/01/2000

	Rates	Fringes
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BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN &
ROBERTSON COUNTIES:

PIPEFITTERS & PLUMBERS	25.50	6.46
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PLUM0452A 11/01/2000

	Rates	Fringes
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FLEMING & MADISON COUNTIES:

PIPEFITTERS & PLUMBERS:

Projects over 1 1/2 million dollars in piping contracts:

ZONE 1	22.00	6.02
ZONE 2	23.00	6.02

Projects under 1 1/2 million dollars in piping contracts:

ZONE 1	18.62	6.02
ZONE 2	19.62	6.02

ZONE 1 - Within 25 mile radius of Fayette County Courthouse

ZONE 2 - Beyond 25 mile radius of Fayette County Courthouse

PLUM0522B 08/01/2000

	Rates	Fringes
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BULLITT, CARROLL (Western Half), GREEN, HART, HENRY, LARUE,
MARION, NELSON, OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE &
WASHINGTON COUNTIES:

PIPEFITTERS & STEAMFITTERS	24.40	7.98
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PLUM0633A 05/01/2001

	Rates	Fringes
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HANCOCK, HENDERSON, HOPKINS, TODD, UNION & WEBSTER COUNTIES:

PLUMBERS & PIPEFITTERS	22.79	7.23
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ROOF0042C 03/01/2001

	Rates	Fringes
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BRACKEN, GALLATIN, GRANT, MADISON, OWEN & ROBERTSON COUNTIES:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOFERS:

Roofers	22.40	6.04
Pitch	23.40	6.04

ROOF0106B 04/01/2001

	Rates	Fringes
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HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES:

ROOFERS:

Slate, Tile, Concrete Slab & Gypsum Plank	22.08	6.75
All Other Work	21.58	6.75

ROOF0106F 05/01/2001

	Rates	Fringes
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BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON,
GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL & TRIGG COUNTIES:

ROOFERS:

Roofer & Waterproofer	16.75	2.00
Slate, Tile Concrete Slab & Gypsum Plank	17.00	2.00
Pitch	17.25	2.00

ROOF0147B 01/01/2001

	Rates	Fringes
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BULLITT, CARROLL, GREEN, HART, HENRY, LARUE, MARION, NELSON,
OLDHAM, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON COUNTIES:

ROOFERS	16.90	4.85
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ROOF0176B 05/01/2001

	Rates	Fringes
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TODD COUNTY:

ROOFERS:

Roofer	15.51	2.45
Precast Slab, Slate, Asbestos & Tile	16.01	2.45
Coal Tar Pitch	16.26	2.45

ROOF0185B 06/01/2001

	Rates	Fringes
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CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS, MASON & ROWAN
COUNTIES:

ROOFERS	22.95	5.50
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SFKY0669A 04/01/2001

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SPRINKLER FITTERS	24.30	7.50
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SHEE0020B 07/01/1997

	Rates	Fringes
HENDERSON, UNION & WEBSTER COUNTIES:		

SHEET METAL WORKERS	21.66	7.96
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SHEE0024H 01/01/2001

	Rates	Fringes
CARTER, FLEMING, GREENUP, LAWRENCE, LEWIS, MASON & ROWAN COUNTIES:		

SHEET METAL WORKERS	22.75	9.36
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SHEE0110A 12/01/2000

	Rates	Fringes
BALLARD, BULLITT, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, MADISON, MARSHALL, NELSON, OLDHAM, SHELBY & SPENCER COUNTIES:		

SHEET METAL WORKERS	24.16	8.06
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SHEE0110B 12/01/2000

	Rates	Fringes
BRACKEN, CALDWELL, CARROLL, CRITTENDEN, GALLATIN, GRANT, GREEN, HANCOCK, HART, HENRY, HOPKINS, LARUE, LIVINGSTON, LYON, MARION, OWEN, ROBERTSON, TAYLOR, TODD, TRIGG, TRIMBLE & WASHINGTON COUNTIES:		

SHEET METAL WORKERS	25.91	8.06
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TEAM0089B 06/01/2000

	Rates	Fringes
BRACKEN, BULLITT, CARROLL, FLEMING, GALLATIN, GRANT, GREEN, HART, HENRY, LARUE, MADISON, MARION, MASON, NELSON, OLDHAM, OWEN, ROBERTSON, SHELBY, SPENCER, TAYLOR, TRIMBLE & WASHINGTON COUNTIES:		

TRUCK DRIVERS:

GROUP 1	16.77	a&b
GROUP 2	16.88	a&b
GROUP 3	16.95	a&b
GROUP 4	17.05	a&b

WORK ON HAZARDOUS OR TOXIC WASTE SITES - \$4.00 PREMIUM

FOOTNOTES:

- a. \$291.70 per week
- b. Paid vacation of 40 hours to any employee who has been regularly employed on a project for 1 year and who has worked a minimum of 1,200 hours during the year, and 2 weeks' paid vacation to any employee who has completed 3

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

years' employment on a project and who has worked 1,200 hours since their 2nd anniversary date.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - 3 Tons & Under; Greaser; Tire Changer; & Mechanic Tender

GROUP 2 - Over 3 Tons; Semi-Trailers or Pole Trailers; Dumps Tandem Axles; Farm Tractor (When used to pull building material and equipment)

GROUP 3 - Concrete Mixers (Hauling on jobsites); & Truck Mechanics

GROUP 4 - Euclids and other heavy moving equipment; Lowboys; Winches and A-Frame and Monorail Trucks (To transport building materials)

TEAM0215B 04/01/1998

HANCOCK, HENDERSON, HOPKINS, UNION & WEBSTER COUNTIES: Rates Fringes

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1	13.14	2.15+a
GROUP 2	13.89	2.15+a
GROUP 3	13.98	2.15+a
GROUP 4	14.03	2.15+a
GROUP 5	14.09	2.15+a
GROUP 6	14.14	2.15+a
GROUP 7	14.19	2.15+a
GROUP 8	14.26	2.15+a
GROUP 9	14.29	2.15+a
GROUP 10	14.94	2.15+a

FOOTNOTE:

a. \$89.00 per week

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - One-half Ton (Except when used by a superintendent or a foreman for own transportation or the use of a mechanic for transportation of self or tools)

GROUP 2 - Greasers, Tire Men & Tending Batch Boards

GROUP 3 - Single Axle Straight Trucks; Batch Trucks, Wet or Dry 3(34E) Batches or less; & Three-quarter Ton & One Ton

GROUP 4 - Bituminous Distributor two-man

GROUP 5 - Tandem Trucks or Dog Legs; Trucks over 15 ton Payload; Single Axle Semi-Trucks (3-axle unit); Low Boys, Single Axle (3-axle unit); Winch Trucks or A-frames when transporting materials; Batch Trucks, Wet or Dry, over 3(34E) Batches; & Farm Tractors Pulling Trailers

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 6 - Bituminous Distributors one-man

GROUP 7 - Tandem Axle Semi-Trucks (4-axle unit); Equipment not self-loaded or pusher loaded, such as Koehring or Similar Dumpsters, Track Trucks, Euclid Bottom Dump & Hug Bottom Dump, Tournatrailers, Tournarockers or Similar Equipment 12 cu. yds. & under; Low-Boys, Tandem Axle (4 axle unit); & Pavement Breakers

GROUP 8 - Tandem-Tandem Semi-Truck (5 axle unit); & Low-Boys Tandem-Tandem (5 axle unit)

GROUP 9 - Equipment not self-loaded or pusher loaded, such as Koehring or Similar Dumpsters, Track Trucks, Euclid Bottom Dump & Hug Bottom Dump, Tournatrailers, Tournarockers or Similar Equipment over 12 cu. yds.; Truck Mechanics; & Mixer Trucks

GROUP 10 - Hazardous Waste

TEAM0236B 05/01/2000

	Rates	Fringes
BALLARD, CALDWELL, CALLOWAY, CARLISLE, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, TODD & TRIGG COUNTIES:		

TRUCK DRIVERS:

GROUP 1	17.05	a
GROUP 2	17.65	a
GROUP 3	17.70	a

TOXIC WASTE - Personal Protective Equipment:
 Level A - \$1.00 Premium; Level B - \$.50 Premium;
 Level C - \$.25 Premium; Level D - Basic rate

FOOTNOTE:

a. \$17.80 per day

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Up to but not including 5 tons, such as Station Wagons, Autos, Pick-ups, Dumps, Flat Beds, & Stake Bodies

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - 5 tons & over, including special equipment such as Euclids, Winches, Booms, Demsters, Dumpsters, Crawler-type Trucks, Tractor-Trailers, Low Boys, Distributors, Water Tank Trucks, Fork Lifts, Tandem Dumps, Ready Mixes; & Truck Mechanic

TEAM0505B 06/01/2000

	Rates	Fringes
CARTER, GREENUP, LAWRENCE, LEWIS & ROWAN COUNTIES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TRUCK DRIVERS:

GROUP 1	21.34	4.90+a
GROUP 2	21.67	4.90+a
GROUP 3	21.75	4.90+a
GROUP 4	21.89	4.90+a
GROUP 5	22.22	4.90+a
GROUP 6	22.56	4.90+a

FOOTNOTE:

a. \$559.20 per month

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Pickup; Station Wagon; Panel; Flatbody Material Truck (Straight job); & Dump (Up to 5 cu. yds.)

GROUP 2 - Tank (Straight); Dump (5 cu. yds. & over); Agitator or Mixer (Up to 5 cu. yds.); & Flat Bed Tandem

GROUP 3 - Winch; Fork; Distributor (Front End and Back End); Truck Crane; & Monorail

GROUP 4 - Agitator or Mixer (5 cu. yds. & Over)

GROUP 5 - Mechanic; Tri-Axle Dump; Hydraulic Lift Tailgate; Truck & Farm-type Tractor; End Dumpster; Turnarocker; Ross Carrier; Athey Wagon; Semi-dump; Semi-trailer; Semi-tank; & Lowboy Trailer

GROUP 6 - Master Mechanic

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted

because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION KY010005 03/02/01 KY5

General Decision Number KY010005

Superseded General Decision No. KY000005

State: **Kentucky**

Construction Type:

BUILDING

County(ies):

CHRISTIAN

BUILDING CONSTRUCTION PROJECTS (Does not include residential construction consisting of single family homes and apartments u to and including 4 stories) **in FORT CAMPBELL ONLY**

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

CHRISTIAN

SUKY1209A 03/02/1992

	Rates	Fringes
ASBESTOS WORKERS	16.50	3.71
BOILERMAKERS	20.75	5.56
BRICKLAYERS, STONE MASONS, MARBLE MASONS, TILE SETTERS, TERRAZZO WORKERS, CEMENT MASONS, AND PLASTERERS	15.57	1.50
CARPENTERS & LATHERS:		
New Work	15.39	2.80
Repair Work	14.62	2.80
ELECTRICIANS:		
Wiremen	19.19	3.94
Cable Splicer	19.44	3.98
ELEVATOR MECHANICS	12.62	3.29+a+b

FOOTNOTES:

a. 7 Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Friday after Thanksgiving Day; & Christmas Day

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years

GLAZIERS	12.50	1.12+c
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FOOTNOTE:

c. 6 Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day & Christmas Day

IRONWORKERS	14.06	2.71
MILLWRIGHTS:		
New Work	16.24	2.80

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Repair Work	15.27	2.80
PAINTERS:		
Brush	10.00	1.65
Spray, Sandblast, Boswain Chair, or heights over 50'	10.50	1.65
PILEDRIVERMEN:		
New Work	15.89	2.80
Repair Work	15.10	2.80
PLUMBERS & STEAMFITTERS		
	18.61	2.63
ROOFERS		
	11.40	1.81
SHEET METAL WORKERS		
	19.53	5.94
SPRINKLER FITTERS		
	19.50	4.83
LABORERS:		
GROUP 1	11.70	2.30
GROUP 2	11.85	2.30
GROUP 3	12.20	2.30

LABORER CLASSIFICATIONS

GROUP 1 - General; Wrecking Laborer on Buildings; Clearing Right-of-way & Building Site; Carpenter Tender; Truck Spotter & Dumper; Axe & Cross Cut Saw Filer; Concrete Pudler & Form Stripper; & Deckhand Flagging Traffic

GROUP 2 - Power Driven Tool; Hod Carrier; Mason Tender; Finisher Tender; Mortar Mixer; Jackhammer; Vibrator; Wagon Drill; Core Drill; Test Drill; Well Drill; Concrete Pump Machine; Tunnel Boring Machine; Man in Tunnel & Crib Ditch Work; Signal Person; Riprap Rock Setter & Handler; Asphalt Raker; Tamper & Smoother; Pipe Layer; Grout Pump Man; Chain Saw Pipe Clearing; Doping & Wrapping; Swamper & Straight Cable Hooking; Cement Gun, Grade Checker Machine Excavating; Batch Plant Scale Man; Sand Hog, Free Air; Sand Hog, Compressed Air; Cutting Torch Man on Salvage Work; Road Form Setter; Brick Slinger; Hand Spiker; Power Buggy; Handling of Creosote Material; Sandblaster; Curing of Concrete & Apply Hardener; Air & Gas Tamper; Concrete Saw; Power Post Hole Digger & Green Cut Man on Concrete Work

GROUP 3 - Powderman & Blaster

POWER EQUIPMENT OPERATORS:

GROUP 1	15.25	3.15
GROUP 2	12.51	3.15
GROUP 3	11.74	3.15

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batcher Plant; Bituminous Paver; Cable Way; Central Compressor Plant; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader; Loader; Hoe-type Machine; Hoist (1-Drum when used for Stack or Chimney construction or repair); Hoisting Engine 2-Drums or More); Locomotive; Motor Scraper; Carry-all Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Pile Driver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Truck Crane; Winch Truck; Push Dozer; High Lift; Fork Lift (regardless of lift height & except when used for Masonry Construction); Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader attached to equipment; Scoopmobile; KeCal Loader; Tower Cranes (French, German & other types); Hydro Crane; Backfiller; Gurry; & Sub-Grader

GROUP 2 - Air Compressor (Over 900 CFM); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (Under 21 cu. ft.); Form Grader; Roller (Rock); Tractor (50 HP & Over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom-type Tamping Machine; Truck Crane Oiler; Greaser on Grease facilities servicing Heavy Equipment; Switchman or Brakeman; Whirley Oiler; Self-propelled Compactor; Tractair & Road Widening Trencher; Farm Tractor with attachments (except Backhoe, High Lift & End Loader); Elevator (when used to hoist building materials); Hoisting Engine (1-Drum or Buck Hoist); Fork Lift (when used for Masonry Construction); Well Point; Grout Pump; Throttle-Valve Man; Tugger; & Electric Vibrator Compactor

GROUP 3 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (Earth); Tamping Machine; Tractor (Under 50 HP); Vibrator; Oiler; Concrete Saw; Burlap & Curing Machine; Hydro-Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

TRUCK DRIVERS:

GROUP 1	12.80	d
GROUP 2	13.45	d
GROUP 3	13.40	d

FOOTNOTE:

d. \$13.00 per day

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Up to but not including 5 Tons, such as Station Wagon, Auto, Pick-up, Dump, Flat Bed & Stake Body

GROUP 2 -5 tons & Over, including Euclid, Winch, Dempster, Dumpster, Crawler-type, Tandem Dump, etc.; Tractor-Trailer & similar equipment such as Low Boy, Distributor, Water Tank, Fork Lift, etc.; Ready Mix; & Mechanics

GROUP 3 - Greaser & Tire Changer

 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
 =====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

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1.) Has there been an initial decision in the matter? This can be:

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION KY010007 07/06/2001 KY7

Date: July 6, 2001
 General Decision Number **KY010007**

Superseded General Decision No. KY000007

State: **Kentucky**

Construction Type:
BUILDING

County(ies):
 HARDIN JEFFERSON MEADE

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	05/04/2001
3	06/08/2001
4	07/06/2001

COUNTY(ies):
 HARDIN JEFFERSON MEADE

	Rates	Fringes
ASBE0051A 10/01/2000		
ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	20.73	7.04

	Rates	Fringes
ASBE2070C 06/01/2000		
HAZARDOUS MATERIAL HANDLERS (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems)	13.75	4.55

	Rates	Fringes
BOIL0040A 10/01/2000		
BOILERMAKERS	23.95	11.70

	Rates	Fringes
BRKY0001A 06/01/2001		
BRICKLAYERS; CAULKERS; CLEANERS; POINTERS & STONE MASONS	20.23	5.28

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LAYOUT MAN; & SAW MAN	20.48	5.28
REFRACTORY; & ACID BRICK	20.83	5.28

BRKY0001C 06/01/1999

	Rates	Fringes
MARBLE SETTERS; TERRAZZO WORKERS; & TILE SETTERS	18.60	3.40
MARBLE, TERRAZZO & TILE FINISHERS	12.60	2.80

CARP0064B 06/01/2001

	Rates	Fringes
CARPENTERS	19.00	6.01
PILEDRIVERMEN	19.25	6.01

* CARP1031G 06/01/2001

	Rates	Fringes
MILLWRIGHTS	21.86	9.58

ELEC0369A 06/01/2001

	Rates	Fringes
ELECTRICIANS	23.50	7.73

ELEC0369C 06/01/1998

	Rates	Fringes
LINE CONSTRUCTION:		
Linemen; Equipment Operators; & Line Truck Operators	20.94	5.28
Backhoes	16.76	4.70
Trenchers	15.72	4.66
Truck Drivers	14.67	4.41
Groundmen	13.00	4.19

ELEV0020A 10/01/2000

	Rates	Fringes
JEFFERSON COUNTY:		
ELEVATOR MECHANICS	24.865	7.195+a+b

FOOTNOTES:

a. Seven Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; & Christmas Day

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years.

ENGI1810A 06/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1	19.85	7.90
GROUP 2	17.11	7.90
GROUP 3	16.34	7.90

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Auto Patrol; Batcher Plant; Bituminous Paver; Cableway; Central Compressor Plant; Clamshell; Concrete Mixer (1 cu. ft. or over); Concrete Pump; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loader; Hoe Type Machine; Hoist (1 Drum when used for stack or chimney construction or repair); Hoisting Engine (2 or more Drums); Locomotive; Motor Scrapper; Carry-All Scoop; Bulldozer; Mechanic; Orangepeel Bucket; Piledriver; Power Blade; Motor Grader; Roller (Bituminous); Scarifier; Shovel; Tractor Shovel; Truck Crane; Winch Truck; Push Dozer; Highlift; Boom Cat; Core Drill; Hopto; Tow or Push Boat; A-Frame Winch Truck; Concrete Paver; Gradeall; Hoist; Hyster; Pumpcrete; Ross Carrier; Boom; Tail Boom; Rotary Drill; Hydro Hammer; Mucking Machine; Rock Spreader (Attached to Equipment); Scoopmobile; Kecal Loader; Tower Crane (French, German & Other Types); Hydrocrane; Backfiller; Gurry; Subgrader; Tunnel Mining Machine, including Moles; Shield or similar types of Tunnel Mining Equipment; & Forklift (Regardless of Lift Height)

GROUP 2 - Air Compressor (Over 900 CFM); Bituminous Mixer; Joint Sealing Machine; Concrete Mixer (Under 21 cu. ft.); Form Grader; Roller (Rock); Tractor (50 H.P. & Over); Bull Float; Finish Machine; Outboard Motor Boat; Flexplane; Fireperson; Boom Type Tamping Machine; Greaser on Grease Facilities Servicing Heavy Equipment; Switchman or Brakeman; Whirley Oiler; Self-Propelled Compactor; Tractair & Road Widening Trencher & Farm Tractor with attachments (Except Backhoe, Highlift & End Loader); Elevator; Hoisting Engineer (1 Drum or Buck Hoist, Firebrick Masonry Excluded); Well Point; Grout Pump; Throttle Valve Person; Tugger; & Electric Vibrator Compactor

GROUP 3 - Bituminous Distributor; Cement Gun; Conveyor; Mud Jack; Paving Joint Machine; Roller (Earth); Tamping Machine; Tractor (Under 50 H.P.); Vibrator; Oiler; Concrete Saw; Burlap & Curing Machine; Truck Crane Oiler; Hydro Seeder; Power Form Handling Equipment; Deckhand Steersman; & Hydraulic Post Driver

CRANE WITH BOOM 150 FEET & OVER, INCLUDING JIB SHALL RECEIVE \$.50 ABOVE GROUP 1

 IRON0070A 06/01/2001

	Rates	Fringes
IRONWORKERS:		
Structural; Ornamental; Reinforcing; & Precast Concrete Erectors	22.26	10.62

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* LABO0576A 07/01/2001

	Rates	Fringes
LABORERS:		
GROUP 1	14.32	5.08
GROUP 2	14.52	5.08
GROUP 3	14.62	5.08
GROUP 4	15.32	5.08
GROUP 5	15.82	5.08

GROUP 1 - General; Carpenter Tender; Cement Finisher Tender; Placing of Concrete; Wrecking of Buildings; Hand Digging & Hand Backfilling of Ditches; Clearing of Rights-of-Way & Building Sites; Curing of Concrete; Application Hardener; Handling of Chemically Treated Lumber; Installing of Wood Sheeting & Shoring; Signal Laborer; Concrete Bucket & Masonry Work; Cleaning & Moving of General Purpose Materials; General Cleanup of Scrap & Debris; & Mobile Sweeper

GROUP 2 - Mason Tender; Side Rail Setter (Metal); Stackman; Fork Lift Operator (Masonry & Plastering Contractors only); Power Driven Georgia Buggy; Chain Saw; Vibrator Operator; Mesh Handler; Power Tools (Air, Diesel, Electric, Gasoline); Wagon Drill; Pipe Layer; Wall Man; Treatment of Exposed Concrete (Chip, Bush Hammer & Rub); Concrete Saw; Gasoline Tamper Machine; Walk Behind Trenching Machine; Burner Man; Joint Maker; & Asphalt Raker

GROUP 3 - Air Track Driller; Introflax Burning Rod; Gunnite Nozzle Man Operator; Sewer, Tunnel Laborer (Free Air); & Sand Hog or Mucker (Free Air)

GROUP 4 - Holeman Drilled Piers; Augered Caissons; Sand Miner (Tunnel Free Air); Caisson Worker; & Powderman

GROUP 5 - Tunnel Person & Tunnel Miner (Pressure & Free Air); Environmental Worker; Toxic & Hazardous Waste; & Asbestos Removal

Free Hanging Scaffold Above 30' receives \$.25 Premium

PAIN0118A 05/01/2000

	Rates	Fringes
PAINTERS:		
Brush; Drywall Finisher-Vinyl Hanger	16.77	4.35
Abrasive Blaster; Fireproofing; Lead Abatement; Spray; & Waterblasting 4000 PSI and Above	17.27	4.35

PAIN0639B 05/01/2001

	Rates	Fringes
SIGN PAINTER & ERECTOR	16.67	3.97+

a+b+c

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

FOOTNOTES:

a. 7 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Christmas Day & 1 Floating Day

b. Vacation Pay: After 1 year's service - 5 days' paid vacation; After 2, but less than 10 years' service - 10 days' paid vacation; After 10, but less than 20 years' service - 15 days' paid vacation; After 20 years' service - 20 days' paid vacation

c. Funeral leave up to 3 days maximum paid leave for death of mother, father, brother, sister, spouse, child, mother-in-law, father-in-law, grandparent & inlaw provided employee attends funeral

PAIN1165E	04/01/1999		
		Rates	Fringes
GLAZIERS		20.71	4.09

PLAS0692A	06/01/2001		
		Rates	Fringes
CEMENT MASONS		17.45	6.70

PLUM0107A	08/01/2000		
		Rates	Fringes
PLUMBERS; GAS FITTERS:			
Plumbing contracts less than			
\$150,000.00		18.59	5.32
All Other Plumbing contracts		23.59	5.32

PLUM0522A	08/01/2000		
		Rates	Fringes
PIPEFITTERS & STEAMFITTERS		24.40	7.98

ROOF0147A	01/01/2001		
		Rates	Fringes
ROOFERS		16.90	4.85

SFKY0669A	04/01/2001		
		Rates	Fringes
SPRINKLER FITTERS		24.30	7.50

SHEE0110C	12/01/2000		
		Rates	Fringes
HARDIN & JEFFERSON COUNTIES:			
SHEET METAL WORKERS		24.16	8.06

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEE0110D 12/01/2000

	Rates	Fringes
MEADE COUNTY:		
SHEET METAL WORKERS	25.91	8.06

TEAM0089A 06/01/2000

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	16.77	a&b
GROUP 2	16.88	a&b
GROUP 3	16.95	a&b
GROUP 4	17.05	a&b

WORK ON HAZARDOUS OR TOXIC WASTE SITES - \$4.00 PREMIUM

FOOTNOTES:

a. Employer contribution of \$291.70 per employee per week whose name appears on the payroll and has been employed a minimum of 20 work days within any 90 consecutive day period.

b. Paid vacation of 40 hours to any employee who has been regularly employed on a project for 1 year and who has worked a minimum of 1,200 hours during the year, and 2 weeks' paid vacation to any employee who has completed 3 years' employment on a project and who has worked 1,200 hours since their 2nd anniversary date.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - 3 Tons & Under; Greaser; Tire Changer; & Mechanic Tender

GROUP 2 - Over 3 Tons; Semi-Trailer or Pole Trailer; Dump Tandem Axles; Farm Tractor (When used to pull building material & equipment)

GROUP 3 - Concrete Mixer (Hauling on jobsites); & Truck Mechanic

GROUP 4 - Euclids & Other Heavy Moving Equipment; Lowboy; Winch, A-Frame & Monorail Truck (To transport building materials)

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION LA010005 07/06/2001 LA5

Date: July 6, 2001
General Decision Number **LA010005**

Superseded General Decision No. LA000005

State: **Louisiana**

Construction Type:
BUILDING

County(ies):

ACADIA	GRANT	SABINE
ALLEN	IBERIA	ST HELENA
ASSUMPTION	IBERVILLE	ST JAMES
AVOUELLES	JACKSON	ST LANDRY
BEAUREGARD	JEFFERSON DAVIS	ST MARY
BIENVILLE	LA SALLE	TANGIPAHOA
CALDWELL	LAFOURCHE	TENSAS
CAMERON	LINCOLN	TERREBONNE
CATAHOULA	MADISON	UNION
CLAIBORNE	MOREHOUSE	VERMILION
CONCORDIA	NATCHITOCHE	VERNON
DE SOTO	OUACHITA	WASHINGTON
EAST CARROLL	PLAQUEMINES	WEBSTER
EAST FELICIANA	POINTE COUPEE	WEST CARROLL
EVANGELINE	RED RIVER	WEST FELICIANA
FRANKLIN	RICHLAND	WINN

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes & apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	05/04/2001
3	06/08/2001
4	07/06/2001

COUNTY(ies):

ACADIA	GRANT	SABINE
ALLEN	IBERIA	ST HELENA
ASSUMPTION	IBERVILLE	ST JAMES
AVOUELLES	JACKSON	ST LANDRY
BEAUREGARD	JEFFERSON DAVIS	ST MARY
BIENVILLE	LA SALLE	TANGIPAHOA
CALDWELL	LAFOURCHE	TENSAS
CAMERON	LINCOLN	TERREBONNE
CATAHOULA	MADISON	UNION
CLAIBORNE	MOREHOUSE	VERMILION
CONCORDIA	NATCHITOCHE	VERNON
DE SOTO	OUACHITA	WASHINGTON
EAST CARROLL	PLAQUEMINES	WEBSTER
EAST FELICIANA	POINTE COUPEE	WEST CARROLL

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

EVANGELINE	RED RIVER	WEST FELICIANA
FRANKLIN	RICHLAND	WINN

ASBE0021D 05/01/2001

	Rates	Fringes
BIENVILLE, CALDWELL, CLAIBORNE, DE SOTO, GRANT, JACKSON, LINCOLN, NATCHITOCHEs, OUACHITA, RED RIVER, SABINE, UNION, WEBSTER & WINN PARISHES:		

ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings & finishings to all types of mechanical systems)	16.77	4.68
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ASBE0053A 08/30/1999

	Rates	Fringes
ASSUMPTION, AVOYELLES, CATAHOULA, CONCORDIA, EAST FELICIANA, IBERIA, IBERVILLE, LAFOURCHE, LA SALLE, PLAQUEMINES, POINTE COUPEE, ST. HELENA, ST. JAMES, ST. LANDRY, ST. MARY, TANGIPAHOA, TERREBONNE, WASHINGTON & WEST FELICIANA PARISHES:		

ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	15.15	3.55
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ASBE0112A 05/01/1998

	Rates	Fringes
ACADIA, ALLEN, BEAUREGARD, CAMERON, EVANGELINE, JEFFERSON DAVIS, VERMILION & VERNON PARISHES		

ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	19.145	2.335
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ASBE0114A 07/01/2000

	Rates	Fringes
EAST CARROLL, FRANKLIN, MADISON, MOREHOUSE, RICHLAND, TENSAS & WEST CARROLL PARISHES:		

ASBESTOS WORKERS/INSULATORS (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems)	17.70	4.72
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BOIL0037A 11/01/2000

	Rates	Fringes
ASSUMPTION, LAFOURCHE, PLAQUEMINES, ST. JAMES, TANGIPAHOA,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TERREBONNE & WASHINGTON PARISHES:

BOILERMAKERS	21.85	8.34
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BOIL0079A 11/01/1999

	Rates	Fringes
ACADIA, ALLEN, BEAUREGARD, BIENVILLE, CAMERON, CLAIBORNE, DE SOTO, EVANGELINE, GRANT, IBERIA, JACKSON, JEFFERSON DAVIS, LINCOLN, NATCHITOCHEs, RED RIVER, SABINE, ST. LANDRY, ST. MARY, UNION, VERMILION, VERNON, WEBSTER & WINN PARISHES:		

BOILERMAKERS	20.10	6.50
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BOIL0582A 11/01/2000

	Rates	Fringes
AVOYELLES, CALDWELL, CATAHOULA, CONCORDIA, EAST CARROLL, EAST FELICIANA, FRANKLIN, IBERVILLE, LA SALLE, MADISON, MOREHOUSE, OUACHITA, POINTE COUPEE, RICHLAND, ST. HELENA, TENSAS, WEST CARROLL & WEST FELICIANA PARISHES:		

BOILERMAKERS	21.85	8.30
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BRLA0001A 02/01/2000

	Rates	Fringes
BRICKLAYERS & STONEMASONS:		
AREA 1	16.55	3.55
AREA 2	15.86	2.85
AREA 3	14.75	1.95
AREA 4	16.05	3.05

BRICKLAYER & STONEMASON AREA DEFINITIONS

AREA 1 - Acadia, Allen, Avoyelles, Beauregard, Cameron, Catahoula, Concordia, Evangeline, Grant, Jefferson Davis, La Salle, Natchitoches, Pointe Coupee, Sabine, St. Landry, Vernon & Winn Parishes

AREA 2 - Assumption, East Feliciana, Iberia, Iberville, St. Helena, St. Mary, Tangipahoa, Vermilion, Washington & West Feliciana Parishes

AREA 3 - Bienville, Caldwell, Claiborne, De Soto, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Red River, Richland, Tensas, Union, Webster & West Carroll Parishes

AREA 4 - Lafourche, Plaquemines, St. James & Terrebonne Parishes

BRLA0001E 11/01/1999

	Rates	Fringes
MARBLE SETTERS:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

AREA 1	17.27	3.20
AREA 2	16.14	2.85
AREA 3	14.75	1.95
AREA 4	16.45	3.05

TERRAZZO WORKERS & TILE SETTERS:

AREA 1	13.72	3.20
AREA 2	15.14	2.85
AREA 3	13.07	.95
AREA 4	15.45	3.05

AREA DEFINITIONS

AREA 1 - Acadia, Allen, Avoyelles, Beauregard, Cameron, Catahoula, Concordia, Evangeline, Grant, Jefferson Davis, La Salle, Natchitoches, Pointe Coupee, Sabine, St. Landry, Vernon & Winn Parishes

AREA 2 - Assumption, East Feliciana, Iberia, Iberville, St. Helena, St. Mary, Tangipahoa, Vermilion, Washington & West Feliciana Parishes

AREA 3 - Bienville, Caldwell, Claiborne, De Soto, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Red River, Richland, Tensas, Union, Webster & West Carroll Parishes

AREA 4 - Lafourche, Plaquemines, St. James & Terrebonne Parishes

 BRLA0001H 11/01/1999

	Rates	Fringes
CAULKERS; CLEANERS; & POINTERS:		
AREA 1	17.27	3.20
AREA 2	16.14	2.85
AREA 3	14.75	1.95
AREA 4	16.45	3.05

MARBLE, TERRAZZO & TILE FINISHERS:

AREA 1	8.95	2.20
AREA 2	8.11	2.85
AREA 3	8.95	2.20
AREA 4	8.70	2.25

AREA DEFINITIONS

AREA 1 - Acadia, Allen, Avoyelles, Beauregard, Cameron, Catahoula, Concordia, Evangeline, Grant, Jefferson Davis, La Salle, Natchitoches, Pointe Coupee, Sabine, St. Landry, Vernon & Winn Parishes

AREA 2 - Assumption, East Feliciana, Iberia, Iberville, St. Helena, St. Mary, Tangipahoa, Vermilion, Washington & West Feliciana Parishes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

AREA 3 - Bienville, Caldwell, Claiborne, De Soto, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Red River, Richland, Tensas, Union, Webster & West Carroll Parishes

AREA 4 - Lafourche, Plaquemines, St. James & Terrebonne Parishes

CARP0062A 05/01/1998

	Rates	Fringes
ASSUMPTION, IBERIA (East of the Atchafalaya River), LAFOURCHE, PLAQUEMINES, ST. JAMES (South of the Mississippi River), ST. MARY (East of the Atchafalaya River), TANGIPAOHA, TERREBONNE & WASHINGTON PARISHES:		

LATHERS	14.78	2.30
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* CARP0303B 07/01/2001

	Rates	Fringes
CATAHOULA, CONCORDIA & MADISON PARISHES:		

CARPENTERS	18.10	3.36
MILLWRIGHTS	19.10	3.36
PILEDRIVERMEN	19.10	3.36

CARP0403A 07/01/1998

	Rates	Fringes
AVOYELLES, GRANT, LA SALLE, NATCHITOCHEs & SABINE PARISHES:		

CARPENTERS	15.00	
MILLWRIGHTS	15.75	
PILEDRIVERMEN	15.50	

CARP0720A 06/01/1998

	Rates	Fringes
EAST FELICIANA, IBERVILLE (Excluding portion south of an East-West line from Darrow, Louisiana to the Atchafalaya River), POINTE COUPEE, ST. HELENA, ST. JAMES (North of the Mississippi River) & WEST FELICIANA PARISHES:		

MILLWRIGHTS	15.60	.16
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CARP0764A 04/01/2001

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER & WEBSTER PARISHES:		

CARPENTERS	16.35	3.54
PILEDRIVERMEN	18.45	3.54
MILLWRIGHTS	18.95	3.54
LATHERS	18.70	3.54

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* CARP0953A 07/01/2001

	Rates	Fringes
ALLEN, BEAUREGARD, CAMERON (Excluding Strategic Petroleum Reserve), JEFFERSON DAVIS & VERNON (Excluding Fort Polk) PARISHES:		

CARPENTERS & PILEDRIVERMEN	15.28	2.63
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CAMERON (Strategic Petroleum Reserve) & VERNON (Fort Polk) PARISHES:

CARPENTERS; MILLWRIGHTS; & PILEDRIVERMEN	18.21	2.63
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CARP1098A 05/01/1998

	Rates	Fringes
EAST FELICIANA, IBERVILLE (Excluding portion south of an East-West line from Darrow, Louisiana to the Atchafalaya River), POINTE COUPEE, ST. HELENA, ST. JAMES (North of the Mississippi River) & WEST FELICIANA PARISHES:		

CARPENTERS	10.40	1.95
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CARP1476A 06/01/1998

	Rates	Fringes
ALLEN, BEAUREGARD, CAMERON, JEFFERSON DAVIS & VERNON (Excluding Fort Polk) PARISHES:		

MILLWRIGHTS	12.53	.07
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CARP1811A 07/01/1998

	Rates	Fringes
CALDWELL, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION, WEST CARROLL & WINN PARISHES:		

CARPENTERS	12.30	1.85
MILLWRIGHTS	13.20	1.85
PILEDRIVERMEN	12.80	1.85

CARP1897A 02/01/2001

	Rates	Fringes
ACADIA, EVANGELINE, IBERIA (West of Atchafalaya River), ST. LANDRY, ST. MARY (West of Atchafalaya River) & VERMILION PARISHES:		

CARPENTERS	13.51	2.35
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CARP9999A 02/01/1997

	Rates	Fringes
ASSUMPTION, IBERIA (East of the Atchafalaya River), IBERVILLE		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

(South of an East-West line from Darrow, Louisiana to the Atchafalaya River), LAFOURCHE, PLAQUEMINES, ST. JAMES (South of the Mississippi River), ST. MARY (East of the Atchafalaya River), TANGIPAHOA, TERREBONNE & WASHINGTON PARISHES:

CARPENTERS	14.21	3.20
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* ELEC0130A 03/01/2001

	Rates	Fringes
ASSUMPTION, LAFOURCHE, PLAQUEMINES, ST. JAMES, ST. MARY (Northeast of the Atchafalaya River) & TERREBONNE PARISHES:		

ELECTRICIANS & CABLE SPLICERS	20.45	3.74
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ELEC0130C 01/01/2000

	Rates	Fringes
ASSUMPTION, LAFOURCHE, PLAQUEMINES, ST. JAMES, ST. MARY (Northeast of Atchafalaya River) & TERREBONNE PARISHES:		

LINE CONSTRUCTION:

Lineman	19.39	3.61
Hole Digging Equipment; Tractor with Winch & Derrick; Line Truck with Winch & Derrick Working in Hot Lines	14.54	3.47
Pole Truck & Trailer or Pole Hauling & Setting Truck (Not in Energized Lines)	12.60	3.41
Groundman	9.695	3.32
Truck without Winch	8.73	3.29

ELEC0194A 01/04/2001

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, NATCHITOCHEs (Northeast of the Red River), RED RIVER & WEBSTER PARISHES:		

ELECTRICIANS	18.90	7.53
CABLE SPLICERS	19.40	7.54

ELEC0194B 04/01/1998

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, NATCHITOCHEs (East of the Red River), RED RIVER & WEBSTER PARISHES:		

LINE CONSTRUCTION:

Lineman	14.45	3.39
Operator	10.60	3.25
Groundman; Truck Driver	6.45	3.09

ELEC0446A 03/01/2001

	Rates	Fringes
CALDWELL, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MADISON,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION & WEST CARROLL
PARISHES:

ELECTRICIANS	16.80	3.78
CABLE SPLICERS	17.05	3.79

ELEC0446B 03/01/2001

	Rates	Fringes
CALDWELL, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MADISON, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION & WEST CARROLL PARISHES:		

LINE CONSTRUCTION:

Equipment Operator; Lineman	16.80	3.78
Cable Splicer	17.05	3.79
Groundman	10.08	3.58

ELEC0576A 03/01/2001

	Rates	Fringes
AVOYELLES, CATAHOULA, CONCORDIA, EVANGELINE, GRANT, LA SALLE, NATCHITOCHEs (Southwest of Red River), SABINE, VERNON & WINN PARISHES:		

ELECTRICIANS	17.20	3.39
CABLE SPLICERS	17.70	3.41

* ELEC0576C 03/01/2001

	Rates	Fringes
AVOYELLES, CATAHOULA, CONCORDIA, EVANGELINE, GRANT, LA SALLE, NATCHITOCHEs (Southwest of Red River), SABINE, VERNON & WINN PARISHES:		

LINE CONSTRUCTION:

Equipment Operator; Lineman	17.20	3.39
Groundman	11.18	3.15

ELEC0861A 10/01/2000

	Rates	Fringes
ACADIA, ALLEN, BEAUREGARD, CAMERON, IBERIA, JEFFERSON DAVIS, ST. MARY (Southwest of Atchafalaya River) & VERMILION PARISHES:		

ELECTRICIANS	17.83	4.43
CABLE SPLICERS	18.33	4.43

ELEC0861C 05/01/1998

	Rates	Fringes
ACADIA, ALLEN, BEAUREGARD, CAMERON, IBERIA, JEFFERSON DAVIS, ST. MARY (Southwest of Atchafalaya River) & VERMILION PARISHES:		

LINE CONSTRUCTION:

Equipment Operator; Lineman; & Truck Driver	19.70	3.96
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Cable Splicer	20.20	3.98
Groundman	17.70	3.90

ELEC0995A 06/01/2001

	Rates	Fringes
EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. LANDRY & WEST FELICIANA PARISHES:		

ELECTRICIANS:

Electrical Contracts Up to & Including 5 Million Dollars:

Electrician	18.45	4.12
Cable Splicer	18.70	4.15

Electrical Contracts Over 5 Million Dollars:

Electrician	19.70	4.27
Cable Splicer	19.95	4.29

ELEC0995C 06/01/2001

	Rates	Fringes
EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. LANDRY & WEST FELICIANA PARISHES:		

LINE CONSTRUCTION:

Electrical Contracts Up To & Including \$5,000,000.00:

Lineman; Technician	18.45	4.12
Cable Splicer	18.70	4.15
Heavy Equipment Operator	13.84	3.59
Truck Driver; Groundman	8.30	2.95

Electrical Contracts Over \$5,000,000.00:

Lineman; Technician	19.70	4.27
Cable Splicer	19.95	4.29
Heavy Equipment Operator	14.775	3.70
Truck Driver; Groundman	8.865	3.02

ELEC1077A 06/01/2001

	Rates	Fringes
TANGIPAHOA & WASHINGTON PARISHES:		
ELECTRICIANS	18.05	3.04
CABLE SPLICERS	18.80	3.06

ELEV0016A 07/10/1999

	Rates	Fringes
ACADIA, ALLEN, ASSUMPTION, BEAUREGARD, CAMERON, EAST FELICIANA, EVANGELINE, IBERIA, IBERVILLE, JEFFERSON DAVIS, LAFOURCHE, PLAQUEMINES, POINTE COUPEE, ST. HELENA, ST. JAMES, ST. LANDRY, ST. MARY, TANGIPAHOA, TERREBONNE, VERMILION, WASHINGTON & WEST FELICIANA PARISHES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEVATOR MECHANICS 20.585 6.935+a+b

FOOTNOTES:

- a. Seven Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; The Day after Thanksgiving; & Christmas Day
- b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years

ELEV0098B 12/05/2000

	Rates	Fringes
AVOYELLES, BIENVILLE, CALDWELL, CATAHOULA, CLAIBORNE, CONCORDIA, DE SOTO, EAST CARROLL, FRANKLIN, GRANT, JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHEs, OUACHITA, RED RIVER, RICHLAND, SABINE, TENSAS, UNION, VERNON, WEBSTER, WEST CARROLL & WINN PARISHES:		

ELEVATOR MECHANICS 22.225 7.195+a+b

FOOTNOTES:

- a. 7 Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; the day after Thanksgiving; & Christmas Day
- b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years.

ENGI0406A 05/01/1998

	Rates	Fringes
EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA & WEST FELICIANA PARISHES; ASSUMPTION & ST. JAMES PARISHES (Northwest of a straight line drawn from the city of Berwick to the city of Lutchter); IBERIA PARISH (East & west of a line from the city of Berwick, north to the eastern boundary of the city of Krotz Springs); TANGIPAHOA & WASHINGTON PARISHES (West of a line drawn north from the city of Lutchter to the east side of the city of Hammond to the Louisiana-Mississippi border):		

POWER EQUIPMENT OPERATORS:

GROUP 1	16.11	2.50
GROUP 2	16.36	2.50
GROUP 3	16.61	2.50
GROUP 4	16.86	2.50
GROUP 5	17.11	2.50
GROUP 6	17.36	2.50
GROUP 7	15.86	2.50
GROUP 8	13.18	2.50
GROUP 9	11.61	2.50
GROUP 10	9.45	2.50
GROUP 11	10.78	2.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Crane 60 Tons & Over; Crane Boom 100 ft. & Over, but less than 150 ft.; & Piledriver, Leads 100 ft. & Over, but less than 150 ft.

GROUP 2 - Crane 100 Tons, up to 125 Tons; Crane Boom 150 ft. & Over, but less than 225 ft.; & Piledriver, Leads 150 ft. & Over, but less than 225 ft.

GROUP 3 - Crane 125 Tons, up to 200 Tons; Crane Boom 225 ft. & Over, but less than 300 ft.; & Piledriver, Leads 225 ft. & Over, but less than 300 ft.

GROUP 4 - Crane 200 Tons, up to 300 Tons

GROUP 5 - Crane 300 Tons

GROUP 6 - Crane Boom 300 ft. & Over; & Pildedriver 300 ft. & Over

GROUP 7 - Crane; Backhoe; Cableway; Concrete Mixer, 16S & Up; Derrick; Dragline; Dredge; Hoist, 2 Drums; Locomotive Crane; Paving Mixer; Piledriver; Road Paver; Roller on Asphalt or Brick (5 Tons or Over); Shovel; Sideboom Cat; Bulldozer; Motor Patrol; Scraper; Hydrolift Crane; Hydrolift Truck; Yard Crane; Cherry Picker, etc.; Foundation, Boring & Reaming Machine; Cement Stabilizer; Trenching Machine; Asphalt Spreader; Traxcavator & Similar Front End Loading Equipment with Scoop or Bucket of 1 cu. yd. or more capacity; Tug Boat; Turnapull, Euclid, DW-10 & Other Similar Self-Loading Earth Moving Equipment; Concrete Pump (Not Pumpcrete); & Computer Batch Plant

GROUP 8 - A-Frame Truck; Crew Boat; Fireman; Fork Lift; Straddle Buggy; Traxcavator, Scoopmobile & Similar Front End Loading Equipment with Scoop or Bucket, Under 1 cu. yd. capacity; Locomotive; Well Point System; Unit Operator; & Hoist, 1 Drum, 4 stories & Over

GROUP 9 - Air Compressor; Asphalt Plant Engineer; Blade Grader; Distributor (Bituminous Surface); Finishing Machine (Concrete, Paving); Hoist, 1 Drum, Less than 4 stories; Concrete Mixer Under 16-S; Oiler Driver; Pump Crete; Street & Road Sweeper; Roller (Except on Asphalt or Brick); Roller, Asphalt or Brick (Under 5 Tons); Post-Hole Digger; Tractor, Bush Hog & Similar Grass or Bush Cutting Equipment; & Batch Plant

GROUP 10 - Oiler

GROUP 11 - Pump, Over 3" Suction; & Snatch Cat

ENGI0406B 11/01/1998

Allen, Beauregard, Cameron, Jefferson Davis & Vernon Parishes:
Rates Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS:

Group 1	13.36	2.50
Group 2	9.25	2.50
Group 3	13.61	2.50
Group 4	13.86	2.50
Group 5	14.11	2.50
Group 6	14.36	2.50
Group 7	14.86	2.50
Group 8	8.59	2.50

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Crane; Derrick; Deck Winch (2); Hi-Ho & Similar Type Equipment; Three Drum (or more) Stabilizer; Pull; Concrete Mixer 1 yd. & over; Paver; Ditching or Trenching Machine (Track Type); Mechanic & Equipment Welder; Wellpoint System; Hoist, 2 Drums or more; Hoist, 1 Drum, 40 Vertical ft. or more; Scraper; Bulldozer, Rubber-tired or Track, other than Farm-type; Scoopmobile; Motor Patrol; Gradeall; Roller on Hot Mix; Asphalt Paving Machine; Front End Loader, other than Farm-type, 1 cu. yd. or over; Shovel & Backhoe & Equivalent Equipment; Piledriver; Sideboom Cat; Boom Truck; Bush Hog; Cableway; Cherry Picker; Dredge; Foundation Drill Locomotive; Motorized Street Sweeper (Self-propelled) Push Cat; & Test Pump (Internal Combustion Engine Powered)

GROUP 2 - Two Drum & Single Drum Stabilizer; Front End Loader under 1 cu. yd.; A-Frame Truck when handling Steel or Pipe; Finishing Machine (Concrete); Power Subgrader; 2 Tractors (Crawler Type); 1 Drum Hoist Under 40 Vertical Ft.; Fireperson; Concrete Spreader; Pugmill; Bituminous Distributor on Surface Treatment & Equivalent Equipment; Bull Float & Equivalent Equipment; Job Greaseman; Work Boat, not requiring licensed operators; Inboard & Outboard Motored Crew Boat; Concrete Mixer Under 1 yd.; Spray Curing Machine; Roller on Subgrade; 1 Air Compressor over 125 cu. ft.; Form Grader; Asphalt Finisher Screedman; Pump Over 4"; Scale Operator; Crusher; Concrete Jointing Machine; Concrete Saw; Tack Machine & Equivalent Equipment; Pumpcrete; Electric Elevator (Inside); Oiler Driver; Farm-type Rubber Tired Tractor with attachments, except Backhoe; Kolum Buff & Similar Equipment; Fork Lift, 10-ton capacity & Under; Batch Plant; Oiler on Crane using Air to Drive Pile; Fireperson Operating Steam Valve, Unit Operator; Mixer (1 Sack Under); Oiler-Compressor; Oiler-Driver on Motor Crane; Oiler-Fireperson; Pump (Under 3" Suction); Scale Operator, Water Blast Pump; & Welding Machine

GROUP 3 - Operator on Crane 60 to 99 Tons; Crane with Boom 100 Ft. to 149 Ft.

GROUP 4 - Operator on Crane 100 to 125 Tons; Crane with Boom 150 Ft. to 224 Ft.

GROUP 5 - Operator on Crane 126 to 200 Tons

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GROUP 6 - Operator on Crane 201 to 300 Tons; Crane with Boom
225 Ft. to 299 Ft.

GROUP 7 - Operator on Crane Over 300 Tons; Crane with Boom 300
& Over

GROUP 8 - Oiler

ENGI0406C 05/06/1998

Rates Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER & WEBSTER PARISHES:

POWER EQUIPMENT OPERATORS:

GROUP 1	9.91	3.55
GROUP 2	11.79	3.55
GROUP 3	12.65	3.55
GROUP 4	13.50	3.55
GROUP 5	14.23	3.55
GROUP 6	14.87	3.55
GROUP 7	15.41	3.55

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Unit Operator; Well Point; Water Pump (Over 6");
Fireman; Assistant to Engineer (Oiler, Signalman, Tender);
Motorized Sweeper; & Roller

GROUP 2 - A-Frame, Winch Truck; Farm Type Tractor with
Attachments (Excluding Backhoe); Single Drum Hoist (Less than 6
stories or 60 ft.); Elevator Operator; Kolum Buff Machine; Bull
Float; Concrete Spreader; Finish Machine; Dowel Bar Machine;
Oiler Driver; Distributor (Bituminous Surface); Forklift (Up to
10,000 lbs.); Ditchwitch & Similar Equipment (Under 66" Depth);
& Skytrack, Carrylift & Similar Equipment

GROUP 3 - Pull Cat; Concrete Pump (Under 6"); Straddle Buggy;
Crawler Tractor, Bulldozer & Front End Loader (D-4 Equivalent &
Under); A-Frame, Winch Truck (When Handling Steel or Pipe); &
Grease Serviceman

GROUP 4 - Asphalt Plant; Backhoe (Rubber Tired); Hydralift &
Boom Truck; Double Drum Hoist; Single Drum Hoist (Over 6
stories or 60 ft.); Motor Patrol (General); Multiengine
Scrapper (Tandem or Dual Units); Hydrocrane (Less than 15
Tons); Winch Cat (Hoisting); Road Paver; Concrete Pump
(Over 6"); Tractorvator; Forklift (Over 10,000 lbs.); Asphalt
Spreader; Sideboom Cat; & Scoopmobile

GROUP 5 - Crane (Under 60 Tons); Clamshell, Dragline, Shovel,
Track Mounted Backhoe (Up to 2 Yds.); Motor Patrol (Finish);
Crawler, Tractor, Bulldozer, Front End Loader (Over D-4 &
Equivalent); Cableway; Concrete Mixer, Batch Plant; Derrick;
Trenching & Ditching Machine (Over 66" Depth); Hoist (Over 2
Drums); Piledriver; & Mechanic, Welder

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GROUP 6 - Clamshell, Dragline, Shovel, Track Mounted Backhoe
(Over 2 Yds.); & Crane (Under 200 Tons)

GROUP 7 - Crane (200 Tons & Over)

ENGI0406D 11/01/1998

	Rates	Fringes
ACADIA, AVOYELLES, CALDWELL, CATAHOULA, CONCORDIA, EAST CARROLL, EVANGELINE, FRANKLIN, GRANT, IBERIA (Excluding portion east & west of a line from the city of Berwick, north to the eastern boundary of the city of Krotz Springs), JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHEs, OUACHITA, RICHLAND, SABINE, ST. LANDRY, ST. MARY, TENSAS, UNION, VERMILION, WEST CARROLL & WINN PARISHES:		

POWER EQUIPMENT OPERATORS:

GROUP 1	9.55	2.20
GROUP 2	10.58	2.20
GROUP 3	10.68	2.20
GROUP 4	11.15	2.20
GROUP 5	13.32	2.20

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Oiler

GROUP 2 - Oiler-Driver

GROUP 3 - Scaleperson

GROUP 4 - Air Compressor; Asphalt Plant; Bulldozer, D-4 &
Equivalent & Under; Bullfloats; Concrete Spreader; Finishing
Machines; Concrete Mixers (16-s or less); Concrete Saw;
Distributors (Bituminous Surface); Dowell Bar Machine; Farm-
type Tractor (With all attachments, except Backhoe); Fire-
person; Fork Lifts (Other than Setting Steel, Machinery or
Pipe); Hoist, 1 Drum less than 4 stories; Kolum Buff Machine;
Pull Cats; Pump (3" & Over); Pump, Concrete (Under 6");
Rollers, except on Asphalt or Brick; Straddle Buggies;
Sweepers on Streets & Roads (Motorized); Winch Truck, A-Frame
(Other than handling Steel or Pipe)

GROUP 5 - Asphalt Spreader; Backhoe; Bulldozer, Over D-4 &
Equivalent; Cableways; Concrete Mixer, Over 16-s; Cranes;
Derricks; Ditching or Trenching Machines; Draglines; Fork
Lifts (Setting Steel, Machinery or Pipe); Front End Loaders
(Except Farm-type Tractors); Grease Service Person; Hoist,
1 Drum, 4 stories or more or 40 ft. (on Structures other
than buildings); Hoist, 2 Drums & Over; Hydrolifts; Heavy
Duty Mechanic; Motor Patrols; Piledrivers; Pump Concrete
(6" & Over); Road Pavers; Rollers on Asphalt or Brick;
Scoopmobiles; Scrapers; Sideboom Cats; Shovels; Tractor-
vators; Welder; Winch Cats (Hoisting); Winch Truck, A-Frame
(Handling Steel or Pipe)

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ENGI0406E 11/01/1998

LAFOURCHE, PLAQUEMINES & TERREBONNE PARISHES; Rates Fringes

ASSUMPTION, ST. JAMES, ST. MARY, TANGIPAHOA & WASHINGTON PARISHES
 (That portion of southeastern Louisiana bounded on the north by the state of Mississippi, on the east by the state of Mississippi & the Mississippi Sound, on the south by the Gulf of Mexico & on the west by a line drawn as follows: beginning at a point on the Louisiana-Mississippi boundary in Washington Parish, due north of the town of Hackley, then southwesterly in a straight line to a point on the east bank of the Mississippi River at the southernmost point of Lutcher ((including Gramercy in the area)), thence in a more southwesterly direction in a straight line to midstream of the Atchafalaya River at Morgan City-Berwick ((including Morgan City in this area)), thence southerly on a line following midstream of the Atchafalaya River to the Atchafalaya Bay & in a line due south to the Gulf of Mexico):

POWER EQUIPMENT OPERATORS:

GROUP 1	17.23	2.50
GROUP 2	16.73	2.50
GROUP 3	16.23	2.50
GROUP 4	15.98	2.50
GROUP 5	15.73	2.50
GROUP 6	15.48	2.50
GROUP 7	15.23	2.50
GROUP 8	12.68	2.50
GROUP 9	12.49	2.50
GROUP 10	10.79	2.50
GROUP 11	9.08	2.50

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

- GROUP 1 - Crane Over 400 Tons; & Crane Boom 400 Ft. & Over
- GROUP 2 - Crane 300 Tons & Up to 400 Tons; Crane Boom 300 Ft. & Over, but Less Than 400 Ft.; & Tower Crane Over 30 Floors
- GROUP 3 - Crane 200 Tons & Up to 300 Tons; Crane Boom 225 Ft. & Over, but Less Than 300 Ft.; & Tower Crane Boom Height 225 Ft. & Over Up to 30 Floors
- GROUP 4 - Crane 125 Tons & Up to 200 Tons
- GROUP 5 - Crane 100 Tons & Up to 125 Tons; Crane Boom 150 Ft. & Over, but Less Than 225 Ft.; Tower Crane Boom Height 150 Ft. & Over, but Less Than 225 Ft.
- GROUP 6 - Crane 60 Tons & Above; Crane Boom 100 Ft. & Over, but Less Than 150 Ft.; Tower Crane Boom Height 100 Ft. & Over, but Less Than 150 Ft.
- GROUP 7 - Heavy Equipment
- GROUP 8 - Unit & wellpoint

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GROUP 9 - Light Equipment

GROUP 10 - Batch Plant; & Oiler (Driver)

GROUP 11 - Oiler

IRON0058A 06/01/2000

	Rates	Fringes
PLAQUEMINES PARISH;		

LAFOURCHE, ST. JAMES, TANGIPAHOA, TERREBONNE & WASHINGTON PARISHES (West of a straight line drawn from the Louisiana-Mississippi border, east of the city limits of Warrenton, Louisiana, southwest through Hammond, Louisiana to the Gulf of Mexico):

IRONWORKERS	16.80	4.60
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IRON0469A 10/15/2000

	Rates	Fringes
MADISON PARISH (The cities of Mound & Delta & adjacent areas):		

IRONWORKERS	16.80	4.36
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IRON0591A 06/01/2000

	Rates	Fringes
DE SOTO, RED RIVER & WEBSTER PARISHES;		

BIENVILLE, CLAIBORNE, NATCHITOCHEs & WINN PARISHES (West of a line drawn directly south from the Arkansas-Louisiana border through the cities of Arcadia & Cloutierville);

SABINE PARISH (North of a line drawn from the Natchitoches Parish boundary west through the city of Peason to the Texas-Louisiana border):

IRONWORKERS	16.80	4.35
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IRON0623A 06/01/2000

	Rates	Fringes
ASSUMPTION, AVOYELLES, EAST FELICIANA, IBERIA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. MARY & WEST FELICIANA PARISHES;		

ACADIA, EVANGELINE, ST. LANDRY & VERMILION PARISHES (East of a line drawn from the meeting point of the boundaries of the Parishes of Avoyelles, Evangeline & Rapides, southeast along the western city limits of Abbeville to the Gulf of Mexico);

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CATAHOULA, CONCORDIA & LA SALLE PARISHES (South of a line drawn from Natchez through the city of Cottonport to the Rapides Parish line, then west along the southern border of Rapides Parish);

LAFOURCHE, TANGIPAHOA, TERREBONNE & WASHINGTON PARISHES (West of a straight line drawn from the Louisiana-Mississippi border, west of the city limits of Warrenton, southwest through Hammond to the Gulf of Mexico);

ST. JAMES PARISH (West of a straight line drawn from the Louisiana-Mississippi border, west of the city limits of Warrenton, southwest through Hammond to the Gulf of Mexico):

IRONWORKERS	16.80	4.35
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IRON0710A 10/15/2000

	Rates	Fringes
ALLEN, BEAUREGARD, CALDWELL, CAMERON, EAST CARROLL, FRANKLIN, GRANT, JACKSON, JEFFERSON DAVIS, LINCOLN, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION, VERNON & WEST CARROLL PARISHES;		

ACADIA, EVANGELINE, ST. LANDRY & VERMILION PARISHES (Southwest of Rapides Parish & west of a line south of the westernmost border between Rapides & Evangeline);

BIENVILLE, CLAIBORNE, NATCHITOCHEs & WINN PARISHES (East of a line drawn directly south from the Arkansas-Louisiana border through the cities of Arcadia & Cloutierville);

CATAHOULA, CONCORDIA & LA SALLE PARISHES (North of a line drawn from Natchez through the city of Cottonport to the Rapides Parish line);

MADISON PARISH (Except the cities of Mound, Delta & adjacent areas):

IRONWORKERS	16.80	4.36
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LABO0207A 06/01/1999

	Rates	Fringes
ALLEN, BEAUREGARD, CAMERON, JEFFERSON DAVIS & VERNON PARISHES:		

LABORERS:

Vernon Parish (Ft. Polk)	9.75	1.75
Allen, Beauregard, Cameron, Jefferson Davis & Vernon (Exclu. Ft. Polk) Parishes	9.75	1.75

LABO0229A 05/01/1998

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER, SABINE & WEBSTER PARISHES:		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS:

Jackhammer Operators	7.50	.90
All Other Laborers	6.10	.90

LABO0689A 07/01/1998

	Rates	Fringes
ASSUMPTION, LAFOURCHE, PLAQUEMINES, ST. JAMES, TANGIPAOHA, TERREBONNE & WASHINGTON PARISHES:		

LABORERS:

Assumption, St. James, Tangipahoa & Washington Parishes	6.91	1.42
Lafourche & Plaquemines Parishes	8.13	1.42
Terrebonne parish	9.70	1.42

LABO0762A 11/01/1998

	Rates	Fringes
ACADIA, AVOYELLES, EVANGELINE, GRANT, IBERIA, LA SALLE, NATCHITOCHEs, ST. LANDRY, ST. MARY, VERMILION & WINN PARISHES:		

LABORERS:

GROUP 1	8.92	.80
GROUP 2	9.12	.80

LABORER CLASSIFICATIONS

GROUP 1 - Building; Rotary Drill; & Foundation Drill Crewmen

GROUP 2 - Mason Mixer; Plaster Mixer; Mechanical Tool Operator (Jackhammer, Vibrator, Tamper, Chipping Gun, Soil Tiller) & Burner on Demolition; Sandblaster; Laying Concrete Pipe, Clay Pipe, Plastic Pipe, Asbestos Cement Pipe, Casing Pipe & Corrugated Metal Pipe, as Sewer Pipe & Underground Tile (Caulkers, Joint Wipers, Hot Pot & Pipe Layers); Gas & Oil Pipeline Laborer; Wrapper & Doper

LABO0831A 11/01/1998

	Rates	Fringes
CALDWELL, CATAHOULA, CONCORDIA, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MADISON, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION & WEST CARROLL PARISHES:		

LABORERS:

GROUP 1	8.45	.80
GROUP 2	8.60	.80
GROUP 3	8.75	.80

LABORER CLASSIFICATIONS

GROUP 1 - General; Tender (Brickmason, Stonemason, Cement Mason, Carpenter & Plasterer); Stripping & Dismantling; Concrete Form Work; Loading, Unloading, Carrying & Handling Steel & Steel

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Mesh; Assisting to the Setting of Cut Stone, Granite or Artificial Stone; Building Scaffold; & Shoring

GROUP 2 - Mechanical Tool Operator (Air, Electric, Motor, Engine, Etc.); Sewer Pipelayer; Mortar Mixer (Hand or Machine); Gunnite Operator; Tile, Terrazzo & Marble Setter Finishers

GROUP 3 - Pipe Doper & Burner

LABO1177A 05/01/1998

EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA & WEST FELICIANA PARISHES:

LABORERS:

	Rates	Fringes
GROUP 1	9.50	1.05
GROUP 2	9.60	1.05
GROUP 3	9.65	1.05
GROUP 4	10.23	1.05
GROUP 5	9.98	1.05
GROUP 6	9.90	1.05
GROUP 7	7.21	1.05

LABORER CLASSIFICATIONS

GROUP 1 - Building & General; Carpenter Tender; Scaffold Building; Handling & Conveying Materials; Handling Steel Pans; Tank Scalers; Mixing & Pouring Concrete; & Deck Hands

GROUP 2 - Scaler Using Boatswain Chair, Safety Belt or Power Tool; Power Tool Operator (Hammer Man, Tamper Man, Concrete Chipper or Cutter, Vibrator, Power Buggy, & Chain Saw Operator); Pipe & Sewer Man (Laying of all types of Pipe, Wiping Joints, Cleaning & Wrapping Pipe, Caulker & Grade Carrier)

GROUP 3 - Mason Tender; Plasterer Tender; Cement Mix (Wet or Dry); Hod Carrier; Mortar Mixer & Cement Mixer (Wet or Dry); Hot Pan Man; Concrete Cutter & Puddler; Asphalt Worker; Well Drilling Tender; Gunite Worker & Pot Tender (Sandblasting)

GROUP 4 - Blaster-Powder Man

GROUP 5 - Blaster-Powder Man Tender

GROUP 6 - Form Setter & Liner, Steel; Nozzle Operator (Gunite or Sandblasting)

GROUP 7 - Cleanup

PAIN0080B 05/15/2001

ACADIA, ALLEN (Part), BEAUREGARD (Part), CAMERON (Part), EVANGELINE (Part) & JEFFERSON DAVIS (Part) PARISHES:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GLAZIERS 15.60 2.40

PAIN0080D 11/01/2000

	Rates	Fringes
ACADIA (Part), ALLEN, BEAUREGARD, CAMERON, EVANGELINE (Part) & JEFFERSON DAVIS PARISHES:		

PAINTERS 13.94 1.15

PAIN0080I 04/01/2001

	Rates	Fringes
ASSUMPTION (South of Grand Bayou), LAFOURCHE, PLAQUEMINES, ST. JAMES, ST. MARY (Morgan City Area), TERREBONNE & WASHINGTON PARISHES:		

PAINTERS:

Power Plants, Refineries, Cracking Plants, Tank Farms, Chemical Processing Plants, Missile Plants, Smoke Stacks & Cat Crackers	14.99	3.10
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All Other Commercial Building Work	13.99	3.10
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PAIN0080K 04/01/2000

	Rates	Fringes
BIENVILLE, CALDWELL, CATAHOULA, CLAIBORNE, DE SOTO, EAST CARROLL, FRANKLIN, GRANT, JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHEs, OUACHITA, RED RIVER, RICHLAND, SABINE, TENSAS, UNION, VERNON, WEBSTER, WEST CARROLL & WINN PARISHES:		

PAINTERS 11.00 1.90

PAIN0728B 05/01/1997

	Rates	Fringes
ACADIA (Part), ASSUMPTION (North of Hwy #22), CONCORDIA, EAST FELICIANA, IBERIA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. LANDRY (Southern half), ST. MARY (Excluding Morgan City Area), TANGIPAHOA (West of Hwy #51), VERMILION & WEST FELICIANA PARISHES:		

PAINTERS:

Drywall; Taping; Floating; Sheetrock; & Texture	12.90	1.45
Brush; Sandblasting; Spray & Steel	14.65	1.45

LA010005 - 1

PAIN1244N 03/01/2000

	Rates	Fringes
ALLEN (Part), ASSUMPTION, AVOYELLES, BEAUREGARD (Part), BIENVILLE, CALDWELL, CAMERON (Part), CATAHOULA, CLAIBORNE, CONCORDIA, DE SOTO, EAST CARROLL, EAST FELICIANA,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

EVANGELINE (Part), FRANKLIN, GRANT, IBERIA, IBERVILLE, JACKSON, JEFFERSON DAVIS (Part), LA SALLE, LAFOURCHE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHEs, OUACHITA, PLAQUEMINES, POINTE COUPEE, RED RIVER, RICHLAND, SABINE, ST. HELENA, ST. JAMES, ST. LANDRY, ST. MARY, TANGIPAHOA, TENSAS, TERREBONNE, UNION, VERMILION, VERNON, WASHINGTON, WEBSTER, WEST CARROLL, WEST FELICIANA & WINN PARISHES:

GLAZIERS	15.20	2.94
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PLAS0483A 05/01/1998

	Rates	Fringes
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ASSUMPTION, EAST FELICIANA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. JAMES, TANGIPAHOA & WEST FELICIANA PARISHES:

PLASTERERS	15.20	
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PLAS0487A 04/01/1998

	Rates	Fringes
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ALLEN, AVOYELLES, BEAUREGARD, CAMERON, CATAHOULA, CONCORDIA, EVANGELINE, GRANT, JEFFERSON DAVIS, LA SALLE & VERNON PARISHES:

CEMENT MASONS	13.42	
PLASTERERS	14.20	

PLAS0567A 07/01/1999

	Rates	Fringes
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LAFOURCHE, PLAQUEMINES & TERREBONNE PARISHES:

CEMENT MASONS (Building Foundations only)	14.08	1.68
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PLAS0685A 10/01/1998

	Rates	Fringes
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ACADIA, IBERIA, ST. LANDRY, ST. MARY & VERMILION PARISHES:

CEMENT MASONS	11.00	2.20
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PLAS0685C 07/01/1998

	Rates	Fringes
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ACADIA, IBERIA, ST. LANDRY, ST. MARY & VERMILION PARISHES:

PLASTERERS	14.25	.01
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PLAS0812A 05/01/1998

	Rates	Fringes
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ASSUMPTION, EAST FELICIANA, IBERVILLE, POINT COUPEE, ST. HELENA, ST. JAMES, TANGIPAHOA & WEST FELICIANA PARISHES:

CEMENT MASONS	13.55	
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLAS0903A 05/01/1998

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER & WEBSTER PARISHES:		
CEMENT MASONS	9.65	.85

PLUM0060A 06/01/2001

	Rates	Fringes
LAFOURCHE, PLAQUEMINES, ST. JAMES (Eastern part), TANGIPAHOA (Cities of Robert, Hammond, Ponchatoula, Tickfaw, Baptist & Pumpkin Center) TERREBONNE & WASHINGTON PARISHES:		
PIPEFITTERS; PLUMBERS; & STEAMFITTERS	19.65	4.56

PLUM0106A 11/01/1999

	Rates	Fringes
ACADIA, ALLEN, BEAUREGARD, CAMERON, IBERIA (West of Hwy 31 & Hwy 83), JEFFERSON DAVIS, ST. LANDRY & VERMILION PARISHES:		
PLUMBERS & STEAMFITTERS	18.00	3.74

PLUM0141A 08/01/2000

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER, SABINE & WEBSTER PARISHES;		
NATCHITOCHEs & VERNON PARISHES (Northwest of a line drawn from Natchitoches to Anacoco through Bellwood & north of Hwy #111 between Anacoco & Haddens);		
WINN PARISH (West of a line drawn from Winnfield to the junction of the Parish boundaries of Winn, Bienville & Jackson):		
PLUMBERS & PIPEFITTERS	17.90	5.55

* PLUM0198A 06/01/2001

	Rates	Fringes
ASSUMPTION, EAST FELICIANA, IBERIA (East of Hwy 31 & Hwy 83), IBERVILLE, POINTE COUPEE, ST. HELENA, ST. JAMES (Western part), ST. MARY, TANGIPAHOA (Excluding Cities of Robert, Hammond, Ponchatoula, Tickfaw, Baptist & Pumpkin Center) & WEST FELICIANA PARISHES:		
PLUMBERS & STEAMFITTERS	21.00	4.30

PLUM0247A 05/01/2001

	Rates	Fringes
AVOYELLES, CATAHOULA, CONCORDIA, EVANGELINE, GRANT, LA SALLE, NATCHITOCHEs (City limits of Natchitoches, Hwy #6 to Hagedwood &		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Hwy #117), & VERNON (Ft. Polk & Hwy #117, south to Leesville)
 PARISHES:

PLUMBERS & STEAMFITTERS:

Work where contract price of the mechanical work is less than \$3,000,000.00	17.20	3.70
Work where contract price of the mechanical work is more than \$3,000,000.00	18.20	3.70

* PLUM0659A 07/01/2001

	Rates	Fringes
CALDWELL, EAST CARROLL, FRANKLIN, JACKSON, LINCOLN, MADISON, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION, WEST CARROLL & WINN (North of Hwy #84) PARISHES:		

PIPEFITTERS; PLUMBERS; & STEAMFITTERS	17.00	3.95
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ROOF0059A 07/01/1998

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, NATCHITOCHEs, RED RIVER, SABINE & WEBSTER PARISHES:		

ROOFERS:

Roofers	9.75	.24
Kettlemen	6.50	.24

ROOF0076A 05/01/1998

	Rates	Fringes
ALLEN, BEAUREGARD, CAMERON, EVANGELINE, JEFFERSON DAVIS, VERMILION & VERNON PARISHES:		

ROOFERS	12.90	.20
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ROOF0141A 05/01/1998

	Rates	Fringes
ASSUMPTION, LAFOURCHE, PLAQUEMINES, ST. JAMES, ST. MARY, TERREBONNE & WASHINGTON PARISHES:		

ROOFERS	12.00	1.90
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ROOF0191A 01/01/1998

	Rates	Fringes
CALDWELL, CATAHOULA, CONCORDIA, EAST CARROLL, FRANKLIN, GRANT, JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, OUACHITA, RICHLAND, TENSAS, UNION, WEST CARROLL & WINN PARISHES:		

ROOFERS:

Roofers	12.30	.30
Kettlemen	9.40	.30

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOF0317A 10/01/2000

	Rates	Fringes
ACADIA, AVOYELLES, EAST FELICIANA, IBERIA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. LANDRY, TANGIPAHOA & WEST FELICIANA PARISHES:		
ROOFERS	15.50	2.70

SFLA0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	21.52	6.50

SHEE0011A 05/01/2001

	Rates	Fringes
LAFOURCHE, PLAQUEMINES, ST. JAMES, TERREBONNE & WASHINGTON PARISHES:		
SHEET METAL WORKERS	19.62	5.92

SHEE0021A 08/01/2000

	Rates	Fringes
ACADIA, ALLEN, ASSUMPTION, BEAUREGARD, CAMERON, EAST FELICIANA, EVANGELINE, IBERIA, IBERVILLE, JEFFERSON DAVIS, POINTE COUPEE, ST. HELENA, ST. LANDRY, ST. MARY, TANGIPAHOA, VERMILION & WEST FELICIANA PARISHES:		
SHEET METAL WORKERS	19.95	4.52

* SHEE0361A 07/01/2001

	Rates	Fringes
AVOYELLES, BIENVILLE, CALDWELL, CATAHOULA, CLAIBORNE, CONCORDIA, DE SOTO, EAST CARROLL, FRANKLIN, GRANT, JACKSON, LA SALLE, LINCOLN, MADISON, MOREHOUSE, NATCHITOCHEs, OUACHITA, RED RIVER, RICHLAND, SABINE, TENSAS, UNION, VERNON, WEBSTER, WEST CARROLL & WINN PARISHES:		
SHEET METAL WORKERS	21.27	5.45

TEAM0005A 10/04/1998

	Rates	Fringes
ACADIA, ASSUMPTION, EAST FELICIANA, EVANGELINE, IBERIA, IBERVILLE, POINTE COUPEE, ST. HELENA, ST. JAMES, ST. LANDRY, ST. MARY, TANGIPAHOA, VERMILION, WASHINGTON & WEST FELICIANA PARISHES:		

TRUCK DRIVERS:

Pickups	10.98
Fuel	11.35
Over 1 Ton, Up to, but not	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Including 3 Tons	11.23
3 Tons, Up to, but not Including 5 Tons	11.35
5 Tons & Over, Including, but not limited to Winch, Dempsey, Dumpster, Lowboy, Semi-Trailer, Euclid, Tournapull & Similar Equipment Used for Transporting Material	11.52
Larger Trucks (Carry Capacity of rear Axles 50,000 lbs. & Over Winch with "A" Frame when used for transporting material	11.65
	11.48

TEAM0270A 11/01/1998

	Rates	Fringes
LAFOURCHE, PLAQUEMINES & TERREBONNE PARISHES:		

TRUCK DRIVERS:

Up to 1 1/2 Tons	12.59
1 1/2 Tons up to, but not including 3 Tons	12.70
3 Tons up to, but not including 5 Tons	12.75
5 Tons & Over	13.01

TEAM0568A 11/01/1998

	Rates	Fringes
BIENVILLE, CLAIBORNE, DE SOTO, RED RIVER & WEBSTER PARISHES:		

TRUCK DRIVERS:

GROUP 1	9.87
GROUP 2	9.95
GROUP 3	10.20
GROUP 4	10.35
GROUP 5	10.50
GROUP 6	10.70
GROUP 7	11.05

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Pickup; Spotter & Dumper of Dirt, Gravel, Etc.

GROUP 2 - Stake Body; Flat Bed

GROUP 3 - Single Axle Dump & Water Truck; Transit Mix, Up to
& Including 3 yds.

GROUP 4 - Tandem Axle Dump, Batch & Water Truck over 3 tons;
Pickup with Trailer

GROUP 5 - Mississippi Wagon, Float, Tractor Trailer; Rubber
Tired Tractor & Wobble Wheels

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 6 - Euclid; Lowboy; Dempsey Dumpster; Koehring Dump;
5 Axle Truck; Transit Mix Over 3 yds.

GROUP 7 - Fork Lift

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the Branch
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION MD010042 07/06/2001 MD42

Date: July 6, 2001
 General Decision Number **MD010042**

Superseded General Decision No. MD000042

State: **Maryland**

Construction Type:
BUILDING

County(ies):
 HARFORD

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	06/01/2001
3	07/06/2001

COUNTY(ies):
 HARFORD

ASBE0024A 03/01/2001	Rates	Fringes
ASBESTOS WORKERS/HEAT AND FROST INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ASBE0024B 10/01/2000	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

BOIL0193A 10/01/1999	Rates	Fringes
BOILERMAKERS	24.17	11.96

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEV0007C 05/31/2001

	Rates	Fringes
ELEVATOR MECHANICS	26.245	7.195+a+b

- a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.
- b. VACATIONS: Employer contributes 8% of basic hourly rate for 5 years of service or more; 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

ENGI0037D 04/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS: Cranes	20.54	6.85+a

* ON WORK INVOLVING THE REMOVAL OR CLEANUP OF ASBESTOS, TOXIC WASTE OR OTHER HAZARDOUS MATERIALS, EMPLOYEES SHALL RECEIVE 10% MORE THAN THE GROUP 1 WAGE RATE.

PREMIUM PAY:

On long boom cranes, including jibs the operator shall receive the following additional pay:

- 130' to 169' - \$0.40 per hour
- 170' to 209' - \$0.60 per hour
- 210' to 249' - \$0.80 per hour
- 250' to 299' - \$1.00 per hour
- 300' and over - \$1.25 per hour

PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

PLUM0486D 04/01/2001

	Rates	Fringes
PIPEFITTERS/STEAMFITTERS (Including Installation of HVAC equipment)	26.23	8.16

TOOL AND MATERIAL HANDLERS

(Pipefitters/Steamfitters)
Includes knocking out sleeves;
Distribution of tools and materials;
Loading and unloading trucks;
Erection and dismantling of scaffolding;
General clean up; Core drilling of holes (no layout for same);
Running all errands, such as for coffee or water, pickup and delivery;
Power rigging will not be allowed.

8.00	.35
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* SFMD0669B 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	24.70	7.50

* SHEE0100J 07/01/2001

	Rates	Fringes
SHEET METAL WORKERS (Duct Work Only)	22.47	7.12

SUMD1026A 09/08/1993

	Rates	Fringes
BRICKLAYERS	15.88	1.00
CARPENTERS (Excluding Drywall Hanging and Metal Stud Installation)	13.16	2.50
CEMENT FINISHERS	11.63	1.84
DRYWALL FINISHERS	12.45	.78
DRYWALL HANGERS & METAL STUD INSTALLERS	12.50	.05
ELECTRICIANS	16.79	6.75
GLAZIERS	12.28	
IRONWORKERS, STRUCTURAL LABORERS:	12.67	3.19
Unskilled	8.46	1.33
Landscape	7.15	.24
Mason Tenders, Brick	9.77	
Pipelayers	9.25	.94
Asphalt Rakers	7.95	2.26
PAINTERS, BRUSH & ROLLER (Excluding Drywall Finishing)	12.47	
PLUMBERS (Excluding HVAC)	13.49	1.74
POWER EQUIPMENT OPERATORS:		
Backhoes	13.14	2.16
Bulldozers	13.41	
Loaders	12.87	1.73
Asphalt Paver	11.25	
Rollers	10.46	2.26
Scrapers	10.92	
Screed	9.50	2.94
ROOFERS	11.14	
SHEET METAL WORKERS (All Other Work)	11.72	5.55
TRUCK DRIVERS	9.28	1.08

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION MD010009 06/01/01 MD9

General Decision Number MD010009

Superseded General Decision No. MD000009

State: **Maryland**

Construction Type:

BUILDING

County(ies):

FREDERICK

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	05/04/2001
3	06/01/2001

COUNTY(ies):

FREDERICK

* ASBE0024A 03/01/2001

	Rates	Fringes
ASBESTOS WORKERS/HEAT AND FROST INSULATORS		
Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ELEC0024B 10/01/2000

	Rates	Fringes
ELECTRICIANS	24.45	8.74

* IRON0005B 06/01/2001

	Rates	Fringes
From the water's edge of point Look-Out, Maryland running in a straight line to the northeast City Limits and including Parole, Maryland; from there running in a straight line to the southern outskirts and excluding Laurel, Maryland; from there running in a straight line to the southern outskirts and excluding Frederick, Maryland; from there running in a straight line to the northwest City Limits and including Boonsboro, Maryland; from there running in a straight line to the southeast City Limits and excluding Charlestown, West Virginia; from there in a straight line to		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

the southeast City Limits and excluding Winchester, Virginia; from there in a straight line to the northwest City Limits and including Front Royal, Virginia; from there in a straight line to the Culpeper County Line and encompassing the County of Culpeper.

IRONWORKERS, STRUCTURAL and SHEETING	22.53	8.055
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IRON0016B 04/01/2001

	Rates	Fringes
From the water edge of Point Lookout, Maryland, from there running in a straight line to the Northeast City Limits and excluding Parole, Maryland, from there running in a straight line to the Southern outskirts and including Laurel, Maryland (Cherry Lane) from there running in a straight line to the Southern outskirts and including Frederick, Maryland, from there running in a straight line to the Northwest City Limits and excluding Boonesboro, Maryland, and from there in a straight line running to the direction of Waynesboro, Pennsylvania, from there in a straight line to Holtwood, Pennsylvania, from Holtwood to the Northeast Shore of Conowingo, from Conowingo to Port Deposit, from Port Deposit using the halfway point between Local #451 and Local #16. Off shore drilling or construction projects 100 miles from coastal line of Maryland.		

IRONWORKERS, STRUCTURAL AND REINFORCING	23.03	10.33
SHEETERS	23.28	10.33

IRON0201B 05/01/2001

	Rates	Fringes
From the water's edge of Point Look Out, Maryland, running in a straight line to the northeast City Limits and including Parole, Maryland; from there running in a straight line to the southern outskirts and excluding Laurel, Maryland; from there running in a straight line to the southern outskirts and excluding Frederick, Maryland; from there running in a straight line to the northwest City Limits and including Boonsboro, Maryland; from there running in a straight line to the southeast City Limits and excluding Charlestown, West Virginia; from there in a straight line to the southeast City Limits and excluding Winchester, Virginia; from there in a straight line to northwest City Limits and including Front Royal, Virginia; from there in a straight line to the Culpeper County Line and encompassing the County of Culpeper.		

IRONWORKERS, REINFORCING	21.70	8.40
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SUMD1042A 04/07/1999

	Rates	Fringes
BRICKLAYERS	14.74	.81
CARPENTERS (Including Drywall Hanging and Acoustical Ceiling Installation)	12.89	2.71

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASONS	15.12	3.06
FENCE ERECTORS	10.28	.85
GLAZIERS	13.60	.99
LABORERS:		
Unskilled	9.29	2.81
Mason Tenders, Brick	8.37	.81
PAINTERS:		
Brush and Roller	11.35	
Drywall Finishers	13.28	.80
PLASTERERS	13.44	.53
PLUMBERS	12.13	2.04
PIPEFITTERS (Including HVAC Pipe Work)	12.21	3.20
POWER EQUIPMENT OPERATORS:		
Backhoes	11.31	2.33
Bulldozers	13.00	1.21
Graders	11.00	.32
Loaders	15.25	
Rollers	12.00	1.68
ROOFERS	13.96	2.41
SHEET METAL WORKERS (Including HVAC Duct Work)	14.82	2.85
SPRINKLER FITTERS	12.90	1.15
TRUCK DRIVERS, DUMP	10.00	1.40

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
 position on a wage determination matter
- * a conformance (additional classification and rate)
 ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION MD010021 07/06/2001 MD21

Date: July 6, 2001

General Decision Number **MD010021**

Superseded General Decision No. MD000021

State: **Maryland**

Construction Type:

BUILDING

County(ies):

ANNE ARUNDEL

*EXCLUDING THE D.C. TRAINING SCHOOL

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	04/20/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):

ANNE ARUNDEL

ASBE0024A 03/01/2001

	Rates	Fringes
ASBESTOS WORKERS/HEAT AND FROST INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ASBE0024B 10/01/2000

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BOIL0193A 10/01/1999

	Rates	Fringes
BOILERMAKERS	24.17	11.96

ELEC0024B 10/01/2000

	Rates	Fringes
ELECTRICIANS	24.45	8.74

ELEV0007B 05/31/2001

	Rates	Fringes
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ELEVATOR MECHANICS:

(The portion of Anne Arundel County
North of Maryland State Route 450
between the Priest Bridge on the
Patuxent River, along Maryland State
Route 450 to the Bacon Ridge of the
South River)

26.245	7.195+a+b
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a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day,
Labor Day, Thanksgiving Day, and Christmas Day.

b. VACATIONS: Employer contributes 8% of basic hourly rate for 5
years of service or more; 6% of basic hourly rate
for 6 months to 5 years of service as vacation pay
credit.

ELEV0010C 09/10/2000

	Rates	Fringes
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ELEVATOR MECHANICS:

(Remainder of Anne Arundel
County)

25.205	7.195+a+b
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a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence
Day, Labor Day, Thanksgiving Day, Christmas
Day, and the Friday after Thanksgiving.

b. VACATIONS: Employer contributes 8% of basic hourly
rate for 5 years or more of service; 6% of
basic hourly rate for 6 months to 5 years
of service as vacation pay credit.

IRON0016I 04/01/2001

	Rates	Fringes
GLAZIERS	23.03	10.33
IRONWORKERS, STRUCTURAL	23.03	10.33

PLUM0486B 04/01/2001

	Rates	Fringes
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PLUMBERS & STEAMFITTERS
(Including HVAC Piping and
Installation of HVAC Units
and Equipment)

26.23	8.16
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* SFMD0669B 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	24.70	7.50

SUMD1022A 03/01/1993

	Rates	Fringes
BRICKLAYERS	14.68	
CARPENTERS (Excluding Drywall Hanging and Metal Stud Installation)	14.37	3.32
CEMENT FINISHERS	13.83	
DRYWALL FINISHERS	13.02	3.94
DRYWALL HANGERS (Including Metal Stud Installation)	11.78	2.06
LABORERS:		
Unskilled	8.35	
Mason Tenders, Brick	8.34	
Mason Tenders, Cement	9.64	
Pipelayers	10.45	2.08
PAINTERS, BRUSH AND ROLLER (Excluding Drywall Finishing)	10.16	
PLUMBERS (Excluding HVAC Work)	16.23	4.16
POWER EQUIPMENT OPERATORS:		
Backhoes	13.01	2.29
Loaders	12.49	
ROOFERS	12.16	2.85
SHEET METAL WORKERS:		
HVAC Duct Work	13.38	2.91
All Other Work	13.46	4.43
TILE AND TERRAZZO FINISHERS	14.78	2.81
TILE AND TERRAZZO SETTERS	15.22	2.94

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

position on a wage determination matter
* a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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Administrative Review Board
U. S. Department of Labor
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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION MD010056 07/06/2001 MD56

Date: July 6, 2001
 General Decision Number **MD010056**

Superseded General Decision No. MD000056

State: **Maryland**

Construction Type:
BUILDING

County(ies):
 MONTGOMERY

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	05/04/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):
 MONTGOMERY

ASBE0024A 03/01/2001	Rates	Fringes
ASBESTOS WORKERS/HEAT AND FROST INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ASBE0024B 10/01/2000	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

ELEC0026C 12/06/1999	Rates	Fringes
COMMUNICATION TECHNICIANS	19.00	3.49

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SCOPE OF WORK:

Includes low voltage construction, installation, maintenance and removal of teledata facilities (voice, data and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, railroad communications, micro waves, V SAT, bypass, CATV, WAN (Wide area networks), LAN (Local area networks) and ISDN (Integrated systems digital network).

WORK EXCLUDED:

The installation of computer systems in industrial applications such as assembly lines, robotics and computer controller manufacturing systems.
 The installation of conduit and/or raceways shall be installed by Inside Wiremen. On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway or conduit not greater than 10 feet.

Fire alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit.
 All HVAC control work.

ELEC0026R	02/05/2001		
		Rates	Fringes
LIGHTNING PROTECTION TECHNICIANS		18.06	3.50+3%

ELEC0026S	11/06/2000		
		Rates	Fringes
ELECTRICIANS (Excluding Communication Low Voltage Wiring and Lightning Protection Wiring)		26.92	6.10 + 3%

ENGI0077Q	05/01/2001		
		Rates	Fringes
POWER EQUIPMENT OPERATORS			
Cranes, 35 ton and above		22.29	4.77+a
Boom Trucks		21.12	4.77+a

a. PAID HOLIDAYS: New Year's Day, Inaugural Day, Decoration Day, Independence Day, Labor Day, Martin Luther King's Birthday, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

IRON0201A	05/01/2001		
		Rates	Fringes
IRONWORKERS:			
Reinforcing		21.70	8.40

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAIN0051D 06/16/2000

	Rates	Fringes
GLAZIERS		
Contracts over \$2,000,000	21.15	5.64
Contracts \$2,000,000 and under	19.95	5.64

PAIN0051L 06/16/2000

	Rates	Fringes
PAINTERS:		
Brush, Roller, Spray	20.23	5.47

PLUM0005E 09/01/2000

	Rates	Fringes
PLUMBERS:		
Apartment Buildings over 4 stories (except hotels), schools, colleges, and speculative office buildings, strip shopping centers, churches, water coolers, room air conditioning units, appliances, packaged ice machines, and light commercial refrigeration and/or air conditioning systems serving a single business in a single story building and not to exceed 5 h.p. or tons, self-contained package unit up to and including 5 h.p. or tons.	17.04	5.085
All other work	25.80	8.035

PLUM0602F 08/01/2000

	Rates	Fringes
STEAMFITTERS, REFRIGERATION AND AIR CONDITIONING MECHANICS (Including HVAC Pipe Work):		
Light commercial refrigeration and/or air conditioning systems serving a single business; the air conditioning systems shall not total more than 15 tons and the refrigeration system shall not total more than 7 1/2 tons; apartment buildings over 4 stories with individual units not to exceed 5 tons (excluding split units)	13.75	8.105
All other work	25.71	8.105

* ROOF0030X 05/01/2001

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
ROOFERS	20.85	5.46

* SFMD0669B 04/01/2001		
SPRINKLER FITTERS	24.70	7.50

* SHEE0100B 07/01/2001		
SHEET METAL WORKERS (Including HVAC Duct Work)	26.18	7.41

SUMD1043A 05/12/2000		
BRICKLAYERS	19.39	3.30
CARPENTERS	15.51	1.93
DRYWALL FINISHERS	14.00	0.58
IRONWORKERS, STRUCTURAL LABORERS:	15.82	3.85
Unskilled	10.35	1.13
Landscape	9.23	
Mason Tenders, Brick Rakers	10.97	.77
	11.06	0.25
POWER EQUIPMENT OPERATORS:		
Backhoes	16.07	5.26
Excavators	14.50	
Loaders	14.68	4.29
Rollers	13.85	1.75
Screeds	12.22	1.14
TILE SETTERS	17.76	3.00
TILE FINISHERS	12.09	2.32

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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- * a conformance (additional classification and rate) ruling

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION MI010082 06/15/01 MI82

General Decision Number MI010082

Superseded General Decision No. MI000082

State: **Michigan**

Construction Type:

BUILDING

HEAVY

County(ies):

MACOMB

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories); **HEAVY CONSTRUCTION PROJECTS** (does not include airport or bridge construction projects, or sewer or water line work if it is incidental to a highway construction project)

Modification Number	Publication Date
0	03/02/2001
1	03/30/2001
2	04/27/2001
3	05/11/2001
4	06/08/2001
5	06/15/2001

COUNTY(ies):

MACOMB

ASBE0025C 06/01/2000

	Rates	Fringes
INSULATOR/ASBESTOS WORKER		
Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems	24.88	12.17

FOOTNOTE:

Work requiring a spray coating in the application: Five percent (5%) per hour additional.

BOIL0169A 07/01/2000

	Rates	Fringes
BOILERMAKER	25.02	8% + 11.392

BRMI0001C 06/01/2000

	Rates	Fringes
CEMENT MASONS:		
Cement mason	20.92	5.57
Grinding and chipping hammers on walls and ceilings	21.15	5.59

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Swing stage 15' above or
below grade 21.26 5.60

BRMI0001I 06/01/2000

	Rates	Fringes
BRICKLAYER	28.68	8.11

FOOTNOTES:

Using acid material in laying bricks: \$2.00 additional per hour.
Working on two point swing stage: \$2.00 additional per hour.
Sandblasting: \$2.00 additional per hour.
Laying carbon material: \$2.00 additional per hour.
Gunite work: \$2.00 additional per hour.
Hot work: \$3.00 additional per hour.

BRMI0032A 06/01/2000

	Rates	Fringes
MARBLE SETTER	22.78	10.52
TERRAZZO SETTER	22.21	10.52
TILE SETTER	22.21	10.52
MARBLE FINISHER	17.97	11.02
TERRAZZO FINISHER	18.04	11.02
TILE FINISHER	17.99	11.02

FOOTNOTES:

Work on scaffolding over 15 ft.: \$1.25 per hour additional.
Swing stage work: \$1.50 per hour additional.
Terrazzo grinding: \$0.50 per hour above the terrazzo finisher rate.
Terrazzo work grinding vertical work and stairs: \$1.50 per hour above the terrazzo finisher rate.

CARP0687D 06/01/1999

	Rates	Fringes
CARPENTER	23.313	11.331
PILEDRIVER	23.313	11.181
DIVER	30.639	13.824

FOOTNOTES:

Piledrivers:
Loftsperson or sticker: \$0.55 per hour additional.
Loftsperson or sticker on heights over 150 feet: \$0.80 per hour additional.
Welder: \$0.55 per hour additional.

CARP1045C 06/01/1999

	Rates	Fringes
LATHER	23.38	11.35

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARP1045G 06/01/1999

	Rates	Fringes
SOFT FLOOR LAYER	21.45	9.54

CARP1102C 06/01/2000

	Rates	Fringes
MILLWRIGHT	29.42	11.25

ELEC0017G 06/01/1998

	Rates	Fringes
ALL COMMERCIAL WORK EXCEPT LINE CONSTRUCTION:		
Commercial technician	22.81	18.5% + 2.80
LINE CONSTRUCTION:		
Line technician	29.22	18.5% + 2.80
Cable splicer; Line technician when helio-arc welding	30.42	18.5% + 2.80
Combination line equipment operator and ground person	21.68	18.5% + 2.80
Combination driver/ground person	20.48	18.5% + 2.80
Ground person	18.90	18.5% + 2.80

ELEC0058E 03/01/2001

	Rates	Fringes
ELECTRICIANS:		
Work on sound and communications/limited-energy systems (including inter-communication public address, paging, music, security systems, nurse call systems, telecommunications (voice and data), fiber optic cabling systems, sound systems, broadband systems, computer network systems, CCTV systems, fire detection/signaling systems, and temperature control systems)	25.97	3% + 4.77
All other work	27.46	3% + 8.95

FOOTNOTES:

All other work:

Work on a suspended swinging scaffold, bosun chair or swinging crane inside or outside of buildings at elevations in excess of 60 ft. above the surface immediately below (does not include work performed from catwalks with guardrails on swinging cranes): 15% per hour additional.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Work on stacks, radio, television and water towers at elevations in excess of 60 ft. above the surface immediately below (does not include work performed from catwalks with guardrails on swinging cranes): 15% per hour additional.

Work under compressed air in tunnels or shafts below the ground level: 15% per hour additional.

Work in an area where injurious gases or fumes are present and when instructed to wear a gas mask (does not apply to the use of dust respirators): 15% per hour additional, while working in that area and being required to wear a gas mask.

ELEV0036C	07/01/2000		
		Rates	Fringes
ELEVATOR MECHANIC		29.185	6.935

FOOTNOTE:

Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ENGI0324H	10/01/2000		
		Rates	Fringes
SEWER RELINING:			
POWER EQUIPMENT OPERATORS:			
GROUP 1		22.71	7.96
GROUP 2		21.32	7.96

SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system, including remote in-ground cutter and other equipment used in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation systems, water jettors and vacuum and mechanical debris removal systems

ENGI0324K	06/01/2000		
		Rates	Fringes
POWER EQUIPMENT OPERATORS			
STEEL ERECTION:			
GROUP 1		34.87	9.82
GROUP 2		35.87	9.82
GROUP 3		33.37	9.82
GROUP 4		34.37	9.82
GROUP 5		31.87	9.82
GROUP 6		32.87	9.82
GROUP 7		31.60	9.82
GROUP 8		32.60	9.82
GROUP 9		31.15	9.82

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 10	32.15	9.82
GROUP 11	30.42	9.82
GROUP 12	31.42	9.82
GROUP 13	30.06	9.82
GROUP 14	31.06	9.82
GROUP 15	29.42	9.82
GROUP 16	22.61	9.82
GROUP 17	21.20	9.82

FOOTNOTE:

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib 400' or longer

GROUP 2: Engineer when operating combination of boom and jib 400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib 300' or longer

GROUP 4: Engineer when operating combination of boom and jib 300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib 220' or longer

GROUP 6: Engineer when operating combination of boom and jib 220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib 140' or longer

GROUP 8: Engineer when operating combination of boom and jib 140' or longer on a crane that requires an oiler

GROUP 9: Tower crane and derrick operator (where operator's work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane and derrick operator (where operator's work station is 50 ft. or more above first sub-level) on a crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib 120' or longer

GROUP 12: Engineer when operating combination of boom and jib 120' or longer on a crane that requires an oiler

GROUP 13: Crane operator and job mechanic

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 16: Compressor or welder operator

GROUP 17: Oiler

 ENGI0324T 09/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
UNDERGROUND (includes sewer):		
GROUP 1	25.56	9.82
GROUP 2	22.23	9.82
GROUP 3	21.50	9.82
GROUP 4	20.93	9.82

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel-powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Sweeper (Wayne type and similar equipment); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller)

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more - less than 600 cfm); Boom truck (non-swinging, non-powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum - 1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more - 4-in. up to 6-in. discharge - gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more - 300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Fire person; Hydraulic pipe pushing machine; Mulching equipment; Oiler; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); End dump operator

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0324U 06/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	31.91	11.15
GROUP 2	30.91	11.15
GROUP 3	29.91	11.15
GROUP 4	29.61	11.15
GROUP 5	28.79	11.15
GROUP 6	27.93	11.15
GROUP 7	26.96	11.15
GROUP 8	25.25	11.15
GROUP 9	18.94	11.15
GROUP 10	17.91	11.15

FOOTNOTES:

Tower cranes: to be paid the crane operator rate determined by the combined length of the mast and the boom. If the worker must climb 50 ft. or more to the work station, \$.25 per hour additional.

Derrick and cranes where the operator must climb 50 ft. or more to the work station, \$.25 per hour additional to the applicable crane operator rate.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane with boom and jib or leads 400' or longer

GROUP 2: Crane with boom and jib or leads 300' or longer

GROUP 3: Crane with boom and jib or leads 220' or longer

GROUP 4: Crane with boom and jib or leads 140' or longer

GROUP 5: Crane with boom and jib or leads 120' or longer

GROUP 6: Regular crane operator, job mechanic, and concrete pump with boom operator

GROUP 7: Regular engineer

GROUP 8: Engineer when operating forklift, lull, extend-a-boom forklift

GROUP 9: Engineer when operating compressor or welding machine

GROUP 10: Fire tender or oiler

ENGI0325C 10/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
HAZARDOUS WASTE REMOVAL:		
LEVEL A:		
GROUP 1	28.08	9.80
GROUP 2	24.75	9.80
Engineer when operating crane		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

with boom and jib or leads 220' or longer	31.03	9.80
Engineer when operating crane with boom and jib or leads 140' or longer	30.73	9.80
Regular crane operator, mechanic, dragline operator, boom truck operator and concrete pump with boom operator	29.05	9.80

LEVELS B AND C:

GROUP 1	27.13	9.80
GROUP 2	23.80	9.80
Engineer when operating crane with boom and jib or leads 220' or longer	30.08	9.80
Engineer when operating crane with boom and jib or leads 140' or longer	29.78	9.80
Regular crane operator, mechanic, dragline operator, boom truck operator and concrete pump with boom operator	28.10	9.80

LEVEL D:

GROUP 1	25.83	9.80
GROUP 2	22.50	9.80
Engineer when operating crane with boom and jib or leads 220' or longer	28.78	9.80
Engineer when operating crane with boom and jib or leads 140' or longer	28.48	9.80
Regular crane operator, mechanic, dragline operator, boom truck operator and concrete pump with boom operator	26.80	9.80

LEVEL D WHEN CAPPING LANDFILL:

GROUP 1	25.58	9.80
GROUP 2	22.25	9.80
Engineer when operating crane with boom and jib or leads 220' or longer	28.53	9.80
Engineer when operating crane with boom and jib or leads 140' or longer	28.23	9.80
Regular crane operator, mechanic, dragline operator, boom truck operator and concrete pump with boom operator	26.55	9.80

HAZARDOUS WASTE REMOVAL CLASSIFICATIONS

GROUP 1: Backhoe, batch plant operator, clamshell, concrete breaker when attached to hoe, concrete cleaning decontamination machine operator, concrete pump, concrete paver, crusher, dozer,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

elevating grader, endloader, farm tractor (90 h.p. and higher), gradall, grader, heavy equipment robotics operator, loader, pug mill, pumpcrete machines, pump trucks, roller, scraper (self-propelled or tractor drawn), side boom tractor, slip form paver, slop paver, trencher, ultra high pressure waterjet cutting tool system operator, vactors, vacuum blasting machine operator, vertical lifting hoist, vibrating compaction equipment (self-propelled), and well drilling rig

GROUP 2: Air compressor, concrete breaker when not attached to hoe, elevator, end dumps, equipment decontamination operator, farm tractor (less than 90 h.p.), forklift, generator, heater, mulcher, pigs (portable reagent storage tanks), power screens, pumps (water), stationary compressed air plant, sweeper, and welding machine

 * ENGI0325P 05/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GAS DISTRIBUTION AND DUCT INSTALLATION WORK:		
GROUP 1	22.50	11.15
GROUP 2	22.37	11.15
GROUP 3	21.24	11.15
GROUP 4	20.67	11.15

SCOPE OF WORK:

The construction, installation, treating and reconditioning of pipelines transporting gas vapors within cities, towns, subdivisions, suburban areas, or within private property boundaries, up to and including private meter settings of private industrial, governmental or other premises, more commonly referred to as "Distribution Work," starting from the first metering station, connection, similar or related facility, of the main or cross country pipeline and including duct installation.

POWER EQUIPMENT - GAS DISTRIBUTION CLASSIFICATIONS

GROUP 1: Backhoe, crane, grader, mechanic, dozer (D-6 equivalent or larger), side boom (D-4 equivalent or larger), trencher, endloader (2 yd. capacity or greater)

GROUP 2: Dozer (less than D-6 equivalent), endloader (under 2 yd. capacity), side boom (under D-4 capacity), backfiller, pumps (1 or 2 of 6-inch discharge or greater), boom truck (with powered boom), tractor (wheel type other than backhoe or front endloader)

GROUP 3: Tamper (self-propelled), boom truck (with non-powered boom), concrete saw (20 hp or larger), pumps (2 to 4 under 6-inch discharge), compressor (2 or more or when one is used continuously into the second day)

GROUP 4: Oiler, hydraulic pipe pushing machine, grease person

 IRON0025Q 04/01/2000

	Rates	Fringes
ATTACHMENT J-11	Page 436	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRONWORKERS - PRE-ENGINEERED METAL

BUILDING ERECTOR	18.50	12.29
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IRON0025Y 06/01/2000

	Rates	Fringes
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IRONWORKERS:

Machinery mover, rigger and machinery erector	21.07	14.87
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IRON0026M 06/01/2000

	Rates	Fringes
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IRONWORKERS:

Reinforcing	22.84	15.07
Wire mesh	19.21	13.80

IRON0026R 06/01/2000

	Rates	Fringes
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IRONWORKERS:

Ornamental, structural, precast erector	24.29	16.63
Fence erector	17.57	12.03

LABO0005T 10/01/2000

	Rates	Fringes
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LABORERS:

HAZARDOUS WASTE ABATEMENT:

Work performed inside the
building and up to and
including 5 ft. outside
the building:

Work performed in conjunction with site preparation not requiring the use of personal protective equipment; Also, Level D	21.30	7.66
Levels A, B or C	22.30	7.66

Work performed over 5 ft.
outside the building:

Work performed in conjunction with site preparation not requiring the use of personal protective equipment; Also, Level D	20.02	7.01
Levels A, B or C	21.02	7.01

LABO02590 09/01/2000

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
LABORERS:		
TUNNEL, SHAFT & CAISSON:		
GROUP 1	19.57	7.22
GROUP 2	19.68	7.22
GROUP 3	19.74	7.22
GROUP 4	19.92	7.22
GROUP 5	20.18	7.22
GROUP 6	20.50	7.22
GROUP 7	13.78	7.22

SCOPE OF WORK:

Tunnel, shaft and caisson work of every type and description and all operations incidental thereto, including, but not limited to, shafts and tunnels for sewers, water, subways, transportation, diversion, sewerage, caverns, shelters, aquafers, reservoirs, missile silos and steel sheeting for underground construction.

LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog house tender, testing (on gas)

GROUP 2: Manhole, headwall, catch basin builder, bricklayer tender, mortar, material mixer, fence erector and guard rail builder

GROUP 3: Air tool operator (jackhammer, bush hammer and grinder), first bottom, second bottom, cage tender, car pusher, carrier, concrete, concrete form, concrete repair, cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LABO0260E 08/01/2000

	Rates	Fringes
ASBESTOS LABORERS		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Includes removing and disposing of all insulation materials from walls, ceilings, floors, columns, and all other non-mechanical surfaces; and removal of insulating materials from mechanical systems that are to be demolished; loading/unloading of bagged and tagged materials at the disposal site (work outside of buildings only) (includes lead paint abatement clean-up)

16.78 5.72

LABO0334D 09/01/2000

	Rates	Fringes
LABORERS:		
OPEN CUT:		
GROUP 1	19.42	7.22
GROUP 2	19.53	7.22
GROUP 3	19.58	7.22
GROUP 4	19.66	7.22
GROUP 5	19.72	7.22
GROUP 6	17.17	7.22
GROUP 7	13.79	7.22

SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. Open cut construction work shall also be construed to mean waterfront work, piers, docks, seawalls, breakwalls, marinas and all incidental work.

Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

LABORER CLASSIFICATIONS

GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, guard rail builder, headwall, seawall, breakwall, dock builder and fence erector

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodder, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate or other conduits)

GROUP 6: Grouting person, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LABO0334F	07/01/2000		
		Rates	Fringes
LANDSCAPE LABORERS:			
GROUP 1		15.08	3.05
GROUP 2		11.61	3.05

LANDSCAPE LABORER CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator and lawn sprinkler installer

GROUP 2: Landscape laborer: small power tool operator, material mover and truck driver

LABO0334I	06/01/2000		
		Rates	Fringes
LABORERS:			
GROUP 1		21.30	7.66
GROUP 2		21.56	7.66
GROUP 3		22.05	7.66
GROUP 4		15.85	7.66
GROUP 5		21.80	7.66
GROUP 6		22.55	7.66

LABORER CLASSIFICATIONS

GROUP 1: Construction laborer, mason tender, carpenter tender, drywall handler, cement finisher tender and concrete chute and concrete bucket handler

GROUP 2: Signal person (on sewer and caisson work), air, electric or gasoline tool operator (including concrete vibrator

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

operator, acetylene torch and air hammer operator); scaffold builder, caisson worker

GROUP 3: Lansing burner, blaster and powder person; air, electric or gasoline tool operator (blast furnace work or battery work)

GROUP 4: Cleaner/sweeper laborer

GROUP 5: Burning bar and oxy-acetylene gun

GROUP 6: Expediter person, top person and/or bottom person (blast furnace work or battery work)

 PAIN0022C 06/01/2000

	Rates	Fringes
DRYWALL FINISHER (does not include Level 5 work (covering the whole board))	22.23	9.20
PAINTER	21.89	9.25

FOOTNOTES:

Drywall finisher:
 Work spraying texture: \$0.50 per hour additional.

Painter:

For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment.

For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional.

For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour additional.

For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional.

For all swing stage work - window jacks and window belts - exterior and interior, \$0.50 per hour additional.

For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional.

For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional.

For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

 PAIN0357E 06/01/1999

	Rates	Fringes
GLAZIER	21.85	8.51

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAID HOLIDAYS: New Year's Day, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day; provided that the employee has worked the last full regular scheduled work day prior to the holiday, and the first full regular scheduled work day following the holiday, provided the employee is physically able to work.

PLAS0067A 06/01/2000		
	Rates	Fringes
SOUTH OF THIRTEEN-MILE ROAD:		
PLASTERER	26.44	7.68

PLUM0098F 06/01/2000		
	Rates	Fringes
PLUMBER:		
Plumbing work installed in the following structures only: strip stores, existing supermarkets (tenant improvement), restaurants (except those associated with building structures using the "large rate"), convenience stores, industrial park buildings (permitted plumbing), 1-story retail or office buildings up to 25,000 sq. ft., tenant work up to 25,000 sq. ft. per tenant, and medical or dental suites not owned or leased by a major hospital corporation	22.20	8.85
All other work	26.83	10.88

PLUM0190F 05/01/1999		
	Rates	Fringes
GAS DISTRIBUTION PIPELINE:		
Welding in conjunction with gas distribution pipeline work	24.10	7.77
All other work	16.54	5.62

PLUM0636E 06/01/1999		
	Rates	Fringes
PIPEFITTER	29.41	9.85

* ROOF0149A 06/01/2001		
	Rates	Fringes
ROOFERS:		
Roofer	24.46	12.65

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Slater	25.61	12.65
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SFMI0704A 01/01/2001		
	Rates	Fringes
SPRINKLER FITTER	29.93	11.34

PAID HOLIDAYS:
 Memorial Day and Labor Day.

SHEE0080D 06/01/2000		
	Rates	Fringes
SHEET METAL WORKER:		
Work on multiple family housing units over four stories where each individual family apartment is individually conditioned by a separate and independent unit or system; Also, work involving the installation only of individual jobs consisting of 10 tons of air conditioning and/or 200,000 B.T.U.'s of heating at any one job site, and the architectural sheet metal work on such projects)	15.91	5.09
Siding and decking	19.57	3% + 7.13
All other work	25.45	15.79

TEAM0247A 06/01/1999		
	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	21.185	a
GROUP 2	21.335	a
GROUP 3	21.435	a

PAID HOLIDAYS:
 New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of the above holidays fall on a Sunday, the following Monday shall be considered the holiday and, if work is performed, the rate shall be double time.

FOOTNOTE:
 a. \$132.70 per week, plus \$25.60 per day, plus the following vacation pay:
 Drivers who have been in the employ of their company for 3 years or less: \$0.60 per hour.
 Drivers who have been in the employ of their company for 4 through 10 years: \$1.00 per hour.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Drivers who have been in the employ of their company for 11 through 15 years: \$1.45 per hour.

Drivers who have been in the employ of their company for 16 years and longer: \$1.85 per hour.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks except semi trucks or tractor trailers, pole trailers, lowboys, straddle carriers, double bottom and special load permit vehicles

GROUP 2: Truck driver on semi trucks or tractor trailers except pole trailer driver, lowboy driver, straddle carriers, double bottom and special load permit vehicles

GROUP 3: Pole trailer driver, lowboy driver, straddle carriers double bottom driver, special permit load driver & fuel truck driver

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION MO010005 03/09/01 MO5

General Decision Number MO010005

Superseded General Decision No. MO000005

State: **Missouri**

Construction Type:

BUILDING

County(ies):

PULASKI

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001

COUNTY(ies):

PULASKI

Modification Number	Publication Date	Rates	Fringes
BRMO0015A	03/01/2001		
BRICKLAYERS		21.10	5.25

Modification Number	Publication Date	Rates	Fringes
ENGI0513A	05/01/2000		
POWER EQUIPMENT OPERATORS:			
Backhoes		21.27	10.79
Cranes		21.27	10.70

HOURLY PREMIUMS:

Backhoe Hydraulic, 2 cu. yds. or under without oiler	\$2.00
Certified Crane Operator	\$1.50
Crane Climbing (such as Linden); Crane, Pile Driving and Extracting; Crane with boom (including jib) over 100' from pin to pin add \$0.01 per foot to maximum of \$4.00;	
Crane, using Rocket Socket Tool	\$0.50

Modification Number	Publication Date	Rates	Fringes
PAIN1265B	07/01/2000		
PAINTERS (Including Drywall Finishing):			
Brush & Roller		16.91	7.01
Drywall Finisher/Taper		17.41	7.01
Spray		18.16	7.01
Lead Abatement		19.16	7.01

Modification Number	Publication Date	Rates	Fringes
SUMO1032A	10/18/1999		
CARPENTERS (Including Drywall Hanging)		19.24	3.82

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASONS	15.28	1.95
ELECTRICIANS	19.04	5.88
IRONWORKERS, STRUCTURAL	16.87	8.42
LABORERS, UNSKILLED	13.67	2.75
PIPEFITTERS (Including HVAC Piping)	24.25	10.28
PLUMBERS (Excluding HVAC Pipe Work)	19.03	5.50
POWER EQUIPMENT OPERATORS: Mechanics	19.12	8.30
ROOFERS	14.74	3.14
SHEET METAL WORKERS (Including HVAC Duct Work)	18.23	4.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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WAGE DETERMINATION APPEALS PROCESS

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With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

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U.S. Department of Labor
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Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION MO010002 07/06/2001 MO2

Date: July 6, 2001
 General Decision Number **MO010002**

Superseded General Decision No. MO000002

State: **Missouri**

Construction Type:
BUILDING

County(ies):
 CASS JOHNSON RAY
 CLAY LAFAYETTE
 JACKSON PLATTE

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001
2	05/04/2001
3	05/11/2001
4	06/01/2001
5	07/06/2001

COUNTY(ies):
 CASS JOHNSON RAY
 CLAY LAFAYETTE
 JACKSON PLATTE

ASBE0027B 10/01/2000		
	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	25.04	11.18

BOIL0083F 09/01/1999		
	Rates	Fringes
BOILERMAKERS	22.58	10.11

BRMO0003A 12/01/1998		
	Rates	Fringes
MARBLE MASONS, TERRAZZO WORKERS AND TILE LAYERS	22.85	3.95

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BRMO0003B	06/01/2000		
		Rates	Fringes
TILE FINISHERS		18.10	2.20

BRMO0015B	04/01/2001		
		Rates	Fringes
BRICKLAYERS		22.95	9.35

CARP0007D	04/01/1999		
		Rates	Fringes
CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES			
CARPENTERS, LATHERS, MILLWRIGHTS and PILEDRIVERS		22.95	5.95

CARP0007H	04/01/1999		
		Rates	Fringes
JOHNSON AND LAFAYETTE COUNTIES:			
CARPENTERS & LATHERS		20.78	5.95
MILLWRIGHTS & PILEDRIVERS		22.95	5.95

ELEC0124B	09/04/2000		
		Rates	Fringes
ELECTRICIANS (Including Low Voltage Installation Work)		27.01	11.30

ELEV0012A	07/03/2000		
		Rates	Fringes
ELEVATOR MECHANICS		26.505	6.935+a

<p>a. VACATION: Employer contributes 8% of basic hourly rate to vacation pay credit for employee who has worked in business more than 5 years and 6% for 6 months to 5 years as Vacation Pay Credit.</p> <p>PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day and Christmas Day.</p>			

ENGI0101R	04/01/1999		
		Rates	Fringes
POWER EQUIPMENT OPERATORS:			
GROUP 1		21.81	7.15
GROUP 2		21.00	7.15
GROUP 3:			
(a)		16.25	7.15
(b)		17.05	7.15
(c)		19.41	7.15
(d)		19.66	7.15

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GROUP 4	23.66	7.15
GROUP 5	23.16	7.15

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Cranes 150 ft. or less of Boom; Overhead Cranes; Hydraulic Cranes; Cherry Picker; Pile Drivers; Derrick and Derrick Cars (Power Operated); Clamshells; Concrete Mixer Paver; Grade-all-similar type; Hoist Operator; (Drum and Cable type)

GROUP 2: Asphalt Paver and Spreader; Asphalt Plant Mixer Operators; Asphalt Plant Operator; Back Hoe (all types); Barber-Green loader (similar type); Blade-power (all types); Boats-Power; Bobcat or Skid-Loader; Boring Machine; Brooms-Power operated (all types); Chip Spreader (Front man); Concrete Pump (with tower, \$0.50 per hour additional); Concrete Saws, Self-Propelled; Curb Finishing Machine, Ditching Machine; Dozers; Finishing Machine; Greaser; Hoist Operator (Personnel or Material Hoist); Hydra Hammer (all types); Loaders (all types); Locomotives (all types); Mechanic and Welder; Mucking Machine; Pumps-Material (all types); Rollers (all types); Self-propelled Rotary Drill; Shovel, Power; Side Boom; Testhole Machine;

GROUP 3:

- (a) Oilers
- (b) Oiler driver; Elevator Operator (Automatic or Push Button)
- (c) Fork lift-masonry
- (d) A-frame trucks; fork lifts-all types (except masonry); mixers (with side loaders); pumps (with well points), dewatering systems, test or pressure pumps; tractors (except when hauling material) less than 50 h.p.

GROUP 4: Master Mechanic

GROUP 5: Crane (Tower or Climbing); Other cranes with over 150 ft. of boom.

HOURLY PREMIUMS:

Clamshells, 100 ft. of boom or over (excluding jib)	(\$0.25)
Draglines, 100 ft. of boom or over	(\$0.25)
Hoists, each additional drum over 1 drum	(\$0.25)
Pile Drivers, 100 ft. of boom or over (excluding jib)	(\$0.25)

IRON0010R 04/01/2001		
	Rates	Fringes
IRONWORKERS	22.70	11.63

LABO0264A 04/01/2001		
	Rates	Fringes
CASS, CLAY, JACKSON, and PLATTE COUNTIES		

LABORERS:

GROUP 1	20.70	5.30
GROUP 2	21.10	5.30
GROUP 3	21.50	5.30

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LAFAYETTE and RAY COUNTIES

LABORERS:

GROUP 1	19.70	5.30
GROUP 2	20.10	5.30
GROUP 3	20.50	5.30

LABORERS CLASSIFICATIONS

GROUP 1 : General Laborer; Wire Mesh Handlers or Setters; Carpenter Tender; Track Persons; Signal Person; Salamander Tenders; Landscape Persons; Sod Layers; Wreckers (For Alterations or Entire Projects); Plumber Laborers (Conduit Pipe, Sewer Work, Drain Tile and Duct Lines, Digging and Back Filling); Power Tool Operators; Pier Hole Diggers (Over 10 feet); Jackhammer and Chipping Hammer Operators; Chain Saw Operators; Concrete Saw Operators; Brsh Feeders or Pulverizers; Reinforcing Steel Handlers; Air Tamp Operators; Ditch Witch Operators; Swinging Scaffolds; Georgia Buggies Self Propelled; Fork Lift; Hose Person; Insulation Person.

GROUP 2: Vibrator Operator; Fork Lift (Masonry); Brick Tender; Plasterer Tender; Stone Mason Tender (includes all Hod Carrier classification previously shown as Mortar person and Scaffolding)

GROUP 3: Cutting Torch or Burner Person Barco; Jackson or Similar Tamp Operators; Asphalt Rakers; Power Person; Mastic Hot Kettle Person; Sandblasting and Gunite Nozzle Person; Wagon and Churn Drill Operators; Removal of Hazardous Waste and/or Asbestos (Except from Mechanical Systems that are not going to be scrapped)

LABO0663A 04/01/1999

	Rates	Fringes
JOHNSON COUNTY		
LABORERS		
GROUP 1	14.23	5.05
GROUP 2	14.73	5.05
GROUP 3	15.23	5.05

LABORERS CLASSIFICATIONS

GROUP 1: General laborers; carpenter tenders; track men; wreckers; reinforcing rod carriers; signal men and all other general laborers; plumber laborers, sewer work, water lines, conduit pipe, drain tile and duct lines; batter board man on pipe and ditch work and vibrator man.

GROUP 2: Air tool operators, pier hole men working below ground; jack hammer; chipping hammer operators; material batch hopper man; scale man; spreader or screed man on asphalt machine; chain or concrete saw; brush feeders on pulverizers; swinging scaffold; cement handlers (bulk or sack).

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GROUP 3: Plaster tenders; hod carriers; brick tenders; stone mason tenders; cutting torch and burner men; asphalt rakers; Barco tamper; Jackson or any similar tamps; power buggy operator; powder man; mastic kettleman; sandblasting and gunnite nozzlemen; head pipe layer on sewer work; men working in tunnels; head form setters and string line men; hot tar applicator; asbestos abatement worker.

PAIN0003A 04/01/2000		
	Rates	Fringes
PAINTERS:		
Brush and Roller, Taper	22.10	6.01
Bazooka, Paperhangers	22.60	6.01
Storage Bin & Tanks (roller or brush); elevated tanks (roller or brush); stageman; beltman; bridgeman; steelman; sand blast (base); elevator shaft	22.85	6.01
Lead Abatement, Sprayman	23.10	6.01
Sandblast (bridge, stage, erected steel, storage bin & tank)	23.60	6.01
Sprayman (storage bin & tank, elevated tanks); Stageman (spray); Bridgeman (spray); Steelman (spray)	23.85	6.01
Steeplejack (other than elevated tanks)	26.79	6.01
Steeplejack - spray or sandblast (other than elevated tanks)	27.79	6.01

PAIN0558B 10/01/2000		
	Rates	Fringes
GLAZIERS (All of Cass, Clay, Jackson and Platte Counties and ONLY East of Highway 13 in Johnson, Lafayette and Ray Counties)	21.18	11.27

PAIN0558I 10/01/2000		
	Rates	Fringes
GLAZIERS (West of Highway 13 in Johnson, Lafayette and Ray Counties)	21.68	6.69

PAIN1179C 10/01/2000		
	Rates	Fringes
SOFT FLOOR LAYERS	23.00	5.40

PLAS0518B 04/01/2001		
	Rates	Fringes
CASS, CLAY, JACKSON, LAFAYETTE, PLATTE AND RAY COUNTIES		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASONS	23.13	7.15

PLAS0518H 04/01/2001		
	Rates	Fringes
CASS, CLAY, JACKSON, LAFAYETTE, PLATTE & RAY COUNTIES		
PLASTERERS	24.15	5.15

PLAS0908J 03/01/2001		
	Rates	Fringes
JOHNSON COUNTY:		
CEMENT MASONS	18.61	5.65
PLASTERERS	17.68	5.65

PLUM0008A 06/01/2001		
	Rates	Fringes
PLUMBERS:		
CASS, CLAY, JACKSON, JOHNSON and PLATTE COUNTIES	27.19	10.86
LAFAYETTE and RAY COUNTIES	24.75	10.86

PLUM0533A 06/01/2001		
	Rates	Fringes
PIPEFITTERS	28.38	11.08

ROOF0020E 06/01/2001		
	Rates	Fringes
ROOFERS	24.45	6.89

* SFMO0314B 07/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	30.00	7.05

* SHEE0002G 07/01/2001		
	Rates	Fringes
SHEET METAL WORKERS	30.54	8.68

SUM01028A 04/14/1999		
	Rates	Fringes
SPRINKLER FITTERS:		
Cass, Lafayette and Ray Counties	16.31	1.78
Clay County	17.45	3.12
Jackson County	17.34	3.33
Platte County	15.70	2.20

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TEAM0541H 04/01/1997

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	18.19	4.75+a
GROUP 2	18.26	4.75+a
GROUP 3	18.39	4.75+a
GROUP 4	18.59	4.75+a

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump Truck Drivers; Flat Bed trucks; Pickup Trucks;

GROUP 2: Semi-Truck; Steel Truck; Distributor Truck; Oiler and Greaser.

GROUP 3: Double Bottom Units (20 ton capacity and over); Fork Trucks; Heavy Excavating (Dumpsters, Euclids, etc.); Heavy Hauling, A-Frame and Winch Trucks; Hydraulically Operated Aerial Lift; Hydro Lift Trucks; Straddle Trucks; Wheel Tractors (when used for towing); Articulated Dump Truck.

GROUP 4: Mechanics.

a. VACATION: An employee who has worked 1300 hours or more for an employer during the last full year shall receive one week vacation with pay for that year.

TEAM0541T 03/25/2000

	Rates	Fringes
TRUCK DRIVERS:		
Traffic Control Service Driver	14.15	2.44+a

a. PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and 2 personal days.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
SALEM COUNTY:		

ASBESTOS WORKERS	23.99	9.89
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ASBE0085A 06/01/1994

	Rates	Fringes
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ASBESTOS WORKERS/INSULATORS
Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems

ZONE 1	20.20	6.35
ZONE 2	18.30	6.825

ASBESTOS WORKERS ZONE DEFINITIONS

ZONE 1: ATLANTIC, BURLINGTON (Bass River and Washington Twps.); CAPE MAY, CUMBERLAND AND OCEAN (Eaglewood, Lacy, Little Egg Harbor, Long Beach, Ocean, Stafford, Tuckerton, and Union Twps.) COUNTIES.

ZONE 2: MONMOUTH (Remainder of County)

* ASBE0089G 07/01/2001

	Rates	Fringes
BURLINGTON (includes the townships of Bordentown, Burlington, Chesterfield, Easthampton, Florence, Mansfield, Mount Holly, New Hanover, North Hanover, Pembereton, Roebling, Springfield, Wrightstown, & Woodland); MERCER COUNTY; MONMOUTH (includes the townships of Allentown, Blansingburg, Brielle, Englishtown, Farmingdale, Freehold, Howell, Manasquan, Millstone, Roosevelt, Sea Crit, South Belmar, Spring Lake Heights, Upper Freehold, Wall, & West Belmar); & OCEAN (includes the townships of Beachwood, Berkeley, Breton Woods, Brick, Cederwood Park, Dover, Gillford Park, Island Beach, Island Heights, Jackson, Lakehurst, Lakewood, Manchester, New Egypt, Ocean Gate, Pine Beach, Plumstead, South Toms River & Toms River) COUNTIES:		

ASBESTOS WORKERS/INSULATORS
Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems

28.93	15.57
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BOIL0028C 08/01/1999

	Rates	Fringes
BOILERMAKERS	31.15	16.05

BRNJ0005A 11/01/2000

	Rates	Fringes
BRICKLAYERS, STONEMASONS, MARBLE		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MASONS, CEMENT MASONS, (Excludes
 Building Construction for Mercer
 County), PLASTERERS, TILE LAYERS,
 & TERRAZZO WORKERS 27.85 12.70

CARP0031B 05/01/1997
 Rates Fringes
 MERCER COUNTY (Remainder)
 CARPENTERS & INSULATORS 26.28 12.34
 MILLWRIGHTS 26.28 12.34

CARP0454B 07/01/1999
 Rates Fringes
 DOCK BUILDERS & PILEDRIVERMEN 25.00 15.79+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday,
 Memorial Day, Independence Day, Labor Day, Veteran's
 Day, Presidential Election Day, and Thanksgiving Day;
 provided employee works any of the 3 days in the 5-day
 work week preceeding the holiday and the first work day
 after the holiday.

CARP0623A 05/01/1998
 Rates Fringes
 ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER
 AND SALEM COUNTIES
 CARPENTERS, INSULATORS, MILLWRIGHTS
 AND SOFT FLOOR LAYERS 27.14 42%+.15

CARP0781A 05/01/1997
 Rates Fringes
 MERCER COUNTY (Beginning from the present Post Office in
 Lawrenceville to a point Northward through the present "Radio
 Site" to the junction of Rosedale Road and Read's Mill Road to
 the junction of Pennington and Mount Rose Road to the Somerset
 County line, again starting at the present Post Office in
 Lawrenceville and Eastward to the junction of Brunswick Pike
 and Delaware and Raritan Canal Bridge taking the center of the
 Road to CLarksville then South on Providence Line Road to the
 Pennsylvania Railroad then East on Dutch Neck North to Grover's
 Mills to the Middlesex County Line)
 CARPENTERS 27.20 .155+38%
 MILLWRIGHTS 27.70 .155+38%

CARP0999B 12/03/1994
 Rates Fringes
 CAMDEN, GLOUCESTER AND SALEM COUNTIES

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TERRAZZO FINISHERS	12.93	5.05

CARP0999C 12/03/1994		
	Rates	Fringes
ATLANTIC AND MONMOUTH COUNTIES:		
TILE FINISHERS	8.45	13%

CARP0999D 12/03/1994		
	Rates	Fringes
CAMDEN, GLOUCESTER AND SALEM COUNTIES		
TILE FINISHERS	12.72	5.05

CARP0999E 12/03/1994		
	Rates	Fringes
CAMDEN, GLOUCESTER AND SALEM COUNTIES		
MARBLE FINISHERS	12.95	5.05

CARP1456G 05/01/2000		
	Rates	Fringes
DIVERS	36.63	22.81
DIVER TENDERS	27.17	22.81

CARP1456H 05/01/2000		
	Rates	Fringes
MERCER AND MONMOUTH COUNTIES		
DOCK BUILDERS & PILED RIVERMEN	29.89	17.13

CARP2018A 05/01/1999		
	Rates	Fringes
OCEAN COUNTY		
CARPENTERS	27.85	42%
MILLWRIGHTS	28.35	42%

CARP2212B 05/01/1999		
	Rates	Fringes
BURLINGTON, MERCER, MONMOUTH AND OCEAN COUNTIES		
SOFT FLOOR LAYERS	25.75	39.73%

CARP2250A 05/01/1998		
	Rates	Fringes
MONMOUTH COUNTY		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARPENTERS	27.14	42%+.15
MILLWRIGHTS	27.64	42%+.15

ELEC0269D 10/01/2000

	Rates	Fringes
BURLINGTON (Area North of a line following the West and South limits of Burlington Borough from the Delaware River in a Southeasterly direction to the Burlington - Mt Holly Road, South-Southeast along this Road to and including the Town of Mount Holly, East along the Pennsylvania Railroad to and including New Lisbon and continuing along the Pennsylvania Railroad to Ocean County Line), AND MERCER COUNTIES		

LINE CONSTRUCTION (EXCEPT RAILROAD WORK):

Linemen, Cable Splicers, Truck Drivers, Equipment Operators and Technicians	33.08	6.25+29%
Groundmen and Winch Operators	26.46	6.25+29%

ELEC0269E 10/01/2000

	Rates	Fringes
BURLINGTON COUNTY (Area North of a line following the West and South limits of Burlington Borough from the Delaware River in a Southeasterly direction to the Burlington - Mount Holly Road, South-Southeast along this road to and including the Town of Mount Holly, East along the Pennsylvania Railroad to and including New Lisbon and continuing along the Pennsylvania Railroad to the Ocean County Line) AND MERCER COUNTIES		

ELECTRICIANS & CABLE SPLICERS	33.08	5.20+28%
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ELEC0351A 10/02/2000

	Rates	Fringes
ATLANTIC; BURLINGTON (Edgewater park, Delanco, Delran, Cinnaminson, Moorestown, Mount Laurel, Wilingsboro, Hainesport, Lumberton, Medford, Evesham Townships; and the portion of Shamong, Tabernacle, and Woodland Townships North of the Central Railroad of New Jersey Line; and the portion of Burlington, Westhampton, Easthampton, South Hampton and Pemberton Townships South of a line starting at the Delaware River and following the Southern boundary of Burlington Borough to the Burlington - Mount Holly Road, along this road to Mount Holly around but excluding Mount Holly to the Pennsylvania Railroad along the Pennsylvania Line through, but excluding, Pemberton, through but excluding New Lisbon to the Ocean County line and that portion south of the Central Railroad of New Jersey line running through Chatsworth); CAMDEN; CAPE MAY; CUMBERLAND; GLOUCESTER; and SALEM COUNTIES:		

ELECTRICIANS & CABLE SPLICERS	31.87	41.23%+.45
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ELEC0351C 10/02/2000

Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ATLANTIC; BURLINGTON (Edgewater park, Delanco, Delran, Cinnaminson, Moorestown, Mount Laurel, Wilingsboro, Hainesport, Lumberton, Medford, Evesham Townships; and the portion of Shamong, Tabernacle, and Woodland Townships North of the Central Railroad of New Jersey Line; and the portion of Burlington, Westhampton, Easthampton, South Hampton and Pemberton Townships South of a line starting at the Delaware River and following the Southern boundary of Burlington Borough to the Burlington - Mount Holly Road, along this road to Mount Holly around but excluding Mount Holly to the Pennsylvania Railroad along the Pennsylvania Line through, but excluding, Pemberton, through but excluding New Lisbon to the Ocean County line and that portion south of the Central Railroad of New Jersey line running through Chatsworth); CAMDEN; CAPE MAY; CUMBERLAND; GLOUCESTER; and SALEM COUNTIES:

LINEMAN, HEAVY EQUIPMENT OPERATOR, & CABLE SPLICERS	31.87	42.23%+.25
GROUNDMAN	27.09	42.23%+.25

ELEC0400A 06/01/1997

	Rates	Fringes
MONMOUTH AND OCEAN COUNTIES		
ELECTRICIANS & CABLE SPLICERS	28.96	5.90 + 18%

ELEC0400B 06/02/1997

	Rates	Fringes
MONMOUTH AND OCEAN COUNTIES		
LINE CONSTRUCTION (Excluding Railroad construction):		
Lineman, Equipment Operator, and Cable Splicer	28.96	18.75%+5.83
Groundman	27.01	18.75%+5.83

ELEC0999A 12/03/1994

	Rates	Fringes
BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MONMOUTH, OCEAN AND SALEM COUNTIES:		

LINE CONSTRUCTION (RAILROAD ONLY):		
Linemen	16.96	25%
Line Equipment Operator	16.20	25%
Groundman Winch Operator	13.07	25%
Groundman	11.06	25%
Dynamite Man	14.20	25%
Street Light Mechanic	12.97	25%
Line Equipment Mechanic	12.90	25%

ELEV0005C 06/19/2000

	Rates	Fringes
ELEVATOR MECHANICS	33.395	6.935+A

FOOTNOTE:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

- A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day
 PAID VACATION: Employer contributes 4% of basic hourly rate as vacation pay credit for 5 years or more of service, and 2% for 6 months to 5 years of service.

 ENGI0825B 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS: BUILDING CONSTRUCTION PROJECTS; HEAVY; HIGHWAY; ROAD; STREET AND SEWER PROJECTS:		
GROUP 1	31.12	15.65+A+B
GROUP 2	29.53	15.65+A+B
GROUP 3	27.62	15.65+A+B
GROUP 4	25.99	15.65+A+B
GROUP 5	24.28	15.65+A+B
GROUP 6	32.84	15.65+A+B

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Autograde - Combination Subgrader; base metal spreader and 7 base trimmer (CMI and similar types); autograde placer, trimmer, spreader combination (CMI and similar types); autograde slipform paver (CMI and similar types); backhoe; central power plants (all types); concrete paving machines; cranes (all types, including overhead and straddle traveling type); cranes; gantry; derricks (land or floating); drillmaster, quarrymaster (down the hole drill) rotary drill; self propelled hydraulic drill; self-powered drill; dragline; elevator graders; front end loaders (5 yds. and over); gradalls; grader; raygo; locomotive (large); mucking machines; pavement and concrete breaker, i.e.; superhammer and hoe ram; pile driver; length of boom including length of leads, shall determine premium rate applicable; roadway surface grinder; scooper (loader and shovel); shovels; tree chopper with boom; trench machines.

GROUP 2: "A" frame; backhoe (combination); boom attachment on loaders (rate based on size of bucket) not applicable to pipehook, boring and drilling machines; brush chopper; shredder and tree shredder; tree shearer; cableways; carryalls; concrete pump; concrete pumping system; pumpcrete and similar types; conveyors, 125 ft. and over; drill doctor including dust collector, maintenance); front end loaders (2 yds. but less than 5 yds.); graders (finisher); groove cutting machine (ride on type); header planer; hoists; (all types hoists, shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete brick shaf't caisson, snorkel roof, and/or any other similar type hoisting machines, portable or stationary, except Chicago boom type); hoists (Chicago boom type); hydraulic cranes, 10 tons and under, hydro-axle; jacks screw air hydraulic power operated unit or console type (not hand jack or pile load test type); log skidder; pans; pavers (all concrete; pumpcrete machines; squeezcrete and concrete pumping (regardless of size); scrapers; side booms; straddle carrier; ross and similar types; winch truck (hoisting).

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3: Asphalt curbing machine; asphalt plant engineer; asphalt spreader; autograder tube finisher and texturing machine (CMI and similar types); autograde curercrete machine (CMI and similar types); autograde curb trimmer and sidewalk; shoulder; slipform (CMI and similar types); bar bending machines (power); batchers; batching plant and crusher on side; belt conveyor systems; boom type skimmer machines, bridge deck finisher; bulldozers (all); car dumpers (railroad); compressor and blower type units (used independently or mounted on dual purposes trucks, on job site or in conjunction with job site in loading and unloading of concrete, cement, fly ash, instancrete, or similar type materials); compressor (2 or 3) (battery); concrete finishing machines; concrete saws and cutters (ride on type); concrete spreaders; hetzel; rexomatic and similar types; concrete vibrators, conveyors; under 125 ft.; crushing machines; ditching machine; small (ditchwitch or similar type); dope pots (mechanical with or without pump); dumpsters elevator; fireman; fork lifts (economobile; lull and similar types of equipment); front end loaders (1 yd. and over but less than 2 yds.). generators (2 OR 3) in battery; giraffe grinders; graders and motor patrols; gunnite machines (excluding nozzle); hammer vibratory (in conjunction with generator); hoist (roof, tugger, aerial platform hoist and house cars); hoppers; hopper doors (power operated); ladders (motorized); laddervator; locomotive; dinky type; maintenance; utility man; mechanics; mixers (except paving mixers); motor patrols and graders; pavement breakers, small; self-propelled ride on type (also maintaining compressor or hydraulic unit); pavement breaker; truck mounted; pipe bending machine (power); roller; black top; scales; power; seaman pulverizing mixer; shoulder widener; silos; skimmer machines (boom type); steel cutting machine; services and maintaining tractors; tug captain; vibrating plants (used in conjunction with unloading); welder and repair mechanics, concrete cleaning/decontamination machine operator, directional boring machine, heavy equipment robotics operator/technician, master environmental maintenance technician, ultra high pressure waterjet cutting tool system operator/maintenance technician, vacuum blasting machine operator/maintenance technician.

GROUP 4: Brooms and sweepers, chippers, compressor (single), concrete spreaders (small type), conveyor loaders (not including elevator graders), engines, large diesel (1620 H.P.) and staging pump, farm tractors; fertilizing equipment (operation and maintenance) fine grade machine (small type); form line graders (small type); front loader (under 1 yd.); generator (single); grease, gas, fuel and oil supply trucks; heaters (nelson or other type including propane, natural gas or flow-type units); lights; portable generating light plants; mixers; concrete small; mulching equipment (operation and maintenance) pumps (4 inch suction and over including sumbersible pumps); pumps (2 or less than 4" suction and over including submersible pumps); pumps (diesel engine and hydraulic) immaterial of power road finishing machines (small type); rollers; grade; fill or stone base; seeding equipment (operation and maintenance of); sprinkler and water pump trucks steam jennies and boilers, stone spreader; tamping machines; vibrating ride-on; temporary heating plant

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

(nelson or other type, including propane, natural gas or flow type untis); water and sprinkler trucks; welding machines (gas, diesel, and/or electric converters of Any type, single; two or three in a battery); welding systems, multiple (rectifier transformer type); wellpoint systems.

GROUP 5: Oiler.

GORUP 6: Helicopter Pilot.

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington'd Birthday, Memorial Day; Independence Day; Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day
- B. Employee receives 20% Premium Pay for Hazardous Waste Work.

ENGI0825C 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS		

TANK ERECTION:

GROUP 1	33.61	15.65+A+B
GROUP 2	32.77	15.65+A+B
GROUP 3	34.75	15.65+A+B
GROUP 4	30.68	15.65+A+B
GROUP 5	25.47	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday Memorial Day; Independence Day; Labor Day; Veteran's Day, Thanksgiving Day; and Christmas Day.
- B. Employee receives 20% premium pay for hazardous waste work.

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers--on all Cranes, derricks, etc. with booms including jib 140 ft. or more above the ground.

GROUP 2: Operating Engineers--on all equipment, including cranes derricks, etc. with booms including jib, less than 140 ft. above the ground.

GROUP 3: Helicopters--Pilot.

GROUP 4: Air compressors, welding machines and generators (gas, diesel, or electrical driven equipment and sources of power from a permanent plant, i.e., steam, compressed air, hydraulic or other power, for the operating of any machine or automatic tools used in the erection, alteration, repair and dismantling of tanks and any and all "DUAL PURPOSE" trucks used on the construction job site.

GROUP 5: Oiler.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0825D 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS: [STEEL ERECTION]:		
GROUP 1	33.89	15.65+A+B
GROUP 2	32.98	15.65+A+B
GROUP 3	30.69	15.65+A+B
GROUP 4	28.03	15.65+A+B
GROUP 5	26.50	15.65+A+B
GROUP 6	24.74	15.65+A+B
GROUP 7	35.25	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.
- B. Employees receive 20% premium pay for hazardous waste work.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS
[STEEL ERECTION]

GROUP 1: Cranes - (all cranes, land or floating with booms including jib 140 ft. and over, above ground); derricks-(all derricks, land or floating with boom including jib 140 ft. and over, above ground).

GROUP 2: Cranes - (all cranes, land or floating with booms including jib less than 140 ft. above ground); derricks (all derricks, land or floating with booms including jib, less than 140 ft. above ground).

GROUP 3: "A" frame; cherry pickers 10 tons and under; hoists; all types hoists shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, or any other similar type hoisting machines, portable or stationary, except Chicago boom type; jacks-screw air hydraulic power operated unit console type (not hand jack or pile load test type) side booms.

GROUP 4: Aerial platform used hoist; compressor, 2 or 3 in battery; elevators or house cars; conveyors and tigger hoists; fireman; forklift; generators, 2 or 3 maintenance-utility man; rod bending machine (power); welding machines--(gas or electric, 2 or 3 in battery, including diesels); captain power boats; tug master power boats.

GROUP 5: Compressor, single, welding machine, single, gas, electric converters of any type, diesel; welding system multiple (rectifier transformer type); generator, single.

GROUP 6: Oiler staddle carrier.

GROUP 7: Helicopter pilot.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0825E 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
OILOSTATIC MAINLINES & TRANSPORTATION PIPELINES:		
GROUP 1	31.75	15.65+A+B
GROUP 2	30.10	15.65+A+B
GROUP 3	27.96	15.65+A+B
GROUP 4	26.46	15.65+A+B
GROUP 5	24.74	15.65+A+B
GROUP 6	33.68	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday, Memorial Day; Independence Day; Labor Day; Veteran's Day, Thanksgiving Day; and Christmas Day
- B. Employee receives 20% premium pay for hazardous waste work.

OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINES CLASSIFICATIONS

- GROUP 1: Backhoe; cranes (all types); draglines; front-end loaders (5 yds. and over); gradalls; scooper (loader and shovel); koehring and trench machines.
- GROUP 2: "A" frame; backhoe (combination hoe loader); boring and drilling machines; ditching machine, small; ditchwitch or similar type; fork lifts; front end loaders (2 yds and over but less than 5 yds.); graders, finish (fine); hydraulic cranes, 10 tons and under (over 10 tons - crane rate applies); side booms; and winch trucks (hoisting).
- GROUP 3: Backfiller; brooms and sweepers; bulldozers; compressors (2 or 3 in battery); front-end loaders (under 2 yds.); generators; giraffe grinders; graders and motor patrols; mechanic; pipe bending machine (power); tractors; water and sprinkler trucks, welder and repair mechanic.
- GROUP 4: Compressor (single); dope pots (mechanical with or without pump); dust collectors; farm tractors; pumps (4 in. suction and over); pumps (2 or less than 4 in. suction); pumps; diesel engine and hydraulic (immaterial or power); welding machines; gas or electric converters of any type, single; welding machines, gas or electric converters of any type, 2 or 3 in battery multiple welders; wellpoint systems (including installation and maintenance).
- GROUP 5: Oiler, grease, gas, fuel and supply trucks and tire repair and maintenance.
- GROUP 6: Helicopter-pilot.

IRON0011B 07/01/2000

	Rates	Fringes
MONMOUTH AND OCEAN COUNTIES		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRONWORKERS:

Structural & Ornamental	27.28	22.15
Reinforcing	25.78	22.15

IRON0068A 07/01/2000

BURLINGTON (Remainder), MERCER, MONMOUTH (South half), AND OCEAN (Middle third) COUNTIES

IRONWORKERS:

Structural, Ornamental	27.21	19.85
Reinforcing (Concrete Rods)	25.21	19.85

IRON0350A 07/01/2000

ATLANTIC, CAPE MAY, CUMBERLAND (Area East of a line drawn from Delaware Bay through the town of Cedarsville and upwards to the point where the county lines of Gloucester, Cumberland, and Atlantic meet), AND OCEAN (Remainder) COUNTIES

IRONWORKERS:

BUILDING CONSTRUCTION:

Structural & Precast	26.80	17.75
Reinforced Concrete	25.80	17.75
Fencing, Graudrail, Erectors, Windows	24.35	17.75

HIGHWAY CONSTRUCTION:

Reinforced Concrete	23.50	17.75
Structural & Precast	25.85	17.75

* IRON0399A 07/01/2001

BURLINGTON (Southern portion up to but not including Lumberton and Chatsworth Twps.), CAMDEN, CUMBERLAND (Remainder), GLOUCESTER, AND SALEM COUNTIES

IRONWORKERS:

Structural, Ornamental, and Reinforcing	30.10	13.90
Hazardous work	33.10	13.90

LABO0172A 03/01/2001

ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MERCER, OCEAN AND SALEM COUNTIES

LABORERS:

GROUP 1	23.70	10.65+A
GROUP 2	24.00	10.65+A
GROUP 3	24.20	10.65+A
GROUP 4	24.40	10.65+A

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5	24.65	10.65+A
GROUP 6	28.20	10.65+A
GROUP 7	26.70	10.65+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day; Labor Day, Veteran's Day, Presidential Election Day, Thanksgiving Day, and Christmas Day, provided the employee works 3 days for the same Employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABORERS CLASSIFICATIONS

GROUP 1: Common laborers, landscape laborers, railroad track laborers, flagmen, salamander tenders, pitman, dumpman, waterproofing laborers, rakers and tampers on cold patch work, and wrapping and coating of all pipes.

GROUP 2: Powder carrier, magazine tender, and signalman.

GROUP 3: Sewer pipe, laser men, conduit and duct line layer, power tool operator, jack hammer, chipping hammer, pavement breaker, power buggy, concrete cutter, asphalt cutter, sheet hammer and tree cutter operators, sandblasting cutting, burning and such other power tools used to perform work usually done manually by laborers.

GROUP 4: Wagon drill operator, timberman and drill master.

GROUP 5: Finisher, manhole, catch basin or inlet builder, form setter, rammer, paver, gunite nozzleman and stonecutter.

GROUP 6: Blaster.

GROUP 7: Hazardous waste laborer.(Excludes asbestos work).

LABO0172B 03/01/2000

	Rates	Fringes
LABORERS; FREE AIR TUNNEL:		
GROUP 1	27.35	10.05+A
GROUP 2	23.95	10.05+A
GROUP 3	23.80	10.05+A
GROUP 4	23.30	10.05+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day; Independence Day, Labor Day, Presidential Election Day, provided the employee works 3 days for the same Employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABORERS; FREE AIR TUNNEL CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1: Blasterers.

GROUP 2: Skilled men (including miners, drill runners, iron men, maintenance men, conveyor men, safety miners, riggers, block layers, cement finishers, rod men, caulkers, powder carriers, all other skilled men).

GROUP 3: Semi-skilled men (including chuck tenders, track men, nippers, brakemen, derail men, cable men, hose men, grout men, gravel men, form men, bell or signal men (top or bottom), form workers and movers, concrete workers, shaft men, tunnel laborers, all other semi-skilled).

GROUP 4: All others (including powder watchmen, change house attendants, top laborers).

LABO0172C 03/01/2000

Rates Fringes

ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MERCER, MONMOUTH, OCEAN, SALEM, AND MIDDLESEX (Southern half) COUNTIES

LABORERS - ASPHALT CONSTRUCTION:

STREET:

Head Rakers	22.05	11.70+A
Rakers & Screed Men	21.90	11.70+A
Tampers, Smothers, Kettlemen, Painters, Shovelers and Roller Boys	21.65	11.70+A

PLANT:

Scale Mixers & Burner Men	21.90	11.70+A
Feeders and Dust Men	21.65	11.70+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day; Independence Day; Labor Day; Veteran's Day, Presidential Election Day, Thanksgiving Day, and Christmas Day provided The Employee works 3 days for same employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABO0222A 05/01/2001

Rates Fringes

BURLINGTON (Twps. of Cinnaminson, Delance, Delran, East Hampton, Edgewater Park, Evesham, Hainesport, Lumberton, Medford, Moorestown, Mount Laurel, Pemberton, Shamong, South Hampton, Tabernacle, West Hampton, Willingsboro and Woodland); CAMDEN; CUMBERLAND; GLOUCESTER; AND SALEM COUNTIES

LABORERS (BUILDING CONSTRUCTION):

CLASS A	22.45	11.25
CLASS B	21.95	11.25

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CLASS C 18.66 11.25

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer, Tamper, Motorized Tampers and Compactors, Street Cleaning Machines, Scaffold Builder, Hydro, Demolition Equipment, All types of Motorized Fork Lifts Riding Motor Buggy Operator, Bobcat Operator, Mortar Man, Burners, Nozzle Man on Gunitite work.

CLASS B: All laborers not listed in Class A or C.

CLASS C: Laborers doing Janitorial-type light clean up work associated with the turnover of the project to the owner All Flagman, and those manning temporary heat of all types.

LABO0415A 05/01/2001

ATLANTIC; BURLINGTON (Twps. of Bass River and Washington); CAPE MAY; CUMBERLAND (Twps. of Commercial, Dawne, Fairfiled, Lawrence, Maurice, and Millville); AND OCEAN (That portion up to and including Lacy Twp.) COUNTIES

LABORERS (BUILDING CONSTRUCTION):

	Rates	Fringes
CLASS A	22.45	11.25
CLASS B	21.95	11.25
CLASS C	18.66	11.25

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer, Tamper, Motorized Tampers and Compactors, Street Cleaning Machines, Scaffold Builder, Hydro Demolition Equipment, all types of Motorized Fork Lifts, Riding Motor Buggy Operator, Bobcat Operator, Mortar Man, Burners, Nozzle Man on Gunitite work.

CLASS B: All laborers not listed in Class A or C.

CLASS C: Laborers doing Janitorial- type light clean up work associated with the turnover of the project to the owner All flagman, and those manning temporary heat of all types.

LABO0472A 03/01/2001

MONMOUTH COUNTY

LABORERS (HEAVY AND HIGHWAY CONSTRUCTION):

	Rates	Fringes
GROUP 1	23.70	10.65+A
GROUP 2	24.10	10.65+A
GROUP 3	24.20	10.65+A
GROUP 4	24.40	10.65+A
GROUP 5	24.65	10.65+A
GROUP 6	28.20	10.65+A

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 7a	26.70	10.65+A
Group 7b	24.70	10.65+A

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Common laborers, landscape laborers, railroad track laborers, flagmen, salamander tenders, pitman, dumpman, waterproofing laborers, rakers and tampers on cold patch work, and wrapping and coating of all pipes, & Asphalt Laborers.

GROUP 2: Powder carrier, magazine tender, signalman, asphalt raker, and asphalt screedman

GROUP 3: Sewer pipe, laser men, conduit and duct line layer, power tool operator, jack hammer, chipping hammer, pavement breaker, power buggy, concrete cutter, asphalt cutter, sheet hammer and tree cutter operators, sandblasting cutting, burning, power tool operator, and such other power tools used to perform work usually done manually by laborers.

GROUP 4: Wagon drill operator, timberman and drill master.

GROUP 5: Finisher, manhole, catch basin or inlet builder, form setter, rammer, paver, gunite nozzleman, and stone cutter

GROUP 6: Blaster.

Group 7a: Hazardous waste laborer required to wear level A,B, or C personal protection.

GROUP 7b: Certified laborer working a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A,B, or C personal protection.

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Presidential Election Day, Thanksgiving Day, and Christmas Day provided the employee works 3 days for the same employer within a period of 10 working days consisting of 5 working days before and 5 working days after the day upon which the holiday falls or is observed

LABO0595A 05/01/2001

	Rates	Fringes
BURLINGTON (Remainder), MERCER, MONMOUTH, and OCEAN (Remainder) COUNTIES:		

LABORERS (BUILDING CONSTRUCTION):

CLASS A	22.45	11.25
CLASS B	21.95	11.25
CLASS C	18.66	11.25

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer; Tamper; Motorized Tampers and Compactors
 Street Cleaning Machines; Scaffold Builder; Hydro
 Demolition Equipment; All types of Motorized Fork Lifts;
 Riding Motor Buggy Operator; Bob Cat Operator; Mortar
 Man; Burners; Nozzle Man on gunite Work.

CLASS B: All Laborers not listed in Class A or C.

Class C Laborers doing Janitorial type light clean up
 associated with the turnover of the project or part of
 a project to the owner; All Flagman; and those manning
 temporary heat of all types.

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 LABO1030A 04/01/2001

	Rates	Fringes
LABORERS: (The removal, abatement, enclosure and decontamination of personal protective equipment, chemical protective clothing and machinery relating to asbestos and/or toxic and hazardous waste of materials which shall include but not necessarily be limited to: the erection, moving, servicing and dismantling to all enclosures, scaffolding, barricades, and the operation of all tools and equipment normally used in the removal or abatement of asbesots and toxic and hazardous waste or materials, the labeling, bagging, cartoning, crating, or other packaging of materials for disposal; and the clean up of the work site and all other work incidental to the removal, abatement, encapsulation, enclosure, and decontamination of asbestos or toxic and hazardous waste materials; and in addition, all work tasks involved in the maintenance and operation of energy resource recover plants (co- generation plants).)		
LABORERS	21.85	10.12

 PAIN0252H 06/01/2000

	Rates	Fringes
ATLANTIC, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, SALEM, and parts of BURLINGTON and OCEAN (everything south of these cities in Burlington and Ocean Counties-Florence to Bustleton to Columbus to Jobstown to Pemberton to Ongs Hat to Chatsworth to Whiting to Pinewald to Ocean Gate to Seaside Heights) COUNTIES:		
GLAZIERS	25.50	11.45

 PAIN0711A 05/01/2000

	Rates	Fringes
ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MONMOUTH, OCEAN, & SALEM COUNTIES:		
PAINTING, PAPERHANGING & ALLIED WORK	28.75	2.54+27%

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SPRAYING, SANDBLASTING, DIPPING,
 POWER TOOLS (Over 115 volts) &
 PAPERHANGING PASTING APPARATUS
 WORK ON TANKS, BRIDGES, TOWERS,
 STACKS, & OPEN STRUCTURAL STEEL,
 WORK FROM CABLES & SWINGING SCAFFOLDS,
 EXTERIOR WORK ABOVE THREE STORIES

	31.25	2.54+27%
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REPAINT WORK & PREPARATION THEREFORE
 (including jobs where no major alterations
 are taking place but excluding bridges,
 stacks, elevated tanks & generating
 stations)

	22.00	2.54+27%
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PAIN0711H 05/01/2000

	Rates	Fringes
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MERCER COUNTY

PAINTERS:

New Construction and Major Alterations	28.75	27%+2.55
Repaint Work	22.00	27%+2.55
Spraying or application of Hazardous or Dangerous Materials on Repaint Work	24.00	27%+2.55

Bridges, TV & Radio Towers, Structural Steel & Tanks above 3 stories in height (30' or over), Smoke Stacks, Water Towers, Sand- Blasting, Steam Cleaning, Spraying, or application of Hazardous Materials	31.25	27%+2.55
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Paperhanging	25.60	27%+2.55
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PAIN0711J 08/01/1999

	Rates	Fringes
DRYWALL FINISHERS & TAPERS	28.25	11.23

PAIN0711K 05/01/2000

	Rates	Fringes
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MERCER, MONMOUTH and parts of BURLINGTON AND OCEAN (everything
 north of these cities in BURLINGTON and OCEAN COUNTIES Florence
 to Bustleton to Columbus to Jobstown to Pemberton to Onge
 Hat to Chatsworth to Whiting to Pinewald to Ocean Gate to
 Seaside Heights) COUNTIES:

GLAZIERS:	28.75	10.30
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLAS0008I	05/01/2000		
		Rates	Fringes
CAMDEN, GLOUCESTER and SALEM COUNTIES:			
PLASTERERS		24.35	12.65

PLAS0008L	05/01/2000		
		Rates	Fringes
ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER, MONMOUTH & OCEAN COUNTIES:			
PLASTERERS		27.15	12.55

PLAS0699A	05/01/2001		
		Rates	Fringes
CAMDEN, GLOUCESTER, AND SALEM COUNTIES			
CEMENT MASONS		26.65	11.70

PLUM0009I	03/01/2001		
		Rates	Fringes
AIR CONDITIONING & REFRIGERATION MECHANICS			
		23.81	9.09

SCOPE OF WORK:

Installation of air conditioning and refrigeration equipment whose combined tonnage does not exceed 15 tons. Installation of water cooled air conditioning that does not exceed 10 tons (includes piping of compenent system and erection of water tower). Installation of air cooled air conditioning that does not exceed 15 tons. Installation of air conditioning equipment of the "Package-Unitary" rooftop type, the combined tonnage of which does not exceed 35 tons. Packaged Unitary Air Conditioning and Refreigeration Institute (ARI) as follows: "A unitary air conditioner consists of one or more cooling coil, and air moving device, a cpmpressor and condenser combination, and may include a heating function as well". Any and all related piping to the above installation will be done under the appropriate trade jurisdiction.

PLUM0009J	07/01/2000		
		Rates	Fringes
BURLINGTON (from the town of Burlington City, to everything north along County Road Route 541 East also known as High Street, until it reaches the city of Mount Holly which is also Local 9 territory, Madison Avenue in Mount Holly to State Road Route 38 East, again everything north along State Road Route 38 East until its cross over, State Road Route 206 and becomes County Road Route 530, continuing on including Pemberton Boro to south on Magnolia Road in Pemberton Township to Magnolia New Lisbon Road (Route 545), to south on Mount Holly Misery Road to State Road Route 70 East to the Ocean County Line), MERCER, MONMOUTH,			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
AND OCEAN COUNTIES:

PLUMBERS & PIPEFITTERS	31.98	14.30
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PLUM0322A 05/01/2000

	Rates	Fringes
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ATLANTIC; BURLINGTON (Remainder) CAMDEN; CAPE MAY; CUMBERLAND;
GLOUCESTER; AND SALEM COUNTIES

PLUMBERS/PIPEFITTERS	27.11	15.70
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ROOF0004A 06/01/1996

	Rates	Fringes
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MONMOUTH COUNTY (Remainder), AND OCEAN (Remainder) COUNTIES

ROOFERS	24.22	11.75
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ROOF0030D 05/01/2001

	Rates	Fringes
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ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER,
MERCER AND SALEM COUNTIES; and the following portions of MONMOUTH
AND OCEAN COUNTIES: West of a line starting from the point on
Route 70 where Burlington and Ocean Counties meet, Easterly along
Route 70 to Route 571, along Route 571 to Cassville, Easterly on
Route 528 to Van Hiseville, Northerly on Route 527 to Manalapan,
Westerly on Route 33 to the Monmouth County Line

ROOFERS:

Shingle, slate and tile	19.25	6.17
All other work	25.50	12.55+A

FOOTNOTE:
A. PAID HOLIDAY: Election Day.

SFNJ0669B 04/01/2001

	Rates	Fringes
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ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER (Remainder),
MONMOUTH, OCEAN, AND SALEM (Remainder) COUNTIES

SPRINKLER FITTERS	31.30	6.00
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SFNJ0692C 05/01/2001

	Rates	Fringes
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CAMDEN, GLOUCESTER, MERCER (Town of Trenton), AND SALEM (Penns
Grove, excluding Penns Grove Airport) COUNTIES

SPRINKLER FITTERS	33.57	11.00
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SHEE0019M 05/01/2001

	Rates	Fringes
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CAMDEN, GLOUCESTER, & SALEM COUNTIES:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEET METAL WORKER 29.32 16.26+H

H-Election Day is a paid holiday.

 SHEE0027B 06/01/2000
 ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER, MONMOUTH AND OCEAN COUNTIES

	Rates	Fringes
SHEET METAL WORKERS	31.00	15.38

 SUNJ1002A 12/07/1993
 MERCER COUNTY

	Rates	Fringes
CEMENT MASONS (BUILDING CONSTRUCTION ONLY)	19.60	8.83

 TEAM0331A 01/01/1998
 ATLANTIC AND CAPE MAY COUNTIES

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	20.75	8.92+A
GROUP 2	20.90	8.92+A
GROUP 3	21.10	8.92+A
GROUP 4	21.25	8.92+A

FOOTNOTE:
 A. PAID HOLIDAYS: New Year's Day; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Veteran's Day; Presidential Election Day; Thanksgiving Day; & Christmas Day; provided the employee works 3 days in the week in which the holiday falls.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Striaight Truck Driver, Dump Truck Driver, Water Truck Driver, Transit Mix Driver, Pickup Truck Driver, Tank Truck Driver, Track Truck Driver, Agitator Truck Driver, Concrete Mobile Unit Driver, Tringer Bead Truck Driver, Ross Carrier Driver, Warehouse Forklift Driver, A Frame Truck Driver, Gin Pole Truck Driver, Form Truck Driver, Driver for Truck having Self Loading/Unloading Attachment, & Vacuum Truck/Trailer.

GROUP 2: Trucks Towing Driver

GROUP 3: Trailer Truck Driver, Winch Truck Driver, Off Road Dump Truck Driver, Fuel Truck Driver, Tractor Trailer (any trailer driver), Asphalt Oil Distributor Driver, & Off Road Water Truck Driver.

GROUP 4: Mechanics.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 2: Drivers on Euclids, 10 Wheel Tractors and Tractor
Trailer Trucks, Low Bed, and Pole Trailers

TEAM0469D 05/01/2000

BURLINGTON (Remainder), MERCER, MONMOUTH, AND OCEAN COUNTIES

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1	26.35	11.835+A
GROUP 2	26.40	11.835+A
GROUP 3	26.50	11.835+A
GROUP 4	26.60	11.835+A

FOOTNOTE:

- A. Employees working or receiving pay for 80 days within a year receive one week's paid vacation (48 hours); 125 days receive two weeks' vacation (96 hours); 145 days receive 15 days (120 hours); 15 years seniority and 145 days receive 4 weeks vacation (160 hours).

PAID HOLIDAYS: New Year's Day; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Columbus Day; Veteran's Day, General Election Day; Thanksgiving Day; and Christmas Day provided the employee has been assigned to work or "shapes" one day of the calendar week during which the holiday falls. Employee receives \$3.00 per hour premium pay for hazardous waste work.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on the following type vehicles: straight dumps, flats, floats, pick-ups, container haulers, fuel, water sprinkler, road oil, stringer, bead, hot pass, bus dumpcrete, transit mixers, agitator mixer, half truck, winch truck, side-0-matic, dynamite, power, x-ray, welding, skid, jeep, station wagon, stringer, A-frame, all dual purpose trucks, truck with mechanical tailgate, asphalt distributor, batch trucks, seeding, mulching, fertilizer, air compressor trucks (in transit), parts chaser, escort, scissor, Hi-lift, telescope, concrete breaker, gin pole, stone, sand, asphalt distributor and spreader, nipper, fuel trucks (drivers on fuel trucks, including handling of unit), skid truck (debris container - entire unit), concrete mobile trucks (entire unit), expediter (parts chaser), beltcrete trucks, pumpcrete trucks, line truck, reel truck, wreckers, utility trucks, tank trucks, warehousemen, warehouse partsmen, yardmen, lift truck in warehouse, warehouse clerk, parts man, material checkers, receivers shippers, binning men (materials cardex man); drivers on the following type vehicle: broyhill coal tar epoxy trucks, little-ford bituminous distributor, slurry seal truck or vehicle, thiokol trackmaster pick-up (swamp cat pickup, bucket loader dump truck and any rubber-tired tractor used in pulling and towing farm wagons and trailers of any description, similar type vehicles); off-site and on-site repair shop, team drivers, vacuum or vac-all trucks (entire unit)

GROUP 2: Drivers on straight 3-axle materials; truck and floats

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 4: Trailer winch off road dump, fuel, tractor trailer, asphalt oil distributor, off road water truck

GROUP 5: Mechanics

*GROUP 6: Truck drivers, on hazardous waste removal work on a state or federally designated hazardous waste site where the truck driver is in direct contact with hazardous materials and when personal protective equipment is required for respiratory, skin and eye protection the teamster shall receive \$2.25 per hour in addition to the regular rate of pay including overtime pay.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION NJ010003 07/06/2001 NJ3

Date: July 6, 2001
 General Decision Number **NJ010003**

Superseded General Decision No. NJ000003

State: **New Jersey**

Construction Type:
BUILDING
 HEAVY
 HIGHWAY

County(ies):
 BERGEN MIDDLESEX SUSSEX
 ESSEX MORRIS UNION
 HUDSON PASSAIC WARREN
 HUNTERDON SOMERSET

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories, does not include Hunterdon or Somerset Counties for building construction only)

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/06/2001
3	05/04/2001
4	06/01/2001
5	07/06/2001

COUNTY(ies):
 BERGEN MIDDLESEX SUSSEX
 ESSEX MORRIS UNION
 HUDSON PASSAIC WARREN
 HUNTERDON SOMERSET

ASBE0032E 09/19/1999

	Rates	Fringes
BERGEN, ESSEX, HUDSON, HUNTERDON (Remainder), MIDDLESEX (Remainder), MORRIS, PASSIAC, SOMERSET (Remainder), SUSSEX, UNION, & WARREN (Remainder) COUNTIES:		

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials; protective coverings, coatings, and finishes to all types of mechanical systems

	Rates	Fringes
	26.58	14.82

* ASBE0089A 07/01/2001

	Rates	Fringes
HUNTERDON (Alexander, Bethlehem, Bloomsbury, Clinton, Delaware,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

East Armwell, Flemington, Franklin, Frenchtown, Glen Garden, Hampton, High Bridge, Holland, Kingwood, Lambertville, Lebanon, Milford, Raritan, Readington, Stockton, Union, and West Armwell Twps), MIDDLESEX (Cranbury, East Brunswick, Helmatta, Jamesburg, Milltown, Monroe, North Brunswick, Plainsboro, South Brunswick, and Spotswood Twps), SOMERSET (Branchburg, Franklin, Hillsborough, Manville, Millstone, Montgomery and Rocky Hill Twps), AND WARREN (Franklin, Greenwich, Hamony, Lopatcong, Oxford, Phillipsburg, Washington, and White Twps) COUNTIES

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of meechanical systems

28.93 15.57

BOIL0028A 08/01/1999

	Rates	Fringes
BOILERMAKER	31.15	16.05

BRNJ0004D 11/01/2000

	Rates	Fringes
BERGEN, ESSEX, HUDSON, MORRIS, PASSAIC, SUSSEX, UNION, WARREN, the following parts of HUNTERDON, and SOMERSET COUNTIES: (at Old Mill Inn Route #202 follow Passaic River to the Dean River from thence to Sunset Lake at Pluckemin, follow Chambers Brook to Oldwick to Fairmount, Hunderton County across the county line to Long Valley in Morris County, thence across from Long Valley into Chester, three miles North of Chester to Muskrat, then back across into Ralston, Morris County, then follow Morris-Somerset County line into Mendham Township, then across Morris County line into Somerset, back to the Old Mill Inn in Bernardsville, Route #202, Somerset County)		

BRICKLAYERS, CEMENT MASONS, PLASTERERS, & STONEMASONS

28.77 12.95

BRNJ0005B 11/01/2000

	Rates	Fringes
HUNTERDON (Annadale, Califon, Lebanon, Oldwick, Readington, Three Bridges, & White House Station Twps.), MIDDLESEX (except Dunellen, Middlesex, Oak Tree, New Market, and South Plainfield Twps), AND SOMERSET (Remainer) COUNTIES		

BRICKLAYERS, CEMENT MASONS, PLASTERERS & STONEMASONS

27.85 12.70

CARP0006B 05/01/2000

	Rates	Fringes
BERRGEN (East of Hackensack River including but not limited to Cliffside, Coytesville, Edgewater, Fairview, Fort Lee, Grant Wood, Leonia, Palisades Park, and Ridgefield Twps), AND HUDSON		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

(East of the Hackensack River) COUNTIES

CARPENTER	28.36	12.32
MILLWRIGHTS	29.06	12.53

CARP0015B 05/01/2000

	Rates	Fringes
BERGEN COUNTY (Remainder)		
CARPENTERS	28.46	43%+.18
MILLWRIGHTS	28.96	43%+.18

CARP0031C 05/01/1997

	Rates	Fringes
HUNTERDON (Starting at the South of the town of Frenchtown on the Delaware River, thence following the line in the center of the road to Bapistown to Croton to the City of Flemington to Flemington Junction to Three Bridges, tehnce following the Somerset County line Northward, all territory South of this line including the City of Flemington) AND SOMERSET (all territory South of a line beginning at Armwell on the County line to Zion to Fairview to Dutchtown to Plainsville to Bell Mead to Griggstown to the Delaware and Raritan Canal) COUNTIES		
CARPENTERS	26.28	12.34

CARP0041C 05/01/1995

	Rates	Fringes
ESSEX (Millburn Twp), MIDDLESEX, MORRIS, SOMERSET (Municipalities of Greenbrook, North Plainfield, Watchung, and all communities East of King George's Road), SUSSEX AND UNION COUNTIES		
CARPENTERS & INSULATORS	25.94	37%+.04
MILLWRIGHTS	26.44	37%+.04

CARP0099I 05/01/1995

	Rates	Fringes
LATHERS	25.94	37%+.10

CARP0124A 05/01/2000

	Rates	Fringes
BERGEN (City of Garfield and Boroughs of Lodi and Wallington), AND PASSAIC COUNTIES		
CARPENTERS	28.46	43%+.18
MILLWRIGHTS	28.96	43%+.18

CARP0399A 05/01/1995

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
WARREN COUNTY		
CARPENTERS & INSULATORS	26.33	35%+.04
MILLWRIGHTS	26.58	35%+.04

CARP1342A 05/01/2000		
ESSEX, AND HUDSON (West of Hackensack River)		
CARPENTERS	28.46	43%+.18
MILLWRIGHTS	28.96	43%+.18

CARP1456A 05/01/2000		
DIVER		
DIVER TENDER	27.17	22.81

CARP1456B 05/01/2000		
DOCK BUILDER & PILEDRIVERMEN		
	29.89	17.13

CARP2212A 05/01/1999		
BERGEN, ESSEX, HUDSON, & PASSAIC COUNTIES		
SOFT FLOOR LAYERS	25.75	39.73%

ELEC0017A 07/01/1994		
ELECTRICIANS (RAILROAD CONSTRUCTION)		
COMMERCIAL TELEPHONE INSTALLATION	21.20	26.5%

* ELEC0102B 06/04/2001		
MORRIS, PASSAIC, SUSSEX, AND WARREN COUNTIES		
LINE CONSTRUCTION:		
Lineman & Equipment Operators	35.52	37%
Cable Splicers	39.08	37%
Groundmen	21.31	37%

* ELEC0102C 06/04/2001		
MORRIS, PASSAIC, SUSSEX, AND WARREN COUNTIES		
ELECTRICIAN	35.52	37%
CABLE SPLICER	39.08	37%

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEC0164B 08/15/2000

	Rates	Fringes
BERGEN, ESSEX, AND HUDSON COUNTIES		
LINE CONSTRUCTION:		
Lineman, Welder, X-Ray Technician, Equipment Repairman, & Equipment Serviceman	34.42	41%
Cable Splicer	38.89	41%
Groundman	20.66	41%

* ELEC0164C 06/04/2001

	Rates	Fringes
BERGEN, ESSEX, AND HUDSON COUNTIES		
ELECTRICIANS	35.60	42%
CABLE SPLICERS	40.23	42%

ELEC0262A 06/01/1994

	Rates	Fringes
UNION COUNTY (Area South and West of a line running East from Somerset County on Mountain Avenue in New Providence Borough to Diamond Hill Road, South on that road to and along Park Avenue in Scotch Plains and continuing along Martine Avenue to and Norrtheast along Raritan Road to and Easterly along Westfield - Scotch Plains line to Lehigh Valley Railroad and Southwest on the railroad to Middlesex County line)		
LINE CONSTRUCTION:		
Groundman	22.05	11.7%+3.76
Lineman, Cable Splicers, Line Equipment Operator	23.23	11.7%+3.76

ELEC0262B 08/15/1993

	Rates	Fringes
MIDDLESEX COUNTY (Area North and West of a line following the Philadelphia and Reading Railroad East from the Raritan River to Dismal Road, Northeast on Dismal Road to Park Avenue, North on Park Avenue to Lehigh Valley Railroad, and Northeast along that railroad to the Union County line)		
ELECTRICIANS	25.92	6.09+20%

ELEC0262C 06/01/1994

	Rates	Fringes
HUNTERDON (Except Tewksbury Twp and Califon Borough), AND		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SOMERSET (Area South of a line following Mountain Ave from the Union County line West to Hillcrest Ave in Union Village, North on Hillcrest Ave to and West on the Passaic River, West on Dead River, West on Allen Road, North on Somerville Road, West on Howell Road, Southwest on Mount Prospect Road, West on Martinsville - Pluckemin Road, West on Klines Mill road, North on John Kane Road to Hunterdon County Line, and also that portion of Montgomery Twp West and South of a line following U.S. Highway #206 North from Mercer County to the Harligen Road, West along that road the Dutchtown - Zine Road to Hillsboro Township line)

LINE CONSTRUCTION:

Lineman, Cable Splicer	22.87	3.76+11.7%
Groundman	21.06	3.76+11.7%

ELEC0262E 08/15/1993

Rates Fringes

UNION COUNTY (Area South and West of a line running East from Somerset County on Mountain Ave in New Providence Borough to Diamond Hill Rd, South on that Road to and along Park Ave in Scotch Plains and continuing along Martine Ave to and Northeast along Raritan Rd to and Easterly along Westfield - Scotch Plains line to the Lehigh Valley Railroad and Southwest on the railroad to the Middlesex County line)

CABLE SPLICERS & ELECTRICIANS	26.85	6.09+20%
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ELEC0262G 06/01/1994

Rates Fringes

HUNTERDON (Except Tewksbury Twp and Califon Borough), SOMERSET (Area South of a line following Mountain Avenue from Union County line West to Hillcrest Ave to and West on the Passaic River, West on Dead River, West on Allen Rd, North on Somerville Rd, West on Howell Rd, Southwest on Mt Prospect Rd, West on Martinsville-Pluckemin Rd, West on Klines Mill Rd, North on John Kane Rd to Hunterdon County line, and that portion of Montgomery Twp West and South of a line following US Highway #206 North from Mercer County to Harligen Rd, West along that road that road the Dutchtown - Zine Rd to Hillsboro Twp line)

ELECTRICIANS & CABLE SPLICERS	26.83	6.09+20%
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ELEC0262H 11/30/1994

Rates Fringes

MIDDLESEX COUNTY (Area North and West of a line following the Philadelphia and Reading Railroad East from the Raritan River to Dismal Road, Northeast on Dismal Road to Park Avenue, North on Park Avenue to the Lehigh Valley Railroad, and Northeast along that railroad to the Union County line)

LINE CONSTRUCTION:

Linemen, Cable Splicers	22.87	3.76+11.7%
Groundmen	21.06	3.76+11.7%

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEC0358A 06/01/1998		
	Rates	Fringes
MIDDLESEX COUNTY (Remainder)		
ELECTRICIANS	30.26	42.75%

ELEC0358C 06/01/1998		
	Rates	Fringes
MIDDLESEX COUNTY (Remainder)		

LINE CONSTRUCTION:

Linemen, Hole Digger Operator, Truck w/o Winch or Pole & Steel Hand, Truck w/o Winch, X-ray Technician & Equip. Repairer	30.26	43%
Cable Splicer	33.89	43%
Groundman & Winch Operator	29.47	43%
Certified Welder Lineman	31.77	43%

* ELEC0456B 06/04/2001

	Rates	Fringes
MIDDLESEX COUNTY (Area South and West of a line extending East from the Raritan River along the Philadelphia and Reading Railroad to Shelton Rd, South on Shelton Rd to Lincoln Hwy to Vineyard Rd to Old Post Rd, along Old Post Rd to Mill Rd, along Mill Rd to the Raritan River, along the Raritan River to South River, along South River to the Southern boundary of the Borough of South River, along this boundary to Cranbury South River Turnpike, along this road continuing on to Washington Rd and Maplewood Ave in Cranbury to Scott Ave, along Scott Ave to Main St, on Main St and the turnpike to Millstone River)		
ELECTRICIANS	33.56	45.75%
CABLE SPLICERS	37.59	45.75%

* ELEC0456C 06/04/2001

	Rates	Fringes
MIDDLESEX COUNTY (Area South and West of a line extending East from the Raritan River along the Philadelphia and Reading Railroad to Shelton Rd, South on Shelton Rd to Lincoln Hwy to Vineyard Rd to Old Post Rd, along Old Post Rd to Mill Rd, along Mill Rd, along Mill Rd to the Raritan River, along Raritan River to South River, along South River to the Southern boundary of the Borough of South River, along this boundary to the Cranbury South River Turnpike, along this road continuing on to Washington Rd and Maplewood Ave in Cranbury to Scott Ave, along Scott Ave to Main St, on Main St and the turnpike to Millstone River)		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LINE CONSTRUCTION:

Linemen	33.56	45.75%
Cable Splicer	37.59	45.75%
Groundmen	32.77	45.75%
Winch Operator	32.77	45.75%

ELEC0581A 06/01/1994

Rates Fringes

UNION (Area West and North of a line running in a Southerly direction from Morris Ave along Baltusrol Way, Across Baltusrol Country Club to Baltusrol Rd, Along Baltusrol Rd and Summit Lane to Mountainside Borough and long New Providence Rd to and along Mountainside Borough line, to and along Washington Valley Rd to and North along Diamond Hill Rd to and West on Mountain Ave in New Providence Borough, to the Somerset County Line), AND SOMERSET (Area North of a line following Mountain Ave from the Union County line West to Hillcrest Ave in in Union Village, North on Hillcrest Ave to and West on the Passaic River, West on the Dead River, West on Allen Rd, North on Somerville Rd, West on Howell Rd, Southwest on Mount Prospect Road, West on Stillwest Rd, and West on Hall's Bridge Rd to the Hunterdon County Line) COUNTIES

LINE CONSTRUCTION:

Lineman & Equipment Oper	27.32	15.75%+5.18
Line Truck Equipment, and Groundman	20.30	15.75%+5.18

ELEC0581C 08/15/1993

Rates Fringes

SOMERSET (Area North of a line following Mountain Ave from the Union County Line West to Hillcrest Ave in Union Village, North on Hillcrest Ave to and West on the Passaic River, West on the Dead River, West on Allen Rd, North on Somerville Rd, West on Howell Rd, Southwest on Mounbt Prospect Rd, West on Stillwest Rd, and West on Hall's Bridge Rd to the Hunterdon County Line), and UNION (Area West and North of a line running in a Southerly direction from Morris Ave along Baltusrol Way, across Baltusrol Country Club to Baltusrol Rd along Baltusrol Rd and Summit Lane to Mountainside Borough to and along New Providence Rd, to and along Mountainside Borough Line, to and along Washington Valley Rd to and North along Diamond Hill Rd to and West on Mountain Ave in New Providence Borough to the Somerset County Line) COUNTIES

ELECTRICIANS & CABLE SPLICERS	27.77	15.00%+5.22
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ELEC0675B 05/29/1995

Rates Fringes

UNION COUNTY (Area East and North of a line running in a Southerly direction from Morris Ave along Baltusrol Way across Baltusrol Country Club to Baltusrol Rd, along Baltusrol Rd and Summit Lane in Mountainside to and along New Providence Rd to and

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

along the Mountainside line to and along Washington Valley Rd, to and along Diamond Hill Rd to and along Park Ave in Scotch Plains, and continuing along Martine Ave, to and Northeast along Raritan Rd, to and Easterly along the Westfield - Scotch Plains Line, to the Lehigh Valley Railroad and Southwest on the railroad to the county line)

LINE CONSTRUCTION:

Lineman, Cable Splicers,		
Line Equipment Operators	27.98	30.75%+4.25
Groundmen	26.83	30.75%+4.25

ELEC0675C 05/29/1995

	Rates	Fringes
UNION (Area East and North of a line running in a Southerly direction from Morris Ave along Baltusrol Way, across Baltusrol Country Club to Baltusrol Rd and Summit Lane to Mountainside Borough, to and along Washington Valley Road, to and North along Diamond Hill Rd, to and west on Mountain Ave in New Providence Borough, to the Somerset County line), AND SOMERSET (Area North of a line following Mountain Ave from the Union County Line West to Hillcrest Ave in Union Village, North on Hillcrest Ave to and West on the Passaic River, West on the Dead River, West on Allen Rd, North on Somerville Rd, West on Howell Rd, Southwest on Mount		

Prospect Rd, West on Stillwest Rd, and West on Hall's Bridge Rd, to the Hunterdon County Line) COUNTIES

ELECTRICIANS & CABLE SPLICERS	27.98	4.25+30.75%
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ELEV0001A 07/01/1994

	Rates	Fringes
ELEVATOR MECHANICS:		
Construction	22.59	5.22+A+B+C
Modernization	15.94	3.69+A+B+C

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day
- B. Employer contributes \$8.00 per day per employee to annuity fund
- C. Employee with 6 months but less than 5 years of service receive 2 weeks vacation, and 3 weeks vacaation for 5 years or more of service

ENGI0825C 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS TANK ERECTION:		
GROUP 1	33.61	15.65+A+B
GROUP 2	32.77	15.65+A+B

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3	34.75	15.65+A+B
GROUP 4	30.68	15.65+A+B
GROUP 5	25.47	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday
Memorial Day; Independence Day; Labor Day; Veteran's Day,
Thanksgiving Day; and Christmas Day.
- B. Employee receives 20% premium pay for hazardous waste work.

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers--on all Cranes, derricks, etc.
with booms including jib 140 ft. or more above the ground.

GROUP 2: Operating Engineers--on all equipment, including
cranes derricks, etc. with booms including jib, less than 140
ft. above the ground.

GROUP 3: Helicopters--Pilot.

GROUP 4: Air compressors, welding machines and generators (gas,
diesel, or electrical driven equipment and sources of power from
a permanent plant, i.e., steam, compressed air, hydraulic or
other power, for the operating of any machine or automatic tools
used in the erection, alteration, repair and dismantling of
tanks and any and all "DUAL PURPOSE" trucks used on the
construction job site.

GROUP 5: Oiler.

ENGI0825D 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS: [STEEL ERECTION]:		
GROUP 1	33.89	15.65+A+B
GROUP 2	32.98	15.65+A+B
GROUP 3	30.69	15.65+A+B
GROUP 4	28.03	15.65+A+B
GROUP 5	26.50	15.65+A+B
GROUP 6	24.74	15.65+A+B
GROUP 7	35.25	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Washington's Birthday,
Memorial Day, Independence Day, Labor Day, Veteran's Day,
Thanksgiving Day, and Christmas Day.
- B. Employees receive 20% premium pay for hazardous waste work.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS
[STEEL ERECTION]

GROUP 1: Cranes - (all cranes, land or floating with booms
including job 140 ft. and over, above ground); derricks-(all
derricks, land or floating with boom including jib 140 ft.

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and over, above ground).

GROUP 2: Cranes - (all cranes, land or floating with booms including jib less than 140 ft. above ground); derricks (all derricks, land or floating with booms including jib, less than 140 ft. above ground).

GROUP 3: "A" frame; cherry pickers 10 tons and under; hoists; all types hoists shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, or any other similar type hoisting machines, portable or stationary, except Chicago boom type; jacks-screw air hydraulic power operated unit console type (not hand jack or pile load test type) side booms.

GROUP 4: Aerial platform used hoist; compressor, 2 or 3 in battery; elevators or house cars; conveyors and tugger hoists; fireman; forklift; generators, 2 or 3 maintenance-utility man; rod bending machine (power); welding machines--(gas or electric, 2 or 3 in battery, including diesels); captain power boats; tug master power boats.

GROUP 5: Compressor, single, welding machine, single, gas, electric converters of any type, diesel; welding system multiple (rectifier transformer type); generator, single.

GROUP 6: Oiler staddle carrier.

GROUP 7: Helicopter pilot.

ENGI0825E 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
OILOSTATIC MAINLINES & TRANSPORTATION PIPELINES:		
GROUP 1	31.75	15.65+A+B
GROUP 2	30.10	15.65+A+B
GROUP 3	27.96	15.65+A+B
GROUP 4	26.46	15.65+A+B
GROUP 5	24.74	15.65+A+B
GROUP 6	33.68	15.65+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday, Memorial Day; Independence Day; Labor Day; Veteran's Day, Thanksgiving Day; and Christmas Day
- B. Employee receives 20% premium pay for hazardous waste work.

OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINES
CLASSIFICATIONS

GROUP 1: Backhoe; cranes (all types); draglines; front-end loaders (5 yds. and over); gradalls; scooper (loader and shovel); koehring and trench machines.

GROUP 2: "A" frame; backhoe (combination hoe loader); boring and

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drilling machines; ditching machine, small; ditchwitch or similar type; fork lifts; front end loaders (2 yds and over but less than 5 yds.); graders, finish (fine); hydraulic cranes, 10 tons and under (over 10 tons - crane rate applies); side booms; and winch trucks (hoisting).

GROUP 3: Backfiller; brooms and sweepers; bulldozers; compressors (2 or 3 in battery); front-end loaders (under 2 yds.); generators; giraffe grinders; graders and motor patrols; mechanic; pipe bending machine (power); tractors; water and sprinkler trucks, welder and repair mechanic.

GROUP 4: Compressor (single); dope pots (mechanical with or without pump); dust collectors; farm tractors; pumps (4 in. suction and over); pumps (2 or less than 4 in. suction); pumps; diesel engine and hydraulic (immaterial or power); welding machines; gas or electric converters of any type, single; welding machines, gas or electric converters of any type, 2 or 3 in battery multiple welders; wellpoint systems (including installation and maintenance).

GROUP 5: Oiler, grease, gas, fuel and supply trucks and tire repair and maintenance.

GROUP 6: Helicopter-pilot.

 ENGI0825M 07/01/2000

	Rates	Fringes
BUILDING CONSTRUCTION PROJECTS; HEAVY, HIGHWAY, ROAD, STREET AND SEWER PROJECTS:		

POWER EQUIPMENT OPERATORS

GROUP 1	31.12	15.65+A+B
GROUP 2	29.53	15.65+A+B
GROUP 3	27.62	15.65+A+B
GROUP 4	25.99	15.65+A+B
GROUP 5	24.28	15.65+A+B
GROUP 6	32.94	15.65+A+B

FOOTNOTES:

- A. New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day, plus Washington's Birthday and Veterans Day.
- B. Employee receives 20% premium pay for hazardous waste work.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Autograde - combination subgrader; base metal spreader and 7 base trimmer (CMI and similar types); autograde placer, trimmer, spreader combination (CMI and similar types); autograde slipform paver (CMI and similar types); backhoe; central power plants (all types); concrete paving machines; cranes (all types, including overhead and straddle travelling type); cranes; gantry; derricks (land or floating); drillmaster, quarrymaster (down the hole drill) rotary drill; self propelled hydraulic drill; self-

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powered drill; dragline; elevator graders; front end loaders (5 yds. and over); gradalls; grader; raygo; locomotive (large); mucking machines; pavement and concrete breaker, i.e.; superhammer and hoe ram; pile driver; length of boom including length of leads, shall determine premium rate applicable; roadway surface grinder; scooper (loader and shovel); shovels; tree chopper with boom; trench machines.

GROUP 2: "A" frames backhoe (combination); boom attachment on loaders (rate based on size of bucket) not applicable to pipehook, boring and drilling machines; brush chopper; shredder and tree shredder; tree shedder; cableways; carryalls; concrete pump; concrete pumping system; pumpcrete and similar types; conveyors, 125 ft. and over; drill doctor including dust collector, maintenance); front end loaders (2 yds. but less than 5 yds.); graders (finisher); groove cutting machine (ride on type); header planer; hoists; (all types hoists, shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete brick shaft caisson, snorkel roof, and/or any other similar type hoisting machines, portable or stationary, except Chicago boom type); hoists (Chicago boom type); hydraulic cranes, 10 tons and under; hydro-axle; jacks screw air hydraulic power operated unit or console type (not hand jack or pile load test type); log skidder; pans; pavers (all concrete; pumpcrete machines; squeezecrete and concrete pumping (regardless of size); scrapers; side booms; straddle carrier; ross and similar types; winch truck (hoisting).

GROUP 3: Asphalt curbing machine; asphalt plant engineer; asphalt spreader; autograder tube finisher and texturing machine (CMI and similar types); autograde curercrete machine (CMI and similar types); autograde curb trimmer and sidewalk; shoulder; slipform (CMI and similar types); bar bending machines (power); batchers; batching plant and crusher on site; belt conveyor systems; boom type skimmer machines, bridge deck finisher; bulldozers (all); car dumpers (railroad); compressor and blower type units (used independently or mounted on dual purposes trucks, on job site or in conjunction with job site, in loading and unloading of concrete, cement, fly ash, instancrete, or similar type materials); compressor (2 or 3) (battery); concrete finishing machines; concrete saws and cutters (ride on type); concrete spreaders; hetzel; rexomatic and similar types; concrete vibrators; conveyors; under 125 ft.; crushing machines; ditching machine; small (ditchwitch or similar type); dope pots (mechanical with or without pump); dumpsters elevators fireman; fork lifts (economobile; lull and similar types of equipment); front end loaders (1 yd. and over but less than 2 yds.); generators (2 or 3) in battery; giraffe grinders; graders and motor patrols; gunnite machines (excluding nozzle); hammer vibratory (in conjunction with generator); hoist (roof, tugger, aerial platform hoist and house cars); hoppers; Hopper doors (power operated); ladders (motorized); laddervator; locomotive; dinky type; maintenance; utility man; mechanics; mixers (except paving mixers); motor patrols and graders; pavement breakers, small; self-propelled ride on type (also maintaining compressor or hydraulic unit); pavement breaker; truck mounted; pipe bending machine (power); roller; black top; scales; power; seaman

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pulverizing mixer; shoulder widener; silos; skimmer machines (boom type); steel cutting machine; services and maintaining; tractors; tug captain; vibrating plants (used in conjunction with unloading); welder and repair mechanics, concrete cleaning/decontamination machine operator, directional boring machine, heavy equipment robotics operator/technician, master environmental maintenance technician, ultra high pressure waterjet cutting tool system operator/maintenance technician vacuum blasting machine operator/maintenance technician.

GROUP 4: Brooms and sweepers, chippers, compressor (single), concrete spreaders (small type), conveyor loaders (not including elevator graders), engines, large diesel (1620 H.P.) and staging pump, farm tractors; fertilizing equipment (operation and maintenance) fine grade machine (small type); form line graders (small type); front loader (under 1 yd.); generator (single); grease, gas, fuel and oil supply trucks; heaters (nelson or other type including propane, natural gas or flow-type units); lights; portable generating light plants; mixers; concrete small; mulching equipment (operation and maintenance) pumps (4 inch suction and over including submersible pumps); pumps (2 or less than 4" suction and over including submersible pumps); pumps (diesel engine and hydraulic) immaterial of power road finishing machines (small type); rollers; grade; fill or stone base; seeding equipment (operation and maintenance of); sprinkler and water pump trucks steam jennies and biolers, stone spreader; tamping machines vibrating ride-on; temporary heating plant (nelson or other type, including propane, natural gas or flow type units); water and sprinkler trucks; welding machines (gas, diesel, and/or electric converters of any type, single; two or three in a battery); welding systems, multiple (rectifier transformer type); wellpoint systems.

GROUP 5: Oiler.

GROUP 6: Helicopter pilot.

 IRON0011D 07/01/2000

	Rates	Fringes
BERGEN, ESSEX, HUDSON, HUNTERDON (Western half), MIDDLESEX (North half), MORRIS, PASSAIC, SOMERSET (North Half), SUSSEX AND UNION COUNTIES		

IRONWORKERS:

Structural	27.28	22.15
Reinforcing	25.78	22.15

IRON0036C 07/01/2000

	Rates	Fringes
WARREN COUNTY		

Projects under \$25 million:

IRONWORKERS; STRUCTURAL, REINFORCING AND ORNAMENTAL	23.63	12.94
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CLASS B All Laborers not listed in Class A or C.

CLASS C Laborers doing Janitorial type light clean up work associated with the turnover of the project to the owner All Flagman, and those manning temporary heat of all types.

LABO0156B 05/01/2001

Rates Fringes

MIDDLESEX (Remainder), and SOMERSET (East Millstone and Franklin Townships) COUNTIES:

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0232B 05/01/2001

Rates Fringes

SOMERSET COUNTY (Bernardsville,Peapack, Gladstone, Far Hills, Bernards, and Bedminster Twps):

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man

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on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0239C 05/01/2001

Rates Fringes

PASSAIC COUNTY (Twps or Boroughs of Passaic, Garfield, Lodi, Wallington, Delawanna, Allwood, Athenia, Clifton to Piaget Ave, Paterson, Albion Place, Lettle Falls, Totowa, West Paterson, Wayne Hawthorne, Pompton, Haledon, West Milford, Ringwood, Bloomingdale, East Paterson to the Garfield boundary line)

LABORERS BUILDING CONSTRUCTION:

GROUP 1	22.45	11.25
GROUP 2	21.95	11.25
GROUP 3	18.66	11.25

GROUP 1-Specialist laborer classification including jack hammer, tamper, motorized tampers and compactors, street cleaning machines, scaffold builder, hydro demolition equipment, all types of motorized fork lifts, riding motor buggy operator, conveyor operator, Bobcat operator, mortar man, burners, nozzle man on gunite work, Mortar man shall include all laborers engaged in any mode of mixing aggregate by hand or mechabical means with the exception of silo work.

GROUP 2-Basic laborer's rate and includes all work not included in GROUP 1 or GROUP 3.

GROUP 3-Laborers doing janitorial- type light clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0346B 05/01/2001

Rates Fringes

BERGEN COUNTY (Cliffside; Borough of Cliffside Park; Borough of Fort Lee South of Central Blvd; Borough of Palisades Park South of Central Blvd; Borough of Ridgefield; Borough of Edgewater; Borough of FAirview; Hackensack; City of Hackensack; Hasbrouck Heights; Little Ferry; South Hackensack; Ridgefield Park; Bogota; Teaneck Twp. West of Teaneck Rd. and South of Fort Lee Rd.; Maywood; Saddle Brook Twp; Borough of Paramus East of Sprout Brook; Borough of River Edge; New Milford; Teterboro; Bendix; Tochell Park; Englewood; City of Englewood; Borough of Dumont; Borough of Bergenfield; Borough of Palisades Park North of

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Central Blvd. to Edgewater; Fort Lee to the Hudson River; Borough of Fort Lee North of Central Blvd.; Twp. of Teaneck, East of Teaneck Rd. and North of Fort Lee Rd.; Borough of Leonia; Borough of Englewood Cliffs; Borough of Tenafly; Borough of Cresskill; Borough of Demarest; Borough of Closter; Borough of Oradell; Borough of Montvale; Borough of Woodcliff Lake; Borough of Park Ridge; Borough of Hillsdale; Twp. of Washington; Borough of Westwood; Borough of Emerson; Borough of Haworth; Borough of Alpine; Borough of Rockleigh; Borough of Norwood; Borough of Harrington Park; Borough of Old Tappan; Borough of Northvale; Township of Rivervale; Lyndhurst; Rutherford; East Rutherford; Wood-Ridge; Carlton; Carlstadt; North Arlington; Moonachie; Ridgewood; Village of Ridgewood; Borough of Fair Lawn; Borough of Glen Rock; Borough of Hohokus; Borough of Saddle River; Borough of Upper Saddle River; Borough of Allendale; Borough of Ramsey; Borough of Waldwick; Borough of Midland Park; Borough of Oakland; Borough of Franklin Lakes; Twp. of Wyckoff; Twp. of Hohokus; Borough of Paramus except East of Sprout Brook; and Borough of MAhwah)

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0394C 05/01/2001

	Rates	Fringes
UNION COUNTY:		

BUILDING CONSTRUCTION:

LABORERS:

GROUP 1	22.45	11.25
GROUP 2	21.95	11.25
GROUP 3	18.66	11.25

GROUP 1-Specialist laborer classification including jack

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hammer, tamper, motorized tampers and compactors, street cleaning machines, scaffold builder, hydro demolition equipment, all types of motorized fork lifts, riding motor buggy operator, conveyor operator, Bobcat operator, mortar man, burners, nozzle men on gunite work. Mortar men shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo fed.

GROUP 2-Basic laborer's rate and includes all work not included in GROUP 1 or GROUP 3.

GROUP 3-Laborers are laborers doing, janitorial-type light clean-up work associated with the turnover of the project or part of a project to the owner, and all flagman, watchman, firewatch personnel, and those manning temporary heat of all types.

LABO0472B 03/01/2000

	Rates	Fringes
LABORERS [FREE AIR TUNNEL]:		
GROUP 1	27.35	10.30+A
GROUP 2	23.95	10.30+A
GROUP 3	23.80	10.30+A
GROUP 4	23.30	10.30+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day; Washington's Birthday, Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day; Presidential Election Day; and Veterans Day; provided the employee works on 3 days for the same Employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABORERS CLASSIFICATIONS
[FREE AIR TUNNEL]

GROUP 1: Blasters

GROUP 2: Skilled men (including miners; drill runners; iron men mainrenance men; conveyor men; safety miners; riggers; block layers; cement finishers; rodmen; caulkers; powder Ccarrier; all other skilled men)

GROUP 3: Semi-skilled men (including chuck tenders; trackmen; nippers; brakemen; derail men; cable men; hose men; grout men; gravel men; form men; bell or signal men (top or bottom); form workers and movers; concrete workers; shaft men; tunnel laborers; all other semi-skilled men)

GROUP 4: All other top laborers

LABO0472E 03/01/2001

	Rates	Fringes
LABORERS HEAVY AND HIGHWAY CONSTRUCTION:		

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GROUP 1	23.70	10.65+A
GROUP 2	24.00	10.65+A
GROUP 3	24.20	10.65+A
GROUP 4	24.40	10.65+A
GROUP 5	24.65	10.65+A
GROUP 6	28.20	10.65+A
GROUP 7a	26.70	10.65+A
GROUP 7b	24.70	10.65+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day; Presidential Election Day; and Veteran's Day; provided the employee works on 3 days for the same Employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABORERS CLASSIFICATIONS HEAVY & HIGHWAY

GROUP 1: Common laborers; landscape laborers; railroad track laborers; pitmen and dumpmen; waterproofing; rakers and tampers on cold patch work and wrapping and coating all pipe Asphalt Laborers:

GROUP 2: Powder carriers and magazine tenders; signalmen Asphalt Raker, & Asphalt Screedman

GROUP 3: Sewer pipe; laser men; conduit and duct line layers; jackhammer; chipping hammers; pavement breakers; power buggies; concrete cutters, asphalt cutters; sheet hammer and tree cutter operators; sandblasting, cutting, burning, Power Tool Operator, and such other power tools used to perform work usually done manually by laborers

GROUP 4: Wagon drill operator; timberman; drill master

GROUP 5: Finisher; form setter; rammer; paver; gunite nozzle man and stone cutter; Catch Basin or Inlet Builder Manhole

GROUP 6: Blaster

GROUP 7a:Hazardous waste laborer required to wear level A,B, or C personal protection.

GROUP 7b:Certified laborer working a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A.B. or C personal protection.

LABO0502B 05/01/2001

ESSEX COUNTY (City of East Orange, Twps of South Orange and Maplewood, Cities of Orange and West Orange):

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LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0526C 05/01/2001

	Rates	Fringes
MORRIS COUNTY (Remainder):		

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0569B 05/01/2001

	Rates	Fringes
ATTACHMENT J-11	Page 502	

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HUNTERDON AND WARREN COUNTIES:

LABORERS BUILDING CONSTRUCTION:

CLASS A	22.45	11.25
CLASS B	21.95	11.25
CLASS C	18.66	11.25

DEFINATION OF LABORERS:

CLASS A-Jack Hammer, Tamper, Motorized Tampers and Compactors, Street Cleaning Machines, Scaffold Builder, Hydro Demolition Equipment, All types of Motorized Fork Lifts, Riding Motor Buggy Operator, Bobcat Operator, Mortar Man, Burners, Nozzle Man on Gunite work.

CLASS B-All Laborers not listed in Class A or C.

CLASS C-Laborers doing Janitorial- type light clean up work associated with the turnover of the project to the owner All Flagman, and those manning tempory heat of all types.

LABO0694B 05/01/2001

Rates Fringes

ESSEX COUNTY (Montclair):

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyer operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0711B 05/01/2001

Rates Fringes

MORRIS COUNTY (Morristown, Morris Twp., Morris Plains,Mendham, Ralston, Chester, Brookside, Flanders, Ironia, Mount Freedom, Mount Tabor, Parsippany, Troy Hills, Pine Brook,Ced Knools, Whippany, Hanover Twp. and Long Valley):

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LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0779B 05/01/2001

Rates Fringes

SOMERSET COUNTY (Bridgewater,Branchburg, Raritan, Bound Brook, Somerville, Manville, Hillsboro, Millstone, Montgomery and Rocky Hill Twp.):

LABORERS:

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

LABO0913B 05/01/2001

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Rates Fringes

MORRIS (Jefferson, Rockaway, Mount Arlington, Rockaway Borough, Wharton, Mine Hill, Dover, Netcong, Roxbury, Mount Oliver, Randolph, Boonton, Boonton Twp., Montville, Lincoln Park Borough, Butler, Kinnelon Borough, Pin Brook, Towaco, Danville, Mountain Lakes, Pequannock, Pompton Plains, Riverdale Borough Twps) AND SUSSEX COUNTIES

LABORERS BUILDING CONSTRUCTION:

Class A Laborer:	22.45	11.25
Class B Laborer:	21.95	11.25
Class C Laborer:	18.66	11.25

Class A Laborer: Jack Hammer, tamper, motorized tampers and compactors, street cleaning machines, scaffold builder, hydro demolition equipment, all types of motorized fork lifts, bobcat operator, riding motor buggy operator, conveyor operator mortar man (except silo feed operations), burners, & nozzle man on gunnite work.

Class B Laborer: All laborers not listed in Class A.

Class C Laborer: Laborers doing Janitorial type light clean up work, associated with the turnover of the project to the owner All Flagman, and those manning temporary heat of all types.

LABO1030A 04/01/2001

Rates Fringes

LABORERS: (The removal, abatement, enclosure and decontamination of personal protective equipment, chemical protective clothing and machinery relating to asbestos and/or toxic and hazardous waste of materials which shall include but not necessarily be limited to: the erection, moving, servicing and dismantling to all enclosures, scaffolding, barricades, and the operation of all tools and equipment normally used in the removal or abatement of asbestos and toxic and hazardous waste or materials, the labeling, bagging, cartoning, crating, or other packaging of materials for disposal; and the clean up of the work site and all other work incidental to the removal, abatement, encapsulation, enclosure, and decontamination of asbestos or toxic and hazardous waste materials; and in addition, all work tasks involved in the maintenance and operation of energy resource recover plants (co-generation plants).)

LABORERS	21.85	10.12
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LABO1153B 05/01/2001

Rates Fringes

ESSEX COUNTY (Remainder), AND HUDSON (Kearny, East Newark and Harrison):

LABORERS:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Group 1	22.45	11.25
Group 2	21.95	11.25
Group 3	18.66	11.25

Group 1-Jack Hammers,Tampers,Motorized Tampers and Compactors,Street Cleaning Machines,Scaffold Builder,Hydro Demolition Equipment, all types of Motorized fork lifts riding Motor Buggy operator,Conveyor operator, Bobcat operator,Mortar Man,Burners, Nozzle man on gunite work, Mortar Man shall include all laborers engaged in any mode of mixing aggregate by hand or mechanical means with the exception of silo work.

Group 2-Basic laborer's rate and includes all work not included in Group 1 or Group 3

2.Group 3-Laborers doing janitorial-type clean-up work associated with the turnover of the project or part of a project to the owner.

PAIN0711D	05/01/2000		
		Rates	Fringes
PAINTERS:			
NEW:			
Painters		28.75	2.55+27%
Paperhangers		28.75	2.55+27%
Spray,Sandblast,High Work		31.25	2.55+27%
Bridge		31.25	2.55+27%
REPAINT:			
Painters		22.00	2.55+27%
Spray,sandblast,High Work		24.00	2.55+27%

PAIN0711F	05/01/2000		
		Rates	Fringes
GLAZIERS		28.75	10.30
GLAZIERS-HIGH WORK		29.75	10.30

PAIN0711J	08/01/1999		
		Rates	Fringes
DRYWALL FINISHERS & TAPERS		28.25	11.23

PLAS0008M	05/01/2000		
		Rates	Fringes
HUNTERDON,MIDDLESEX,& SOMERSET COUNTIES:			
PLASTERERS		27.15	12.55

PLUM0009C	03/01/2001		
		Rates	Fringes
AIR CONDITIONING & REFRIGERATION MECHANIC			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Installation of refrigeration equipment for any type of building where the combined compressor tonnage does not exceed 5 tons, Installation of water-cooled air conditioning that does not exceed 10 tons (includes the piping of compenent system and the erection ofthe water tower), Installation of air-cooled air conditioning that does not exceed 15 tons

	23.81	9.09+A
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FOOTNOTE:

- A. Paid Holidays: New Year's Day, Washington's Birthday, Memorial Day, Independence Labor Day, Thanksgiving Day, Christmas Day, plus Washington's Birthday and Veterans Day.

PLUM0009H 07/01/2000

	Rates	Fringes
HUNTERDON (Remainder), MERCER, MIDDLESEX (Excluding Dunellen, Borough, East Bound Brook, Middlesex, New Market, Oak Tree, Piscataway Twp and South Plainfield), AND SOMERSET (Remainder) COUNTIES		
PLUMBERS & PIPEFITTERS	31.98	14.30

PLUM0014B 05/01/2000

	Rates	Fringes
BERGEN, HUDSON (Bayonne, Guttenberg, Hoboken, Jersey City, North Bergen, Secaucus, Union City, Weehawken, West New York), MORRIS (From Mount Olive straight across Randolph down to the Essex border), PASSAIC, SUSSEX, AND WARREN (Northern half) COUNTIES		
PLUMBERS	32.53	13.95

PLUM0024A 05/01/2000

	Rates	Fringes
Essex:		
HUDSON (East Newark, Harrison, & Kearney only);		
HUNTERDON (Alexandria, Alexandria Twp., Alexauken, Allens Corner, Allerton, Amsterdam, Annadale, Anthony, Baptistown, Bellewood, Bethlehem, Twp., Bissell, Bloomsbury, Bunnvale, Bottonwood Corners, Centerville, Charlestown, Cherryville, Clinton, Clinton Twp., Cokebury, Coles Mills, Croton, Delaware Twp., Dilts Corner East Amwell Twp., Everittstown, Fairmount, Farmersville, Franklin Twp., Frenchtown, Glen Gardner, Grandin, Hamden, Hampton, Higginville, High Bridge, Hoffmans, Holland Twp., Highesville, Johnsons, Jutland, King, Kingwood Twp., Klinesville, Landsdowne, Lebanon, Lebanon Twp., Little Brook, Little Neck, Little York, Ludlow, McPherson, Milford, Moutainville, Mount Joy, Mount		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Pleasant, North Salem, Muirshead, New Germantown, New Hampton, Newport, Norton, Oak Grove, Oldwick, Palmyra, Palmyra Corners, Pattenburg, Perryville, Pittstown, Pleasant Run, Polktown, Potterstown, Quakertown, Raritan Twp., Readington, Readington Twp., Reaville, Rileyville, Riverside, Rockafellows, Rowland Mills Sidney, Snyderstown, Spring Mills, Stanton, Stanton Station Sunnyside, Sutton, Tewksbury, Tewksbury Twp., The Point, Three Bridges, Treasure Island, Tumble, Union, Union Twp., Unionville Van Syckle, Warren Paper Mills, Wertsville, West End, West Portal White House, Whitehouse Station, Woodglen).

MIDDLESEX (Dunellen Borough, East Bound Brook, Middlesex, New Market, Oak Tree, Piscataway Twp., & South Plainfield only).

MORRIS (Bartley, Berkshire Valley, Bertland Island, Brookside, Chatham, Chatham Twp., Chester, Chester Twp., Cooks Bridge, Crestmoore, Gillette, Harding Twp., Ironia, Logansville, Long Valley, Malapardis, Mendham, Mendham Twp., Middle Valley, Millington, Milltown, Milton, Mount Freesom, Mount Olive Twp., Mount Paul, Myerstown, Maughright, New Vernon, Parker, Passaic Twp, Pleasant Grove, Ralston, Schooleys, Mount Stanley, Stephensonburg, Stirling, & Washint Twp.)

SOMERSET (Anwell, Basking Ridge, Bedminster, Bedminster Twp., Bernards Twp., Bernardsville, Blaziers Corner, Bound Brook, Bradley Gardens, Branchburg Twp., Bridgewater Twp., Burnt Mill, Centerville, Chimney Rock, Claver Hill, Dutchtown, Far Hills Borough, FINDERNE, Flagstown, Frank Fort, Franklin Park, Franklin Twp., Gallia, Gladstone, Greater Cross Roads, Hamilton, Harmony, Harmony Colony, Higgins Mills, Hillsborough Twp., Lamington, Lanes Crossing, Liberty Corners, Lyons, Madisonville, Manville, Manville Borough, Martinsville, Mettler, Millstone, Mine Brook, Montgomery, Montgomery Twp., Mount Bethel, Mount Horeb, Neshanic, Neshanic Station, North Branch, North Branch Depot, North Plainfield, Peapack, Peapack-Gladstone, Plainville Plukemin, Pottersville, Raritan, Ravine Lake, Rock Mill, Round Top, Roycefield, Royce Valley, Seeley Mills, Smalleytown, Somerset, Somerville, Stone House, Sunset Lake, Union Village, Vliettown, Watchung, West Millington, Weston, White Bridge, Woodfern, Zarepat, & Zion).

UNION & WARREN (Anderson, Asbury, Beattystown, Brainards, Brass Castle, Broadway, Buttzville, Carpetersville, Changewater, Cornish, Finesville, Foul Rift, Franklin Twp., Greenwich Twp., Harmony, Harmony Station, Harmony Twp., Haszen, Hope Twp., Hutchinson, Karrville, Kennedy, Lopatcong, Lopatcong Twp., Lower Harmony, Mansfield Twp., Montana, New Village, Oxford, Oxford Twp., Pequest, Pleasant Valley, Port Colden, Port Murray, Riegelsville, Rockport, Roxbury, Roxburgh, Springtown, Stewartsville, Still Valley, Vulcanite, Warren Glen, Washington, Washington Twp., White Top, & Phillipsburg Twp.) COUNTIES:

PLUMBERS (Excludes Somerset- Bldg) 32.78 13.50.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Rates Fringes
 BERGEN, HUDSON, MORRIS (Remainder), PASSAIC, SUSSEX, AND WARREN
 (Remainder) COUNTIES

PIPEFITTERS 32.91 14.72

PLUM0475B 05/01/2000

Rates Fringes
 ESSEX; HUNTERDON (Alexandria, Alexandria Twp, Alexauken, Allens
 Corner, Allertown, Amsterdam, Annandale, Anthony, Baptistown,
 Bellewood, Bethlehem Twp, Bissell, Bloomsbury, Bunnvale,
 Buttonwood Corners, Centerville, Charlestown, Cherryville,
 Clinton, Cokebury, Coles Mills, Croton, Delaware Twp, Dilts
 Corner, East Amwell Twp, Evittstown, Fairmount, Farmersville,
 Franklin Twp, Frenchtown, Glen Gardner, Grandin, Hamden, Hampton,
 Higginsville, High Bridge, Hoffmans, Holland Twp, Hughesville,
 Johnsons, Jutland, King, Kingwood Twp, Klinesville, Landsdowne,
 Lebanon, Lebanon Twp, Little Brooke, Little Neck, Little York,
 Ludlow, McPherson, Milford, Mountainville, Mount Joy, Mount
 Pleasant, Mount Salem, Muirshead, New Germantown, New Hampton,
 Newport, Norton, Oak Grove, Oldwick, Palmyra, Palmyra Corners,
 Pattenburg, Perryville, Pittstown, Pleasant Run, Polktown,
 Potterstown, Quakertown, Raritan Twp, Readington Twp); AND WARREN
 (Phillipsburg Twp) COUNTIES

PIPEFITTERS 30.94 15.31

ROOF0004B 06/01/1996

Rates Fringes
 ESSEX; HUDSON (West of the Hackensack River); MIDDLESEX
 (Remainder); MORRIS; SOMERSET (Remainder) SUSSEX; UNION; AND
 WARREN COUNTIES

ROOFERS:

Roofer, Composition,
 Damp & Waterproofing,
 Slate & Tile 24.22 11.75

ROOF0004D 11/27/1994

Rates Fringes
 HUNTERDON COUNTY:
 ROOFERS:
 Shingle, slate and tile 14.25 3.02
 All other work 21.95 6.53 + A

FOOTNOTE:

A. Employer contribution of \$509.60 per month per
 employee to Health and Welfare Funds.

* ROOF0008F 07/01/2001

Rates Fringes
 HUDSON COUNTY (Remainder)

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOFERS:

Roofers, Composition, Damp and Waterproofing	29.08	18.78
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ROOF0010B 06/01/2001	Rates	Fringes
BERGEN AND PASSAIC COUNTIES		
ROOFERS, COMPOSITION	28.75	10.30

SFNJ0669A 04/01/2001	Rates	Fringes
HUNTERDON; MIDDLESEX (Remainder); AND WARREN COUNTIES		
SPRINKLER FITTERS	31.30	6.00

* SFNJ0696B 07/01/2001	Rates	Fringes
BERGEN, ESSEX, HUDSON, MIDDLESEX (New Brunswick, Milltown, Old Bridge, Browntown and North thereof),MORRIS, PASSAIC, SOMERSET (Bernardsville, Basking Ridge, Mine Brook, Far Hills, Lyons, Mount Bethel, Watchung, North Plainfield Martinville and Somerville), AND UNION COUNTIES		
SPRINKLER FITTER	36.95	10.45

SHEE0025C 06/01/2000	Rates	Fringes
BERGEN, ESSEX, HUDSON, MORRIS, PASSAIC, SOMERSET, SUSSEX, & UNION COUNTIES		
SHEET METAL WORKERS	26.92	16.12

SHEE0027A 06/01/2000	Rates	Fringes
HUNTERDON & MIDDLESEX COUNTIES:		
SHEET METAL WORKERS	31.00	15.38

SHEE0028D 06/01/1994	Rates	Fringes
WARREN COUNTY		
SHEET METAL WORKERS	19.42	7.41

TEAM0408B 05/01/1997	Rates	Fringes
ESSEX, MORRIS, AND UNION (Remainder) COUNTIES		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TRUCK DRIVERS:

GROUP 1	24.45	7.01+A
GROUP 2	24.50	7.01+A
GROUP 3	24.60	7.01+A
GROUP 4	24.70	7.01+A

FOOTNOTE:

A. Premium pay for hazardous waste removal: additional \$3.00 per hour if suite-up, otherwise \$1.00 per hour additional.
Paid Holidays: New Year's Day, Washington'd Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee has been assigned to work or "shifts" one day of the calendar week during which the holiday falls.
Employer contribution of \$663.57 per month per employee to Health & Welfare Funds.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on the following type vehicles: Straight dumps, flats, floats, pickups, container haulers, fuel, water sprinkler, road oil, stringer, bead, hot pass, bus dumpcrete, transit mixers, agitator mixer, half truck, witch truck, side-o-matic, dynamite, powder, x-ray, welding, skid, jeep, station wagon, stringer, a-frame, all dual purpose trucks, trucks with mechanical tailgates, asphalt distributor, batch trucks, seeding, mulching, fertilizer, air compressor trucks (in transit), parts chaser, escort, scissor, hi-lift, telescope, concrete breaker, gin pole, stone, sand, asphalt distributor and spreader, nipper, fuel trucks (drivers on fuel trucks including handling of hose and nozzle - entire unit), team drivers, vacuum or vac-all trucks (entire unit), skid truck (debris container - entire unit), concrete mobile trucks (entire unit), expediter (parts chaser), beltcrete trucks, pumpcrete trucks, line truck, reel truck, wreckers, utility trucks, tack trucks, warehousemen, warehouse parts-men, yardmen, lift truck in warehouse, warehouse clerk, parts man, material checker, receivers, shippers, binning men (materials), cardex man, drivers on the following type vehicles: broyhill coal tar epoxy trucks, little ford bituminous distributor, slurry seal truck or vehicle, thiokol track master pickup (swamp cat pickup); bucket loader dump truck and any rubber-tired tractor used in pulling and towing farm wagons and trailers of any description, similar type vehicles, off-site and on-site repair shop

GROUP 2: Drivers on straight 3-axle materials: trucks and floats

GROUP 3: Drivers on all euclid type vehicles: euclids, international harvestors, wabcos, caterpillar, koehring, tractors and wagons, dumpsters, straight, bottom, rear and side dumps, carry-alls and scrapers (not self-loading, loading over the top); water sprinkler trailers; water pulls and similar types of vehicles; drivers on tractors and trailer type vehciles: flat, floats, I-beams, low beds, water sprinkler, bituminous transit mix, road oil, fuel, bottom dump hopper, rear dump, office, shanty, epoxy, asphalt, agitator mixer, mulching, stringer,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

seeding, fertilizing pole, spread, bituminous distributor, water pulls (entire unit) (tractor trailer), reel trailer, and similar types of vehicles

GROUP 4: Winch trailer drivers

TEAM0469C 05/01/2000

HUNTERDON, MIDDLESEX, SOMERSET, UNION (up to Wood Avenue South of Cranford), AND WARREN COUNTIES

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1	26.35	11.835+A
GROUP 2	26.40	11.835+A
GROUP 3	26.50	11.835+A
GROUP 4	26.60	11.835+A

FOOTNOTE:

- A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus Washington's Birthday, Election Day and Veteran's Day, provided that the employee has been assigned to work or "SHIFTS" one day of the calendar week during which the holiday falls.
- \$400.00 per year to Apprenticeship Training Fund.
- \$3.00 per hour premium pay for hazardous waste work.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on the following type vehicles: straight dumps, flats, floats, pickups, container haulers, fuel, water sprinkler, road oil, stringer, bead, hot pass, bus dumpcrete, transit mixers, agitator mixer, half truck, winch truck, side-o-matic, dynamite, powder, x-ray, welding, skid, jeep, station wagon, stringer, A-frame, all dual purpose trucks, trucks with mechanical tailgates, asphalt distributor, batch trucks, seeding, mulching, fertilizer, air compressor trucks (in transit), parts chaser, escort, scissor, hi-lift, telescope, concrete breaker, gin pole, stone, sand, asphalt distributor and spreader, nipper, fuel trucks (drivers on fuel trucks including handling of hose and nozzle - entire unit), team drivers, vacuum or vac-all trucks (entire unit), skid truck (debris contained - entire unit), concrete mobile trucks (entire unit), expediter (parts chaser), beltcrete trucks, pumpcrete trucks, line truck, reel truck, wreckers, utility trucks, tack trucks, warehousemen, warehouse parts-men, yardmen, lift truck in warehouse, drivers on the following type vehicles: Broyhill coal tar epoxy trucks, little ford bituminous distributor, slurry seal truck or vehicle, thiokol track master pickup (swamp cat pickup); bucket loader dump truck and any rubber-tired tractor used in pulling and towing farm wagons and trailers of any description, similar type vehicles, off-site and on-site repair shop

GROUP 2: Drivers on straight 3-axle materials: trucks and floats

GROUP 3: Drivers on all euclid type vehicles: euclids,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

international harvesters, wabcos, caterpillar, koehring, tractors and wagons, dumpsters, straight, bottom, rear and side dumps, carry-alls and scrapers (not self-loading, loading over the top); water sprinkler trailers; water pulls and similar types of vehicles; drivers on tractors and trailer type vehicles: flat, floats, I-beams, low beds, water sprinkler, bituminous transit mix, road oil, fuel, bottom dump hopper, rear dump, office, shanty, epoxy, asphalt, agitator mixer, mulching, stringer, seeding, fertilizing pole, spread, bituminous distributor, water pulls (entire unit) (tractor trailer), reel trailer, and similar types of vehicles

GROUP 4: Winch trailer drivers

TEAM0560C 05/01/1997

	Rates	Fringes
BERGEN, HUDSON AND PASSAIC COUNTIES		
TRUCK DRIVERS:		
GROUP 1	24.45	8.08+A
GROUP 2	24.50	8.08+A
GROUP 3	24.60	8.08+A
GROUP 4	24.70	8.08+A

FOOTNOTE:

- A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day, Christmas Day. \$3.00 per hour premium pay for hazardous work.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on the following type vehicles: straight dumps, flats, floats, pickups, container haulers, fuel, water sprinkler, road oil, stringer, bead, hot pass, bus dumpcrete, transit mixers, agitator mixer, half truck, winch truck, side-o-matic, dynamite, powder, x-ray, welding, skid, jeep, station wagon, stringer, A-frame, all dual purpose trucks, trucks with mechanical tailgates, asphalt distributor, batch trucks, seeding, mulching, fertilizer, air compressor trucks (in transit), parts chaser, escort, scissor, hi-lift, telescope, concrete breaker, gin pole, stone, sand, asphalt distributor and spreader, nipper, fuel trucks (drivers on fuel trucks including handling of hose and nozzle - entire unit), team drivers, vacuum or vac-all trucks (entire unit), skid truck (debris container - entire unit), concrete mobile trucks (entire unit), expediter (parts chaser), beltcrete trucks, pumpcrete trucks, line truck, reel truck, wreckers, utility trucks, tack trucks, warehousemen, warehouse parts-men, yardmen, lift truck in warehouse, warehouse clerk, parts man, material checker, receivers, shippers, binning men (materials), cardex man, drivers on the following type vehicles: broyhill coal tar epoxy trucks, little ford bituminous distributor, slurry seal truck or vehicle, thiokol track master pickup (swamp cat pickup); bucket loader truck and any rubber-

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

tired tractor used in pulling and towing farm wagons and trailers of any description, similar type vehicles, off-site and on-site repair shop

GROUP 2: Drivers on straight 3-axle materials: trucks and floats

GROUP 3: Drivers on all euclid type vehicles: euclids, international harvestors, wabcos, caterpillar, keohring, tractors and wagons, dumpsters, straight, bottom, rear and side dumps, carry-alls and scrapers (not self-loading, loading over the top); water sprinkler trailers; water pulls and similar types of vehicles; drivers on tractors and trailer type vehicles: flat, floats, I-beams, low beds, water sprinkler, bituminous transit mix, road oil, fuel, bottom dump hopper, rear dump, office, shanty, epoxy, asphalt, agitator mixer, mulching, stringer, seeding, fertilizing pole, spread, bituminous distributor, water pulls (entire unit) (tractor trailer), reel trailer, and similar types of vehicles

GROUP 4: Winch trailer drivers

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION NM010001 05/04/01 NM1

General Decision Number NM010001

Superseded General Decision No. NM000001

State: **New Mexico**

Construction Type:

BUILDING

HEAVY

County(ies):

STATEWIDE

STATEWIDE - EXCLUDING EDDY AND LEA COUNTIES FOR BUILDING CONSTR

GENERAL BUILDING AND HEAVY ENGINEERING CONSTRUCTION shall include the construction, alteration, repair and demolition of buildings, including office buildings, warehouses, industrial and commercial buildings, institutional and public buildings, and all air conditioning, conduit, heating and other mechanical and electrical works and site preparation for building or heavy engineering projects under this classification, stadia; and shall include electrical, gas, water, sewer lines, and other such utility construction which are part of projects under this classification and include within the property line or less than five (5) feet from the building or heavy engineering structure, whichever is closer, provided, however, regard to electrical utilities such construction shall include construction from the first attachment of incoming power source without regard to the property line or proximity to the building or the heavy engineering structure; and include construction, alteration, repair and demolition of heavy engineering work such as power generating plants, pump stations, natural gas compressing stations; covered reservoirs and covered sewage and water treatment facilities concrete linings for canals, ditches and channels; concrete dams; earth dams of one million (1,000,000) cubic yards or over; radio towers, ovens, furnaces, kilns, silos, shafts and tunnels (other than highway shafts and tunnels), hydro-electric projects; and well drilling, telephone and electrical transmission lines which are part of **GENERAL BUILDING AND HEAVY ENGINEERING PROJECTS**: mining appurtenances such as tripples, washeries and loading and discharging chutes, and specialized structures for testing, launching and recovering space and other rocket-type missiles.

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/13/2001
3	05/04/2001

COUNTY(ies):

STATEWIDE

ASBE0066D 07/17/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

MARBLE MASONS, TILE LAYERS &
TERRAZZO WORKERS

17.43 3.27

* CARP0092A 10/01/2000

	Rates	Fringes
CARPENTERS, LATHERS, & PILEDRIVERMEN	18.81	3.94

LIGHT COMMERCIAL CONSTRUCTION**	16.25	2.20
**SEE DEFINITION AT THE END OF TRUCK DRIVERS		

MILLWRIGHTS:

ZONE I	21.10	3.94
ZONE II	23.35	3.94

BASING POINTS FOR MILLWRIGHTS ONLY FROM ALBUQUERQUE CITY HALL

ZONE I	0 TO 15 ROAD MILES
ZONE II	15 TO 35 ROAD MILES

ELEC0583B 12/01/2000

	Rates	Fringes
ELECTRICIANS		
Zone I	17.20	4.25%+3.20
Zone II	19.15	4.25%+3.20

CABLE SPLICERS:

Zone I	17.45	4.25%+3.20
Zone II	19.40	4.25%+3.20

Zone 1: The area within a 25 mile radius from the downtown Post Office in El Paso, TX. Ft Bliss and Biggs Field proper to be included in this free zone. The area within a 15 mile radius from the Post Office in Las Cruces, NM and within a 5 mile radius from the Post Office in Alamogordo, Deming and Lordsburg. The area 10 miles East and 10 miles West of Interstate 10 between El Paso, Texas and Las Cruces NM.

Zone 2: Dona Ana, Otero, Luna and Hidalgo Counties (except that area in Zone 1.

ELEC0611B 01/01/2000

Rates Fringes

COMMERCIAL LINE WORK (also applies to switching stations and substations adjacent to power plants):

Bernalillo, Catron, Chaves, Cibola, Colfax, Curry, DeBaca, Grant, Guadalupe, Harding, Lincoln, Los Alamos (USE ZONE 3 RATES), McKinley, Mora, Quay, Rio Arriba, Roosevelt, Sandoval, San Juan, San Miguel, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia & White Sands Missile Range and that portion of Fort Bliss in New Mexico.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

ELEC0611C 01/01/2000

	Rates	Fringes
ELECTRICIANS:		
Bernalillo, Santa Fe, Torrance, DeBaca, Guadalupe, Quay, San Miguel, Mora, Harding, Union, Colfax, Taos, Rio Arriba, Grant, Sandoval, Valencia, Socorro, Catron, McKinley, Sierra, San Juan, Chaves, Curry, Lincoln, Cibola & Roosevelt Counties		
Zone 1		
Electricians	20.55	3.75%+5.60
Cable Splicers	22.61	3.75%+5.60
Zone 2		
Electricians	22.40	3.75%+5.60
Cable Splicers	24.46	3.75%+5.60
Zone 3		
Electricians	23.63	3.75%+5.60
Cable Splicers	25.69	3.75%+5.60
Zone 4		
Electricians	25.89	3.75%+5.60
Cable Splicers	27.95	3.75%+5.60

Basic Wage Rates City	Miles From Main Post Office
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*Albuquerque	25 miles
Santa Fe	10 miles
Las Vegas	8 miles
Farmington	6 miles
Raton	6 miles
Belen	12 miles
Espanola	14 miles
Los Lunas	12 miles
Tucumcari	6 miles
Roswell	12 miles
Ruidoso	12 miles
Portales	12 miles
Carrizozo	12 miles
Clovis	12 miles
Gallup	10 miles

*The eastern edge of the Albuquerque Zone extends no further

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

than the western boundary of the Village of Tjieras.

Zone 2 extending up to twenty (20) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 3 extending up to thirty (30) miles beyond Zone 1, EXCEPT ALBUQUERQUE.

Zone 4 anything beyond thirty (30) miles from Zone 1, EXCEPT ALBUQUERQUE.

FOR ESTABLISHING THE OUTLYING ZONES FROM THE ALBUQUERQUE FREE ZONE ONLY, ZONE 2 SHALL EXTEND UP TO TEN (10) MILES BEYOND ZONE 1, ZONE 3 SHALL EXTEND UP TO TWENTY (20) MILES BEYOND ZONE 1, AND ZONE 4 ANYTHING BEYOND TWENTY (20) MILES FROM ZONE 1.

ELEC0611D 01/01/2000		
	Rates	Fringes
LOS ALAMOS CO.		
ELECTRICIANS	23.63	3.75%+5.60
CABLE SPLICERS	25.69	3.75%+5.60

ELEC0611E 01/01/2000		
	Rates	Fringes
EDDY AND LEA COUNTIES:		
ZONE I		
ELECTRICIANS	19.00	3.75%+5.15
CABLE SPLICERS	19.35	3.75%+5.15
ZONE II		
ELECTRICIANS	19.45	3.75%+5.15
CABLE SPLICERS	19.80	3.75%+5.15
ZONE III		
ELECTRICIANS	19.60	3.75%+5.15
CABLE SPLICERS	19.95	3.75%+5.15
ZONE IV		
ELECTRICIANS	19.85	3.75%+5.15
CABLE SPLICERS	20.20	3.75%+5.15
ZONE I		
SOUNDMEN	16.45	4%+3.45
TECHNICIANS	13.16	4%+3.45
INSTALLERS	10.69	4%+3.45

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ZONE II

SOUNDMEN	16.90	4%+3.45
TECHNICIANS	13.61	4%+3.45
INSTALLERS	11.14	4%+3.45

ZONE III

SOUNDMEN	17.05	4%+3.45
TECHNICIANS	13.76	4%+3.45
INSTALLERS	11.29	4%+3.45

ZONE IV

SOUNDMEN	17.30	4%+3.45
TECHNICIANS	14.01	4%+3.45
INSTALLERS	11.54	4%+3.45

FROM THE MAIN POST OFFICE OF ARTESIA,
CARLSBAD, HOBBS & LOVINGTON, NEW MEXICO

- ZONE I - 0 to 12 miles
- ZONE II - 12 miles to 22 miles
- ZONE III - 22 miles to 40 miles
- ZONE IV - 40 miles and beyond

ELEC0611I 01/01/2000

Rates Fringes
COMMERCIAL LINE WORK (also applies to switching stations adjacent
to power plants):

Eddy and Lea Counties:

Lineman - Technicians:

Zone I	19.00	3.75%+5.15
Zone II	19.45	3.75%+5.15
Zone III	19.60	3.75%+5.15
Zone IV	19.85	3.75%+5.15

Cable Splicers:

Zone I	19.35	3.75%+5.15
Zone II	19.80	3.75%+5.15
Zone III	19.95	3.75%+5.15
Zone IV	20.20	3.75%+5.15

Equipment Op. and Mechanics
(includes Helicopter Op. &
Mechanic):

Zone I	18.05	3.75%+5.15
Zone II	18.50	3.75%+5.15
Zone III	18.65	3.75%+5.15
Zone IV	18.90	3.75%+5.15

Powderman

Zone I	16.53	3.75%+5.15
Zone II	16.98	3.75%+5.15
Zone III	17.13	3.75%+5.15
Zone IV	17.38	3.75%+5.15

Groundman - Jackhammer Op.:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Zone I	13.49	3.75%+5.15
Zone II	13.94	3.75%+5.15
Zone III	14.09	3.75%+5.15
Zone IV	14.34	3.75%+5.15

FROM THE MAIN POST OFFICE OF ARTESIA,
CARLSBAD, HOBBS & LOVINGTON, NEW MEXICO

ZONE I - 0 to 12 miles
 ZONE II - 12 miles to 22 miles
 ZONE III - 22 miles to 40 miles
 ZONE IV - 40 miles and beyond

 ELEC0611Z 01/01/2000

Rates Fringes

COMMERCIAL LINE WORK (ALSO APPLIES TO SWITCHING STATIONS AND
 SUBSTATIONS ADJACENT TO POWER PLANTS):

Dona Ana, Hidalgo, Luna and Otero Cos., exclusive of White Sands
 Missile Range and that portion of Fort Bliss in New
 Mexico

Linemen - Technicians

Zone I	16.85	3.75%+3.30
Zone II	18.80	3.75%+3.30

Cable Splicers

Zone I	17.19	3.75%+3.30
Zone II	19.18	3.75%+3.30

Equipment Op. (includes
 Helicopter Op.):

Zone I	14.66	3.75%+3.30
Zone II	16.36	3.75%+3.30

Equipment Mechanic (includes
 Helicopter Mech.):

Zone I	14.66	3.75%+3.30
Zone II	16.36	3.75%+3.30

Powderman:

Zone I	14.15	3.75%+3.30
Zone II	15.79	3.75%+3.30

Groundman - Jackhammer Op.:

Zone I	11.96	3.75%+3.30
Zone II	13.35	3.75%+3.30

ZONE I:

a. The area within a 25 mile radius from the Downtown Post
 Office in El Paso, Texas. Fort Bliss and Biggs Field Property to
 be included in this Free Zone. Fort Bliss and Biggs Field to be
 defined by official U.S. Government Map

b. The area within a five mile radius of any city, town, or
 municipality within which an employer establishes or maintains
 his permanent place of business.

c. The area within a fifteen mile radius from the Post Office

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

in Las Cruces, New Mexico, and within a five mile radius from the Post Office in Alamogordo, Deming, and Lordsburg, New Mexico.

d. The area ten miles East and ten miles West of Interstate 10, between El Paso, Texas and Las Cruces, New Mexico.

ZONE II: All other areas of the jurisdiction except those specified in Zone I.

ELEV0131A 07/01/2000		
	Rates	Fringes
ELEVATOR CONSTRUCTORS:		
MECHANIC	21.995	6.935+a

FOOTNOTE: a. Under 5 years service 6%; over 5 years service 8%.
 7-Paid Holidays New Years Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day.

ENGI0953C 04/01/2000		
	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
HEAVY CONSTRUCTION:		
ZONE 1:		
GROUP I	14.35	2.95
GROUP II	15.74	2.95
GROUP III	15.89	2.95
GROUP IV	16.10	2.95
GROUP V	16.16	2.95
GROUP VI	16.30	2.95
GROUP VII	16.42	2.95
GROUP VIII	17.86	2.95
ZONE 2:		
GROUP I	16.85	2.95
GROUP II	18.24	2.95
GROUP III	18.39	2.95
GROUP IV	18.60	2.95
GROUP V	18.66	2.95
GROUP VI	18.80	2.95
GROUP VII	18.92	2.95
GROUP VIII	20.36	2.95
ZONE 3:		
GROUP I	18.35	2.95
GROUP II	19.74	2.95
GROUP III	19.89	2.95
GROUP IV	20.10	2.95
GROUP V	20.16	2.95
GROUP VI	20.30	2.95
GROUP VII	20.42	2.95
GROUP VIII	21.86	2.95

SHAFT AND TUNNEL WORK - \$.15 per hour above regular rate.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HAZARDOUS PAY - The following pay shall be applicable for every hour an operating engineer is required by governmental regulations and does wear special equipment for hazardous work at the designated levels. This is applicable in all three zones

LEVEL C - 10% above regular hourly wage
LEVEL B - 10% above regular hourly wage
LEVEL A - 15% above regular hourly wage

ZONE PAY

The reference point for determining zone pay shall be from the intersection of Interstate Highway 25 and Interstate Highway 40 (the Big "I") in Albuquerque.

ZONE I - Albuquerque - 0 to 50 mile radius from the Big "I" shall be a Free Zone

- Farmington - 0 to 15 mile radius of Farmington City Hall shall be a Free Zone

Zone II - Shall be \$2.50 per hour above base pay. Will apply outside of above parameters up to 35 miles

Zone III - Shall be \$1.50 cents per hour above Zone II for a total of \$4.00 per hour and will apply after 35 miles of Zone I's parameters.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP I

Fireman, Oiler Screedman, Scale Operators, Rubber Tired farm type tractor, tractors under 50 hp w/o attachments, Breakman, Concrete Paving Curbing Machine (Bridge-Type).

GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck operator, Air compressor (315 CFM & Over), Pumps (6" & Over), Screening plants, Concrete Mixers (Under 1 CY), Concrete Saw or grinder-span type, 1 Drum Hoist (tugger), Air Tugger, Elevating Belt Type Loaders, Forklift, Lumber Stacker, Tractor Farm Type (under 50 HP w/Attachments), Motorman and Industrial Locomotive op., Winch Truck, Front End Loaders (under 2 CY), Power Plants which Generate Over 15 KW., Welding Machines.

GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters Concrete Mixers, (1 CV & Over), Conc. Paver-Single Drum, Drilling Equip., Motor Grader (rough), Shaft and Tunnel Equipment: (Refrigeration, slusher, jumbo forms), Trenching Machines (all types), Pump crete and gunite machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Space Heaters, Bituminous Finishing Machines, Water Carrier (all types),

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Concrete Cleaning Decontamination Machine Operator, Horizontal Directional Drill Locator.

GROUP IV

Front End Loaders (2 thru 10 CY), Rollers Steel Wheeled-All Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 pushers (35 cents over basic rate), Three bowl scrapers (60 cents over basic rate), Backhoes up to 3/4 yard bucket, Head Oiler (Service Truck Operator).

GROUP V

Hydraulic Cranes-With less than 50 feet of Boom (20 Tons and Under), Concrete Paver-Double Drum, Cat Cranes, Hysters, 2 Drum Hoist, Auto Fine Grade.

GROUP VI

Mucking Machines-All Types

GROUP VII

Steam Engineers, Loader (Front End Over 10 CV) Concrete Pump (Snorkel Type), Concrete batching plants and Asphalt plants, Crushing plants, Hot plants.

GROUP VIII

All Shovel Type Equipment, Cranes, Draglines, Backhoes over a 3/4 yard bucket, Derricks Guy and Stiff Leg, Pipe mobile (No 2 Operator), Piledriver, Hydraulic Cranes (20 Tons & Over), Mine Hoist, Belt Loader ("C.M.I." Type), Boom and Jibs 150 ft. Through 199 ft.-\$.50 per hour above base pay, 200 ft and over-\$1.00 per hour above base pay. Shovel (Wheel Type), Boring Machine (Tunnel or Shaft Mole), Pipe Mobile, Side and swing-boom cats, Motor grader (finish), Mechanic-Welder, Heavy Equipment Robotics Operator/Mechanic, Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Mater Environmental Maintenance Mechanic, Horizontal Directoral Drill Operator.

 ENGI0953E 11/01/2000

Rates Fringes

POWER EQUIPMENT OPERATORS:

BUILDING CONSTRUCTION:

GROUP I	14.94	2.85
GROUP II	16.39	2.85
GROUP III	16.51	2.85
GROUP IV	16.78	2.85
GROUP V	16.90	2.85
GROUP VI	17.04	2.85
GROUP VII	17.13	2.85
GROUP VIII	19.06	2.85

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP I

Fireman, Oiler, Screedman, Scale op. such as Bin-a-Batch,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Rubber Tired Farm Type Tractor, Tractors under 50 hp w/o Attachments, Brakeman, Concrete Curing Machine(Bridge Type).

GROUP II

Rollers, Sheepsfoot or Pneumatic Self-Propelled w/o Dozer, Concrete Conveyor, Service Truck op. (Head Oiler), Air Compressor (600 CFM & Over), Pumps (6" & Over), Screening Plants, Concrete Mixers (Under 1 CY), Concrete Saw or Grinder-Span Type, 1 Drum Hoists, Elevating Belt Type Loaders, Lumber Stacker, Tractor Farm Type(under 50 HP w/Attachments), Winch Trucks, Front End Loader(under 2 CY), Welding Machines, Cat Head Winch, Power Plants which generate over 15 KW, Oiler with CDL, Concrete Curbing Machine.

GROUP III

Bituminous Distributors, Boilers, Retort & Hot Oil Heaters Concrete Mixers, (1 CY & Over), Concrete Paver-Single Drum, Drilling Equip., Shaft and Tunnel Equipment: Refrigeration, Slusher, Jumbo forms, Trenching Machines (all Types), Pump Crete & Guniting Machines, Slipform Paver, Mechanical Bullfloats, Concrete Slab Spreading Machine, Concrete Slab Finishing Machine, Asphalt Plants, Bituminous Finishing Machines, Crushing Plants, Certified Forklift.

GROUP IV

Front End Loaders (2 thru 19 CY), Rollers Steel Wheeled-All Types, Bulldozer, Scrapers (Motor or Towed), Elevating Graders Concrete Batching Plants, Self-Propelled Rollers - Equipped W/Dozer, Twin-Bowl Scrapers and Quad 8 or 9 Pushers (\$.35 Over Basic Rate), Three Bowl Scrapers (\$.60 Over Basic Rate), Bobcat w/Hydraulic Backhoes with buckets up to one and one quarter cubic yards, Motor Grader (Rough), Small Articulating Trucks.

GROUP V

Concrete Paver, Double Drum, Two Drum Hoist, Auto Fine Grader Hysters, Forklift over 2,000 lbs. Lifting Capacity

GROUP VI

Mucking Machines-All Types, Tractor with Hydraulic Backhoe, Backhoes with Buckets up to one and one quarter cubic yards.

GROUP VII

Hydraulic Cranes with less than 50 feet of boom (20 tons and under), Steam Engineers, Loaders (Front end over 10 cubic yards), Concrete Pump (Snorkel Type), Heavy Equipment Low Boy Driver with CDL, Mining Machine, Roof Bolting Machine, Shuttle Car.

GROUP VIII

All Shovel Type Equipment, Side Boom Cats, Cranes, Draglines, Track or Excavator Backhoe, Backhoes with Buckets over one and one quarter cubic yards, Derricks, Guy and Stiff Leg, Pipemobile (No.2 Operator), Pile Driver, Hydraulic Cranes (20 ton and over), Mine Hoists, Belt Loader (C.M.I. type) Cranes and Draglines with Booms over 150 ft. through 199 feet \$.75 above base rate per hour additional; 200 feet and

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over \$1.00 above base rate per hour additional, Shovel (Wheel type), Boring Machine (Tunnel or Shaft Mode), Pipe Mobile, Motor Grader (Finish), Mechanic, Welder, Mobile Pipeline Inspection Camera, Operator/Rigger, Crane Inspector, Continuous Mining Machine, VAC Jet Rodder, Equipment Instructor.

IRON0263D 06/01/2000

	Rates	Fringes
CHAVES, CURRY, DONA DNA, EDDY, GRANT, HARDING, HIDALGO, LEA, LUNA, OTERO, QUAY, ROOSEVELT, SIERRA AND UNION COUNTIES		

IRONWORKERS:

Ornamental; Structural and reinforcing	17.29	4.05
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IRON0495A 07/01/2000

	Rates	Fringes
BERNALILLO, CATRON, CIBOLA, COLFAX, DeBACA, GUADALUPE, LINCOLN, LOS ALAMOS, TAOS, MCKINLEY, MORA, RIO ARRIBA, SAN JUAN, SAN MIGUEL, SANDOVAL, SANTA FE, SOCORRO, TORRANCE, VALENCIA COUNTIES		

IRONWORKERS:

Ornamental; Structural and reinforcing	17.05	6.41
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LABO0016A 10/01/2000

	Rates	Fringes
LABORERS:		
GROUP I	11.56	2.40
GROUP II	12.13	2.40
GROUP III	12.83	2.40
GROUP IV	14.23	2.40

LABORER CLASSIFICATIONS

GROUP I: Chainmen, Stakedrivers, Stake Hopper, Heater Tenders, Pick and Shovel Work, Window Cleaning and Clean up, Flagman, Landscaping and Planter, Fence Builder, Guardrail Builder, Unloading of Furniture and Fixtures, Shop Helper. (Chainman and Stakedrivers working solely for an engineering firm are not subject to this agreement.)

GROUP II: Carpenter Tenders, Concrete Workers, Concrete Buggy Operators, Industrial and Plant Laborers, Fire Watch, Swinging Scaffolds Tender, Fine Grader, Form Stripper, Gabian Basket Builders, Rip Rap Stoneman, Drywall, Stocking and Handling, Fly Ash Vacuum Operator, Man Hole Builder, Tool Room Person and Checker on Jobsite.

GROUP III: Electric Air and Gas Operated Power Tools, Asphalt Rakers, Chain Saw Operators, Oxy Gasoline Torch Operators, Cutting Torch Operators or Burner Person, Gunite Rebound Men, Fog Machine Operators, Power Buggy Operators, Rodmen,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Sandblasters(potmen), Wagon Drill and Diamond Core Driller, Air Track, Drill Operator Hydraulic Core Drill Diamond, Tenders Outside with Pumps under 6", Concrete Burners, Cement Mason Tenders, Plasterers Hodcarriers, Mortar Mixer, Plaster Spreader Operators, Plaster Tenders, Gunitite Nozzlemen, Pipelayer, Pumpcrete Nozzlemen, Powdermen Tender Demolition, Grade Checker, Vibrator Operator, Concrete Saw Operators, Stone Mason Tender, Jack Hammer and Chipping Hammer Operator, Green Cutter High Pressure Air and Water on Concrete Blaster, Pipelayer (includes but not limited to water pipe, sewer pipe, drainage pipe, pvc, and all underground tile, pipe), Cast Iron Concrete pipe, unloading, handling, distribution, and installation.

GROUP IV: Asbestos Abatement Laborer, Toxic and Hazardous Waste Removal Laborer, Lead Base Paint Removal Laborer, Laborer/Concrete Specialist, Pest Technician (Licensed by the Bureau of Rodent Management), **State** Licensed Powder man and, Blaster, Laborers AGC Certified Scaffold Builder Laborer, or Hydromobile Scaffold Builder, Radiation Worker II.

PAIN0823A 04/01/2000

	Rates	Fringes
PAINTERS:		
Mines, mills, Power plants, energy plants, refineries, coal gassification plants, nuclear related facilities & all steel work incidental thereto including stacks of all descriptions:		
Brush, roller, pot tender, sandblaster, grinder operator:		
New Work:		
Zone I	16.05	4.08
Zone II	17.05	4.08
Zone III	18.55	4.08
Repaint/remodel:		
Zone I	13.64	4.08
Zone II	14.64	4.08
Zone III	16.14	4.08
Spray; Preparation for and application of epoxy & special coatings:		
New Work:		
Zone I	16.55	4.08
Zone II	17.55	4.08
Zone III	19.05	4.08
Repaint/remodel:		
Zone I	14.57	4.08
Zone II	15.57	4.08
Zone III	17.07	4.08
Paperhangers:		
New Work:		
Zone I	17.05	4.08
Zone II	18.05	4.08
Zone III	19.55	4.08
Repaint/remodel:		

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Zone I	14.49	4.08
Zone II	15.49	4.08
Zone III	16.99	4.08
All other Work: Commercial:		
Brush, roller, spray, special coatings:		
New Work:		
Zone I	14.24	3.58
Zone II	15.24	3.58
Zone III	16.74	3.58
Repaint/remodel:		
Zone I	14.24	3.58
Zone II	15.24	3.58
Zone III	16.74	3.58
Sandblaster, striping machine op.:		
New Work:		
Zone I	15.69	3.58
Zone II	16.69	3.58
Zone III	18.19	3.58
Sign painter:		
New Work:		
Zone I	16.04	3.58
Zone II	17.04	3.58
Zone III	18.54	3.58
Paperhanger:		
New Work:		
Zone I	16.19	3.58
Zone II	17.19	3.58
Zone III	18.69	3.58
Repaint/remodel:		
Zone I	16.19	3.58
Zone II	17.19	3.58
Zone III	18.69	3.58

PAINTERS ZONE DEFINITIONS

An area within a thirty (30) mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone I.

All jobs beyond the thirty (30) mile radius shall be covered by the zone schedule under wages.

- ZONE I - BASE PAY UP TO 30 MILES
- ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I
- ZONE III - EXTENDING 75 MILES AND BEYOND

PAIN0823B	04/01/2000		
		Rates	Fringes
GLAZIERS		17.25	4.08

PAIN0823C	04/01/2000		
		Rates	Fringes
SOFT FLOOR LAYERS:			
ZONE I		15.48	4.08
ZONE II		16.48	4.08
ZONE III		17.98	4.08

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SOFT FLOOR LAYERS ZONE DEFINITIONS

An area within a thirty (30) mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone 1.

All jobs beyond the thirty (30) mile radius shall be covered by the zone schedule under wages.

- ZONE I -- Up to 30 miles
- ZONE II -- 30 to 75 miles
- ZONE III - 75 miles and beyond

PAIN0823D 04/01/2000

	Rates	Fringes
PAINTERS:		
Mines, mills, Power plants, energy plants, Refineries, coal gassification plants, nuclear related facilities & all steel work incidental thereto including stacks of all descriptions:		
Ames Tool Operator:		
New Work:		
Zone I	17.80	4.08
Zone II	18.80	4.08
Zone III	20.93	4.08
Repaint/remodel:		
Zone I	15.13	4.08
Zone II	16.13	4.08
Zone III	18.26	4.08
Drywall finisher, Handfinisher, machine textures:		
New Work:		
Zone I	17.10	4.08
Zone II	18.10	4.08
Zone III	20.83	4.08
Repaint/remodel:		
Zone I	14.54	4.08
Zone II	15.54	4.08
Zone III	17.67	4.08
All other Work: Commercial:		
Ames tool operator:		
New Work:		
Zone I	16.85	4.08
Zone II	17.85	4.08
Zone III	19.98	4.08
Repaint/remodel:		
Zone I	14.32	4.08
Zone II	15.32	4.08
Zone III	17.45	4.08
Drywall finisher, machine texture, hand finisher:		
New work:		
Zone I	16.35	4.08
Zone II	17.35	4.08
Zone III	19.48	4.08
Repaint/remodel:		
Zone I	13.90	4.08

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Zone II	14.90	4.08
Zone III	17.03	4.08

PAINTERS ZONE DEFINITIONS

An area within a thirty (30) mile radius of the main post office in the city or town where an employee permanently resides at the time of hire shall be considered Zone I.

All jobs beyond the thirty (30) mile radius shall be covered by the zone schedule under wages.

- ZONE I - BASE PAY UP TO 30 MILES
- ZONE II - EXTENDING 30 MILES TO 75 MILES BEYOND ZONE I
- ZONE III - EXTENDING 75 MILES AND BEYOND

PLAS0254A 10/01/2000		
	Rates	Fringes
CEMENT MASONS	16.45	3.58

PLAS0254B 07/01/2000		
	Rates	Fringes
PLASTERERS	16.50	3.42

* PLUM0412A 04/01/2001		
	Rates	Fringes
REMAINING COUNTIES		
PLUMBERS & PIPEFITTERS	22.98	5.95
LOS ALAMOS, WHITE ROCK, SOUTH MESA, MCGREGOR, WHITE SANDS MISSILE RANGE AND/OR PROVING GROUNDS		
PLUMBERS & PIPEFITTERS	23.78	5.95
LIGHT COMMERCIAL :		
All irrigation & lawn sprinkler	15.96	4.20

ROOF0174A 10/01/1994		
	Rates	Fringes
ROOFERS	13.30	1.99

SHEE0049A 04/01/2001		
	Rates	Fringes
REMAINING COUNTIES		
SHEET METAL WORKERS	22.50	7.08

SHEE0049B 04/01/2001		
	Rates	Fringes
LOS ALAMOS COUNTY		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEET METAL WORKERS 24.50 7.14

SUNM1002A 08/11/1993

	Rates	Fringes
SPRINKLER FITTERS:		
Bernalillo, Los Alamos &		
Santa Fe, Counties	15.55	
Otero County	17.45	3.75
Remaining Cos. (Except Dona Ana)	16.06	2.95

TEAM0492A 06/01/1993

	Rates	Fringes
TRUCK DRIVERS:		
BUILDING CONSTRUCTION:		
Zone I:		
GROUP I	9.83	1.89
GROUP II	10.10	1.89
GROUP III	10.18	1.89
GROUP IV	10.30	1.89
GROUP V	10.35	1.89
GROUP VI	10.45	1.89
GROUP VII	10.55	1.89
GROUP VIII	10.69	1.89
GROUP IX	10.84	1.89
Zone II		
GROUP I	11.58	1.89
GROUP II	11.85	1.89
GROUP III	11.93	1.89
GROUP IV	12.05	1.89
GROUP V	12.10	1.89
GROUP VI	12.20	1.89
GROUP VII	12.30	1.89
Group VIII	12.44	1.89
Group IX	12.59	1.89
Zone III:		
GROUP I	12.08	1.89
GROUP II	12.35	1.89
GROUP III	12.43	1.89
GROUP IV	12.55	1.89
GROUP V	12.60	1.89
GROUP VI	12.70	1.89
GROUP VII	12.80	1.89
GROUP VIII	12.94	1.89
GROUP IX	13.09	1.89
BUILDING CONSTRUCTION:		
Light Commercial Construction:		
Zone I:		
GROUP I	7.86	1.89
GROUP II	8.08	1.89
GROUP III	8.14	1.89
GROUP IV	8.24	1.89
GROUP V	8.28	1.89
GROUP VI	8.36	1.89
GROUP VII	8.44	1.89
GROUP VIII	8.55	1.89

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GROUP IX	8.67	1.89
Zone II:		
GROUP I	9.26	1.89
GROUP II	9.48	1.89
GROUP III	9.54	1.89
GROUP IV	9.64	1.89
GROUP V	9.68	1.89
GROUP VI	9.76	1.89
GROUP VII	9.84	1.89
Group VIII	9.95	1.89
Group IX	10.07	1.89
Zone III:		
GROUP I	9.66	1.89
GROUP II	9.88	1.89
GROUP III	9.94	1.89
GROUP IV	10.04	1.89
GROUP V	10.08	1.89
GROUP VI	10.16	1.89
GROUP VII	10.24	1.89
GROUP VIII	10.35	1.89
GROUP IX	10.47	1.89
HEAVY CONSTRUCTION:		
Zone I:		
GROUP I	10.08	1.79
GROUP II	10.35	1.79
GROUP III	10.43	1.79
GROUP IV	10.55	1.79
GROUP V	10.60	1.79
GROUP VI	10.70	1.79
GROUP VII	10.80	1.79
GROUP VIII	10.94	1.79
GROUP IX	11.09	1.79
Zone II:		
GROUP I	11.58	1.79
GROUP II	11.85	1.79
GROUP III	11.93	1.79
GROUP IV	12.05	1.79
GROUP V	12.10	1.79
GROUP VI	12.20	1.79
GROUP VII	12.30	1.79
GROUP VIII	12.44	1.79
GROUP IX	12.59	1.79
Zone III:		
GROUP I	11.83	1.79
GROUP II	12.10	1.79
GROUP III	12.18	1.79
GROUP IV	12.30	1.79
GROUP V	12.35	1.79
GROUP VI	12.45	1.79
GROUP VII	12.55	1.79
GROUP VIII	12.69	1.79
GROUP IX	12.84	1.79

TRUCK DRIVER (BUILDING & HEAVY CONSTRUCTION) CLASSIFICATIONS

GROUP I:

Pickup 3/4 Ton and Under, Lubrication, Light Tire Repair and

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Washer, Swamper, 2 or 4 and up.

GROUP II:

Dump or Batch Truck Under 8 C.Y.W.L.: Flat Bed (bobtail) 2 Ton and Under, Warehouseman including Material Check, Fork Lift Under 5 Ton MRC.

GROUP III:

Dump Trucks (Including All Highway and Off Highway) 8 up to 16 C.Y.W.L.C.; Water, Fuel or Oil Trucks Less Than 3,000 gal. Flat Bed (bobtail) Over 2 Tons.

GROUP IV:

Distributor Driver, Heavy Tire Repair, Lumber Carrier Driver, Young Buggy or Similar Equipment, Transit Mix or Agitator 2 or 3 Axle Bobtail Equipment, Scissor Truck, Bulk Cement Bobtail 2 or 3 Axle, Semi-Trailer Flat Bed or Van Single Axle Forklift 5 Ton and over M.R.C.

GROUP V:

Dumpsters and Dumpcrete Driver; Water, Fuel or Oil Trucks 3,000 to 6,000 Gallons; Lowboys and Light Equipment Driver; Euclid Type Tank Wagon Under 6,000 Gallons.

GROUP VI:

Vacuum Truck; Dump Trucks (including all highway and off-highway 16 up to 22 C.Y.W.L.C.

GROUP VII:

Transit Mix or Agitator Semi or 4 Axle Equipment Driver; Flaherty Truck Type Spreader Box Driver; Slurry Truck Driver Bulk Cement Driver; Semi-Doubles; 5 Axle Bobtail; Winch Truck and "A" Frame; Dump Truck (including all Highway and Off-Highway) 22 CY up to 35 C.Y.W.L.C.

GROUP VIII:

Euclid Diesel Power Turnarocker; Terra Coba-DW20-Tourneau Pulls and Similar Diesel Powered Equipment when used to haul Materials and Assigned to a Teamster-Lowboy Heavy Equipment Driver; Water, Fuel and Oil Trucks 6,000 Gallons and Over Including Tank Wagon Drivers, Semi-Trailer Driver (Flat-Bed or Van Tandems); Light Equipment Mechanic; Dump Trucks (Including All Highway and Off-Highway) 35 C.Y.W.L.C. and Over; Truck and Trailer or Semi-Trailer (Flated); eject all.

GROUP IX:

Lowboy (Heavy Equipment Double Gooseneck); Heavy Equipment Mechanic; Welder (Body and Fender Men).

TRUCK DRIVERS ZONE PAY BASING POINTS AND DEFINITIONS LISTED BELOW FOR BUILDING AND HEAVY CONSTRUCTION - BASING POINTS ARE AS FOLLOWS:

ALAMOGORDO, ALBUQUERQUE, ARTESIA, BAYARD, BELEN, CARLSBAD, CLOVIS, DEMING, ESPANOLA, EUNICE, FARMINGTON, GALLUP, GRANTS, HOBBS, LAS CRUCES, LAS VEGAS, LORDSBURG, LOVINGTON, PORTALES, RATON, ROSWELL, RUIDOSO, SANTA FE, SANTA ROSE, SILVER CITY,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
SOCORRO, TAOS, TUCUMCARI

ZONE I

Projects within 15 miles from the starting points above

ZONE II

Projects 15 or more road miles but less than 35 miles from above, includes all of Los Alamos County

ZONE III

Projects more than 35 road miles, or more from above.

FOOTNOTE:

**LIGHT COMMERCIAL DEFINITION

Construction, erection, alteration, repair, modification, addition to or improvement in whole or in part of structures for which the major support system is wood frame construction and will also include all apartments over 4 stories, all convenience stores, fast food restaurants, automobile service stations & motels up to 2 stories high.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION NY010009 04/13/01 NY9

General Decision Number NY010009

Superseded General Decision No. NY000009

State: **New York**

Construction Type:

BUILDING

County(ies):

JEFFERSON

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001

COUNTY(ies):

JEFFERSON

BRNY0002H 07/01/2000

	Rates	Fringes
BRICKLAYERS	21.10	7.27
TILE SETTERS	17.59	7.42
TILE FINISHERS	15.04	6.85

* ELEC0910M 04/01/2001

	Rates	Fringes
ELECTRICIANS	22.80	9.83

SHEE0058A 05/01/2000

	Rates	Fringes
SHEET METAL WORKERS:		
Projects 5 million or less	21.66	10.395
Projects over \$5 million	22.66	10.395

SUNY1003A 05/01/1996

	Rates	Fringes
CARPENTERS	16.81	5.52
CEMENT MASONS	19.75	5.82
LABORERS	14.06	5.36
PLUMBERS	19.24	4.26
POWER EQUIPMENT OPERATORS:		
Forklift	20.64	8.70
ROOFERS	16.99	5.47

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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Wage and Hour Administrator
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The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION NY010003 07/06/2001 NY3

Date: July 6, 2001
 General Decision Number **NY010003**

Superseded General Decision No. NY000003

State: **New York**

Construction Type:
BUILDING
 HEAVY
 HIGHWAY
 RESIDENTIAL

County(ies):
 BRONX NEW YORK RICHMOND
 KINGS QUEENS

BUILDING & RESIDENTIAL CONSTRUCTION PROJECTS (includes single family homes and apartments up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/06/2001
3	04/13/2001
4	05/04/2001
5	06/01/2001
6	07/06/2001

COUNTY(ies):
 BRONX NEW YORK RICHMOND
 KINGS QUEENS

ASBE0012A 07/01/2000

	Rates	Fringes
ASBESTOS/INSULATOR WORKERS: SCOPE OF WORK: includes application of all insulating materials, protective coverings, coatings and finishing to all types of mechanical systems.	34.06	19.69

BOIL0005A 09/01/2000

	Rates	Fringes
BOILERMAKER	\$34.92	20.73+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Years Eve

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* BRNY0001A	07/01/2001		
		Rates	Fringes
BRICKLAYERS		36.22	15.56
STONEMASONS		30.69	17.90

* BRNY0001B	07/01/2001		
		Rates	Fringes
POINTERS, CLEANERS & CAULKERS		32.25	12.65

* BRNY0003A	07/01/2001		
		Rates	Fringes
TERRAZZO WORKERS		35.58	14.60
TERRAZZO FINISHERS		30.07	14.60

BRNY0004A	01/01/2000		
		Rates	Fringes
MARBLE SETTERS		28.72	15.65

BRNY0020A	01/01/2000		
		Rates	Fringes
MARBLE FINISHERS		23.69	16.83

BRNY0024A	01/01/2000		
		Rates	Fringes
MARBLE POLISHERS		29.90	12.38

BRNY0052A	05/07/2001		
		Rates	Fringes
TILE LAYERS		32.47	16.56

BRNY0088A	05/04/2001		
		Rates	Fringes
TILE FINISHERS		27.32	13.75

CARP0001Y	07/01/2000		
		Rates	Fringes
CARPENTERS:			
Carpenters & Soft floor			
layers		32.22	22.81

CARP0740A	07/01/2000		
		Rates	Fringes
MILLWRIGHTS		32.54	24.79

CARP1456E	07/01/2000		
		Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

DOCKBUILDERS	33.39	22.81
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CARP1456F 07/01/2000		
	Rates	Fringes
DIVERS	40.95	22.81
DIVER TENDERS	30.35	22.81

ELEC0003A 05/10/2001		
	Rates	Fringes
ELECTRICIANS	37.00	26.76
Jobbing, and maintenance and repair work	21.50	9.94+a

PAID HOLIDAYS:

a. New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day

ELEC1049A 10/01/2000		
	Rates	Fringes

QUEENS COUNTY

LINE CONSTRUCTION:

Substation and Switching structures pipe type cable installation and maintenance jobs or projects; Railroad electrical distribution/transmission systems maintenance (when work is not performed by railroad employees) Overhead and Underground transmission/distribution line work. Fiber optic, telephone cable and equipment

Lineman and Cable Splicer;	31.45	8.31
Heavy Equipment Operator;	23.33	6.99
Groundman	17.50	6.08
Tree Trimmer	19.99	6.50

ELEV0001B 07/01/1998		
	Rates	Fringes
ELEVATOR MECHANICS (New Construction)	34.415	10.805+a
ELEVATOR MECHANICS (Modernization and Repair)	28.576	10.655+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Friday after Thanksgiving, and Christmas Day.

PAID VACATION: Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 5 years of service, and 6% for employees with less than 5 years of service

ENGI0014B 07/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS (HEAVY & HIGHWAY):		
GROUP 1	45.17	16.95+a
GROUP 2	37.17	16.95+a
GROUP 3	37.43	16.95+a
GROUP 4	36.53	16.95+a
GROUP 5	35.80	16.95+a
GROUP 6	34.75	16.95+a
GROUP 7	34.98	16.95+a
GROUP 8	33.94	16.95+a
GROUP 9	33.19	16.95+a
GROUP 10	33.08	16.95+a
GROUP 11	30.37	16.95+a
GROUP 12	31.04	16.95+a
GROUP 13	30.88	16.95+a
GROUP 14	23.13	16.95+a
GROUP 15	21.73	16.95+a

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Tower crane

GROUP 2: Backhoes, power shovel, Hydraulic clam shells, moles and machines of a similar type

GROUP 3: Mine hoists and crane, etc. used as mine hoists

GROUP 4: Gradalls, keystones, cranes (with digging buckets), bridge cranes, trenching machines, vermeer cutter and machines of a similar nature

GROUP 5: Piledrivers, derrick boats, tunnel shovels

GROUP 6: Raise bore drill, and machines of a similar nature

GROUP 7: Back filling machines, cranes, mucking machines, dual drum pavers

GROUP 8: Mixers (concrete w/loading attachments), concrete pavers, cableways, land derricks, power house (low pressure units), concrete pumps

GROUP 9: Concrete plants, well drilling machines, stone crushers double drum hoist, power house (other than above)

GROUP 10: Concrete mixers

GROUP 11: Elevators

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 12: Concrete breaking machine, Hoists (single drum), load masters, locomotive and dinkies over 10 tons,

GROUP 13: Vibratory console

GROUP 14: Compressors (portable 3 or more in battery), tugger machine (caissons) well point pumps, chum drill

GROUP 15: Boilers, (high pressure, compressors (portable, single, or 2 in battery, not over 100' apart), pumps (river cofferdam and welding machines (except where arc is operated by members of local 15) push button machines, all engines irrespective of power (power pac) used to drive auxilliary equipment, air, hydraulic etc.

PREMIUMS ON CRANES (Crawler or Truck):

100' to 149' boom - add .50
 150' to 249' boom - add .75
 250' to 349' boom - add 1.00
 350' to 450' boom - add 1.50

UTILITY CONSTRUCTION:

Utility compressors	20.65	16.95+a
Off shift compressors	26.43	16.95+a
Horizontal boring rig	31.70	16.95+a

PAVING CONSTRUCTION:

Asphalt spreader	32.99	16.95+a
Asphalt roller	32.08	16.95+a
Asphalt plants	27.63	16.95+a

STEEL ERECTION:

Three drum derricks	41.07	16.95+a
Cranes, Hydraulic Cranes, 2 drum derricks, Forklifts, Boom Trucks	39.41	16.95+a
Compressors, Welding Machines	27.91	16.95+a

Premiums for Cranes on Steel Erection:

100' to 149' boom - add 1.75
 150' to 249' boom - add 2.00
 250' to 349' boom - add 2.25
 350' to 450' boom - add 2.75
 Tower crane - add 2.00

FOOTNOTE:

a. Paid Holidays: New Year's Day; Lincoln's Birthday; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; Election Day; Thanksgiving Day; and Christmas Day; provided the employee works one day the payroll week in which the holiday occurs.

ENGI0014C 08/01/1999

Rates Fringes

POWER EQUIPMENT OPERATORS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

(BUILDING & RESIDENTIAL):

GROUP 1	37.46	16.95+a
GROUP 2	37.08	16.95+a
GROUP 3	35.51	16.95+a
GROUP 4	34.96	16.95+a
GROUP 5	28.05	16.95+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Double drum

GROUP 2: Stone derrick, cranes, hydraulic cranes, boom trucks

GROUP 3: 4 pole Hoist, Single Drum Hoists

GROUP 4: Fork lift, house cars, plaster (platform machine), plaster bucket, concrete pump and all other equipment used for hoisting material

GROUP 5: Compressors, welding machines (cutting concrete work), paint spraying, sand blasting, pumps (with the exclusion of concrete pumps), house car (settlement basis only), all engines irrespective of power (power pac) used to drive auxiliary equipment, air, hydraulic, etc., boilers

Premiums for Cranes:

100'-149' boom - add	1.75
150'-249' boom - add	2.00
250'-349' boom - add	2.25
350'-450' boom - add	2.75
Tower cranes add	2.00

FOOTNOTE:

- a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Columbus Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the payroll week in which the holiday occurs

* IRON0040P 07/01/2001		
	Rates	Fringes
BRONX, NEW YORK, RICHMOND		
IRONWORKERS (STRUCTURAL)	33.55	32.93

IRON0046C 07/01/2000		
	Rates	Fringes
IRONWORKERS (METALLIC LATHERS)	34.85	20.08

* IRON0197A 07/01/2001		
	Rates	Fringes
IRONWORKERS (STONE DERRICKMAN)	33.76	26.06

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* IRON0361P 07/01/2001		
	Rates	Fringes
KINGS, QUEENS		
IRONWORKERS (STRUCTURAL)	33.55	32.93

IRON0580A 01/01/2001		
	Rates	Fringes
IRONWORKERS (ORNAMENTAL)	31.80	24.95

LABO0006A 07/01/2000		
	Rates	Fringes
BUILDING CONSTRUCTION		
LABORERS:		
CEMENT AND CONCRETE WORKERS	28.72	12.24

LABO0029A 07/01/1999		
	Rates	Fringes
LABORERS: (Heavy)		
Blasters	28.83	16.70
Blasters (hydraulic trac drill)	29.38	16.70
Hydraulic Trac Drill	25.68	16.70
Wagon; Airtrac; Quarry Bar		
Drill Runners	25.13	16.70
Jackhammers, Chippers, Spaders, Concrete Breakers, All Other Pneumatic Tools, Walk Behind Self-Propelled Hydraulic Asphalt and Concrete Breaker	24.44	16.70
Powder Carriers	21.80	16.70

LABO0078A 12/01/2000		
	Rates	Fringes
ASBESTOS, LEAD ABATEMENT (Other than Bridge Work) & HAZARDOUS WASTE LABORERS	23.15	5.00

LABO0079A 01/01/2001		
	Rates	Fringes
LABORERS: (Building)		
Mason Tenders	25.55	13.19
Demolition Laborers		
Tier A	26.55	12.99
Tier B	16.25	6.40

CLASSIFICATIONS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TIER A: Responsible for the removal of all interior petitions and structural petitions that can consist of sheet rock, block or masonry. Also, all structural slab openings for ducts, mechanical, shafts, elevators, slab openings and exterior walls where the building is not being completely demolished.

TIER B: Responsible for shoveling of debris into containers, pushing containers from the inside to the outside of the building.

LABO0147A	07/01/2000		
		Rates	Fringes
LABORERS			

FREE AIR TUNNEL WORKERS

Tunnel Workers (including Maintenance Men, Inside Muck Lock Tenders, Pump Men Electricians, Cement Finishers, Caulkers, Hydraulic Men, Shield Men, Monorail Operators, Motor Men, Conveyor Men, Powder Carriers, Pan Men, Riggers, Chuck Tenders, Track Men Painters, Nippers, Brakemen, Cable Men, Hose Men, Grout Men, Gravel Men, Form Workers, Concrete Workers, Tunnel Laborers, Mole Nipper (one (1) Mole Sipper per Working Shaft per Shift for up to and including Two (2) Moles)

LABORERS	26.31	13.06
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* LABO0731A	07/01/2001		
		Rates	Fringes
LABORERS: (Building, Heavy and Residential):			
UNSKILLED	28.74	14.64	
UTILITY LABORER	28.59	14.64	

Paid Holidays:
Labor Day and Thanksgiving Day

LABO1010A	01/01/1999		
		Rates	Fringes
LABORERS HIGHWAY CONSTRUCTION:			
FORMSETTERS	29.19	13.60+a	
LABORERS	26.09	13.60+a	

FOOTNOTES:

a. PAID HOLIDAYS: Memorial Day, Fourth of July, Labor Day, Columbus Day, Election Day and Thanksgiving Day, provided the employee has worked one (1) day in the calendar week in which the said holiday occurs.

LABO1018A 01/01/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
LABORERS:		
Asphalt Rakers	29.06	13.60+a
Asphalt Tampers	26.62	13.60+a
Asphalt Laborers	26.51	13.60+a
Screedman	29.43	13.60+a

FOOTNOTE:

a. Paid Holidays: Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans Day, and Thanksgiving Day

 PAIN0009B 05/01/2001

	Rates	Fringes
PAINTERS		
Painters, Drywall Finishers, Lead Abatement Worker (Bridge Work)	29.25	14.45
Spray, Scaffold and Sandblasting	32.25	14.45
GLAZIERS	30.75	19.20

All repair and maintenance work on a particular building, whenever performed, where the total cumulative contract value is under \$100,000.00

GLAZIERS	18.05	9.19
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PAIN0806A 10/01/2000

	Rates	Fringes
PAINTERS:		
Structural steel and Bridge	36.00	20.28

* PAIN1974A 07/04/2001

	Rates	Fringes
DRYWALL TAPERS/POINTERS	33.32	

PLAS0260A 07/01/1999

	Rates	Fringes
BRONX, NEW YORK AND RICHMOND COUNTIES:		
PLASTERERS	27.91	15.55

PLAS0260B 07/01/1999

	Rates	Fringes
KINGS AND QUEENS COUNTIES		
PLASTERERS	27.91	15.16

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLAS0530A 02/07/2001

	Rates	Fringes
DRYWALL PLASTERERS	27.50	14.50

* PLAS0780A 07/01/2001

	Rates	Fringes
CEMENT MASONS	36.00	15.34

PLUM0001K 01/01/2001

	Rates	Fringes
PLUMBERS:	39.16	20.38

JOBGING AND ALTERATIONS

Any repair and or replacement
of the present plumbing
system that does not change
the existing roughing

20.97	7.43
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PLUM0638A 12/27/2000

	Rates	Fringes
SPRINKLER FITTERS, STEAMFITTEERS	34.97	23.17
SERVICE FITTERS	21.45	5.31

Service Fitter work shall consist of all repair, service and maintenance work on domestic, commercial and industrial refrigeration, air conditioning and air cooling, stoker and oil burner apparatus and heating apparatus etc., including but not exclusively the charging, evacuation, leak testing and assembling for all machines for domestic, commercial and industrial refrigeration, air conditioning and heating apparatus. Also, work shall include adjusting, including capacity adjustments, checking and repairing of replacement of all controls and start up of all machines and repairing all defects that may develop on any system for domestic, commercial and industrial refrigeration and all air conditioning, air cooling, stoker and oil burner apparatus and heating apparatus regardless of size or type.

* ROOF0008C 07/01/2001

	Rates	Fringes
ROOFERS	29.08	18.78

SHEE0028B 02/01/2001

	Rates	Fringes
SHEET METAL WORKERS	34.67	21.83

* TEAM0282B 07/01/2001

Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TRUCK DRIVERS:

Asphalt	29.40	19.2025+a+b
High Rise	28.96	15.95+a+b
Euclids & Turnapulls	26.79	15.9525+a+b

FOOTNOTES:

PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans' Day (Armistice Day), Thanksgiving Day and Christmas Day. Employees working two (2) days in the calendar week in which a holiday falls are to be paid for such holiday, provided that they shape each remaining workday during such calendar week.

b. VACATION: For each 15 days worked within the contract year an employee will receive one day's vacation with pay with a maximum vacation of 3 weeks per year.

 TEAM0813A 12/01/1998

	Rates	Fringes
TRUCKDRIVERS:		
GROUP 1	19.49	3.61+a
GROUP 2	19.76	3.61+a
GROUP 3	19.90	3.61+a
GROUP 4	20.23	3.61+a
GROUP 5	20.40	3.61+a
GROUP 6	21.29	3.61+a
GROUP 7	22.40	3.61+a
GROUP 8	19.90	3.61+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr.'s Birthday, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Thanksgiving Day, Christmas Day, Employee's Birthday, Two(2) Personal Days, and any holiday or day of mourning proclaimed as such by the State or Federal Government.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Closed body trucks with self contained loading unit up to and including 22 yard capacity.

GROUP 2: Open trucks, rack body or trucks with no self contained mechanical loading device, up to 22 yard capacity. One-container tractor hoist

GROUP 3: 10 wheel, open trucks, container loaders, dino-master, over-cab loaders, rack body trucks, or any trucks 22 yards to and including 25 yards capacity.

GROUP 4: Rubbish and garbage trucks, 26 yards to and including 31 yards.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5: Single axle working non-compactor containers up to 15 yards capacity on rubbish and garbage removal.

GROUP 6: Roll-off trucks up to and including 42 yard capacity.

GROUP 7: Roll-off truck with more than 42 yard capacity or any tractor trailer trucks.

GROUP 8: One-container tractor hoist on construction and alteration debris removal.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION NY010077 07/06/2001 NY77

Date: July 6, 2001
 General Decision Number **NY010077**

Superseded General Decision No. NY000077

State: **New York**

Construction Type:
BUILDING

County(ies):
 SCHUYLER SENECA YATES

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	05/04/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):
 SCHUYLER SENECA YATES

BRNY0011U 05/01/2001	Rates	Fringes
BRICKLAYERS, CEMENT MASONS	21.96	10.62

CARP0187U 05/01/2001	Rates	Fringes
CARPENTERS	18.24	7.205
MILLWRIGHTS & PILEDRIVERS	19.24	7.205

ELEC0139Q 06/01/2001	Rates	Fringes
REMAINDER OF SCHUYLER COUNTY		
ELECTRICIANS	24.00	10.92

* ELEC0241Q 06/01/2001	Rates	Fringes
SCHUYLER (TOWNSHIPS OF CATERINE, CAYUTA, AND HECTOR); SENECA (TWPS. OF COVERT AND LODI)		
ELECTRICIANS	23.45	10.70+3%

ELEC0840P 06/01/1998	Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 REMAINDER OF SENECA COUNTY, ALL OF YATES COUNTY

ELECTRICIAN	22.50	7.15+3%
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ELEV0027B 05/28/2001		
	Rates	Fringes
ELEVATOR CONSTRUCTORS:		
Mechanics	27.925	7.19+a

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving and Christmas Day and the Friday after Thanksgiving. Employer contributes 8% basic hourly rate for 5 years or more service or 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

IRON0033H 05/01/2001		
	Rates	Fringes
YATES COUNTY (TWPS. BENTON, ITALY, MIDDLESEX, POTTER, BARRINGTON, JERUSALEM, STARKEY AND TORRE)		

SCHUYLER COUNTY (TWPS OF DIX, ORANGE, READING, AND TYRON);

IRONWORKERS:

Ornamental, Reinforcing Stone Derrickman, Rigger, Rodman, Structural Machinery Movers Fence Erectors, Precast Concrete Erector Sheeter	21.25 21.50	10.84 10.84
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IRON0060C 05/01/2001		
	Rates	Fringes

IRONWORKERS Structural, Ornamental, Reinforceing, Pre-cast Concrete Erector, Machinery Mover & Rigger, Fence Erector, Stone Derrickman Welder, Sheeter, Sheeter Bucker-up		
SCHUYLER (Twps. of Cathrine, Cayuta, Hector and Montour).	20.50	12.34
SENECA COUNTY	20.50	12.34

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABO0103Q 07/01/2000		
	Rates	Fringes
LABORERS	17.77	5.75
ASBESTOS REMOVAL	19.02	5.75

PLUM0267Q 05/01/2001		
	Rates	Fringes
PLUMBERS & PIPEFITTERS STEAMFITTERS (Including HVAC work)	22.50	10.81

SFNY0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTER	26.15	6.00

SHEE0046M 05/01/2000		
	Rates	Fringes
SENECA and YATES COUNTIES		
SHEET METAL WORKERS	23.72	9.70

SHEE0112P 05/01/2001		
	Rates	Fringes
SCHUYLER COUNTY		
SHEET METAL WORKERS	21.46	8.67

SUNY1017A 11/25/1994		
	Rates	Fringes
PAINTERS	18.56	6.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
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2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION NY010002 07/06/2001 NY2

Date: July 6, 2001

General Decision Number **NY010002**

Superseded General Decision No. NY000002

State: **New York**

Construction Type:

BUILDING

HEAVY

HIGHWAY

County(ies):

ALBANY	MONTGOMERY	SCHOHARIE
COLUMBIA	RENSSELAER	WASHINGTON
FULTON	SARATOGA	
GREENE	SCHENECTADY	

BUILDING CONSTRUCTION PROJECTS (For all counties except FULTON)
 (does not include single family homes and apartments up to a
 including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	05/04/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):

ALBANY	MONTGOMERY	SCHOHARIE
COLUMBIA	RENSSELAER	WASHINGTON
FULTON	SARATOGA	
GREENE	SCHENECTADY	

ASBE0040B 05/01/1997

	Rates	Fringes
ASBESTOS/INSULATOR WORKERS SCOPE OF WORK: includes application of all insulating materials, protective, coverings, coating and finishing to all types of mechanical systems.	19.680	10.18
HAZARDOUS WASTE HANDLERS Duties limited to preparation wetting; stripping; removal; scrapping; vacuuming; bagging; and disposing of all insulation materials, whether they contain asbestos or not from mechanical systems	16.07	4.70

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BOIL0197B 01/01/2001

	Rates	Fringes
BOILERMAKER	23.28	13.09

BRNY0006B 06/01/2001

	Rates	Fringes
BRICKLAYERS, STONE MASONS, CEMENT MASONS, PLASTERERS, POINTERS, CAULKERS and CLEANERS	20.55	8.64
MARBLE, TILE & TERRAZZO WORKERS	21.60	7.96
MARBLE, TILE & TERRAZZO WORKER FININHERS	19.15	7.96
HEAVY AND HIGHWAY CONSTRUCTION CEMENT MASONS (Heavy & Highway)	18.26	8.62+a

FOOTNOTE:

a. PAID HOLIDAYS: Memorial Day, July the 4th, Labor Day, and Thanksgiving Day (provided the employee is employed (1) day before and (1) day after the holiday.

CARP0019B 06/01/1999

	Rates	Fringes
COLUMBIA AND GREENE COUNTIES		
BUILDING CONSTRUCTION Carpenters, Millwrights Pile Drivers	23.50	11.10
HEAVY AND HIGHWAY CONSTRUCTION Carpenters, Millwrights, Pile Drivers	23.50	11.10

CARP0229E 07/01/1999

	Rates	Fringes
SARATOGA COUNTY		
BUILDING CONSTRUCTION: Carpenters	19.93	6.50
Millwrights and Piledrivermen	20.43	6.50
WASHINGTON COUNTY		
BUILDING CONSTRUCTION: Carpenters	19.61	6.50
Piledriver	19.76	6.50
Millwright	20.11	6.50

SARATOGA AND WASHINGTON COUNTIES

HEAVY & HIGHWAY CONSTRUCTION:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Carpenters 20.25 6.80

PAID HOLIDAYS: Labor Day, provided the employee has been on the payroll the calender week or any of the holiday week preceeding the holiday and works the day after the holiday.

CARP0370C 07/01/1999

	Rates	Fringes
ALBANY, MONTGOMERY, RENSSELAER, SCHENECTADY AND SCHOHARIE COUNTIES		
BUILDING CONSTRUCTION:		
Carpenters, Drywall Installers, Soft Floor Layers & Lathers	19.70	7.22
Millwrights and Piledriver	20.45	7.22
HEAVY & HIGHWAY CONSTRUCTION (Counties listed above including FULTON COUNTY)	18.94	6.89

CARP1456I 07/01/1995

	Rates	Fringes
ALBANY; FULTON; MONTGOMERY (East of center line of Route 10, but excluding the Palatine Bridge and Canajoharie area); RENSSELAER; SARATOGA (except the Twps. of Corinth, Day, Edinburg, Hadley, and Moreau); SCHENECTADY; SCHOHARIE (except the Twps. of Jefferson, Richmondville, Seward, Sharon, and Summit); WASHINGTON (Twps. of Cambridge, Easton, Jackson, Salem and White Creek).		
DIVERS	34.05	16.61
DIVERS TENDERS	25.56	16.61

ELEC0236A 05/01/2000

	Rates	Fringes
ALBANY; COLUMBIA; FULTON; GREENE (that portion North of a line following the south limits of the city of Catskill); MONTGOMERY; RENSSELAER, SARATOGA; SCHENECTADY; SCHOHARIE; WASHINGTON		
ELECTRICIANS	22.55	11.53

ELEC0363D 04/01/2001

	Rates	Fringes
GREENE COUNTY (Portion of)		
ELECTRICIAN	28.00	14.18

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELEC1249C 05/06/2001

	Rates	Fringes
LINE CONSTRUCTION (LINEMAN)		
LIGHTING AND TRAFFIC SIGNAL		
Including any and all Fiber Optic Cable necessary for Traffic Signal Systems, Traffic Monitoring systems and Road Weather information systems		
Lineman & Technician	25.86	7.50+6.5%+a
Groundman Digging Machine Operator	23.27	7.50+6.5%+a
Mechanic	20.69	7.50+6.5%+a
Groundman Truck Driver (tractor trailer unit)	21.98	7.50+6.5%+a
Groundman Truck Driver	20.69	7.50+6.5%+a
Flagman	15.52	7.50+6.5%+a

FOOTNOTE:

- a. New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEC1249D 05/06/2001

	Rates	Fringes
LINE CONSTRUCTION:		
Substation:		
Lineman & Technician	28.75	7.50+7%+a
Cable Splicer	31.63	7.50+7%+a
Groundman digging machine Operator	25.68	7.50+7%+a
Mechanic	23.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	24.44	7.50+7%+a
Ground man truck driver	23.00	7.50+7%+a
Flagman	17.25	7.50+7%+a

Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Lineman & Technician	30.04	7.50+7%+a
Cable Splicer	33.04	7.50+7%+a
Groundman Digging Machine Operator	27.04	7.50+7%+a
Mechanic	24.03	7.50+7%+a
Groundman Truck Driver (Tractor-trailer unit)	25.53	7.50+7%+a
Groundman Truck Driver	24.03	7.50+7%+a
Flagman	18.02	7.50+7%+a

Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities (where no other trades are or have been involved):

Lineman and Technician	28.75	7.50+7%+a
Cable Splicer	28.75	7.50+7%+a
Groundman digging machine operator	25.88	7.50+7%+a
Mechanic	23.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	24.44	7.50+7%+a
Groundman Truck driver	23.00	7.50+7%+a
Flagman	17.25	7.50+7%+a

Overhead transmission line work (where other trades are or have been involved):

Lineman and Technician	31.25	7.50+7%+a
Cable Splicer	31.25	7.50+7%+a
Groundman digging machine operator	28.13	7.50+7%+a
Mechanic	25.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	26.56	7.50+7%+a
Groundman truck driver	25.00	7.50+7%+a
Flagman	18.75	7.50+7%+a

TELEPHONE, CATV FIBEROPTICS CABLE AND EQUIPMENT

Cable splicer/Central Office Person	19.61	2.80+3%
Installer Repairman-Teledata Lineman/Tecnician-Equipment Operator	18.63	2.80+3%
Groundman	10.84	2.80+3%

TREE TRIMMER	15.89	3.80+3%+b
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FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

- b. New Years Day, Washington's Birthday, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Thanksgiving Day, Day after Thanksgiving Day and Christmas Day

ELEC1249Z 05/06/2001

Rates Fringes

COLUMBIA COUNTY

LINE CONSTRUCTION (LINEMAN)

LIGHTING AND TRAFFIC SIGNAL
 INCLUDING ANY AND ALL FIBER
 OPTIC CABLE NECESSARY FOR THE TRAFFIC
 SIGNAL SYSTEMS, TRAFFIC MONITORING SYSTEMS
 AND ROAD WEATHER INFORMATION SYSTEMS

Lineman and Technician	27.13	7.50+6.5%+a
Groundman Digging Machine Operator	24.42	7.50+6.5%+a
Mechanic	21.70	7.50+6.5%+a
Groundman Truck Driver (Tractor-trailer unit)	23.06	7.50+6.5%+a
Groundman Truck Driver	21.70	7.50+6.5%+a
Flagman	16.28	7.50+6.5%+a

PAID HOLIDAYS:

- a. Memorial Day, New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEV0035A 07/21/2000

Rates Fringes

Within 5 1/2 mile radius of Albany City Hall (State and Eagle Streets)

ELEVATOR CONSTRUCTOR	25.575	7.195
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FOOTNOTES:

- a. PAID HOLIDAYS: New Year's Day, Memorial Day Independence Day, Labor Day, Thanksgiving Day, and the day after Thanksgiving Day, Christmas Day.

- b. Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

years of service as vacation pay credit.

ELEV0138D 05/01/2001		
	Rates	Fringes
COLUMBIA COUNTY (THE TOWNS OF ANCRAM, CLERMONT, COPAKE, GALLATIN, GERMANTOWN, LIVINGSTON, AND TAGHKANIC); GREEN COUNTY (THE TOWNS OF HUNTER AND CATSKILL)		
ELEVATOR CONSTRUCTOR	35.055	9.99

* ENGI0106A 07/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS (HEAVY & HIGHWAY)		
GROUP 1	26.36	12.80+a
GROUP 2	25.93	12.80+a
GROUP 3	25.02	12.80+a
GROUP 4	22.45	12.80+a
GROUP 5	27.54	12.80+a
GROUP 6	26.86	12.80+a
GROUP 7	27.36	12.80+a

POWER EQUIPMENT OPERATOR CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1:- Boom Truck (over 5 tons) Crane, Cherry Picker (over 5 ton capacity), Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane

GROUP 2:- Automated Concrete Spreader (CMI), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Belt Placer (CMI type), Black Top Plant (Automated), Boom Truck (5 tons and under) Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Pump (8" or over), Dredge, Dual Drum Paver, Excavator (All Purpose-Hydraulically Operated) (Gradall or Similar), Fork Lift (Factory Rated 15 ft. and Over), Front End Loader (4 c.y. and over), Head Tower (Sauerman or Equal), Hoist (2 or 3 Drum), Holland Loader, Mine Hoist, Mucking Machine or Mole, Pavement Breaker (SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver, Tractor Drawn Belt-Type Truck Crane, Truck or Trailer Mounted Log Chipper (Self-Feeder), Tug Operator (Except Manned Rented Equipment), Tunnel Shovel,

GROUP 3 - Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Spreader and Mixer, Blacktop Plant (Non-Automated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage-Hoist, Central Mix Plant (Non-Automated) and All Concrete Batching Plants, Cherry Picker (5 Tons Capacity and Under), Compressors (4 or less) Exceeding 2000 C.F.M. Combined Capacity, Concrete Paver (over 16S), Concrete Pump (Under 8"), Crusher, Diesel Power Unit, Drill Rigs (Tractor Mounted), Front End Loader (under 4 c.y.), Hi-Pressure - Boiler (15 lbs. and over), Hoist (One Drum) Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive, Maintenance Engineer/Greaseman/

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Welder, Mixer (For Stabilized Base Self-Propelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (For Soil Stabilization), Road Widener, Roller (All Above Subgrade), Sea Mule, Self-contained Ride-on-Rock Drill, excluding Air-Track Type Drill, Skidder, Tractor with Dozer and /or pusher, Trencher, Tugger Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat.,

GROUP 4 - A-Frame Winch Hoist on Truck, Ballast Regulator (Ride-On), Compressors (4 not to exceed 2000 C.F.M. Combined Capacity; or 3 or less with more than 1200 C.F.M. but not to exceed 2000 C.F.M.), Directional Drill Machine Locator Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 of Any Type Of Combination), Concrete Pavement Spreaders and Finishers, Conveyor, Drill Core, Electric Pump Used In Conjunction with Well Point System, Farm Tractor with Accessories, Fine Grade Machine, Fork Lift (under 15 ft.), Grout Pump Guniting Machine, Hammers (Hydraulic-Self-Propelled), Hydra- Spiker (Ride-On), Hydro-Blaster Water, Post Hole Digger and Post Driver, Power Sweeper, Roller (Grade and Fill), Scarifier (Ride-On Spansaw (Ride-On), Skid Steer loader (Bobcat or similar) Sump Electric Pump (When Used In Lieu Of Well Point System), Tamper (Ride-On), Tie Extractor (Ride-On), Tie Handler, Tie Insertter (Ride-On), Tie Spacer (Ride-On), Tire Repair, Track Liner, Tractor With Towed Accessories, Vibrator Compactor, Vibro Tamp, Well Point, Aggregate Plant, Boiler (Used In Conjunction With Production), Cement and Bin Operator, Compressors (3 or less not to Exceed 1200 C.F.M. Combined Capacity), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less of Any Type or Combination), Concrete or Mixer (16S and under), Concrete Saw (Self-Propelled), Fireman, Form Tamper, Hydraulic Pump (Jacking System), Light Plants, Mulching Machine, Oiler, Parapet-Concrete or Pavement Grinder, Power Broom (Towed), Power Heaterman, Revinus Widener, Shell Winder, Steam cleaner, Tractor.

GROUP 5 - Master Mechanic

GROUP 6 - Crane Premium with Boom Length and Jib 150 Ft.- 199 Ft.

GROUP 7 - Crane Premium with Boom Length and Jib 200 Ft. and over.

Tower Crane Premium	.50
Hazmat Work Premium	2.50
Hydrographic	.50

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, Lincoln's Birthday, Washington's Birthday, Good Friday, Columbus Day, November Election Day, and Veteran's Day

ENGI0106B 05/01/2001

Rates

Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS (BUILDING):

GROUP 1	22.67	11.90+a
GROUP 2	24.14	11.90+a
GROUP 3	22.64	11.90+a
GROUP 4	22.24	11.90+a
GROUP 5	21.57	11.90+a
GROUP 6		
1	24.49	11.90+a
2	24.84	11.90+a
3	25.64	11.90+a
4	26.14	11.90+a
5	26.64	11.90+a
GROUP 7		
1	24.64	11.90+a
2	25.64	11.90+a
3	26.14	11.90+a
4	26.54	11.90+a
GROUP 8	22.92	11.90+a
GROUP 9	25.14	11.90+a

Hazardous work - Anytime Operating Eningeers are involved with level C or above, \$2.50 per hour over regular rate.

FOOTNOTE:

a. Paid Holiday: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day,

POWER EQUIPMENT OPERATOR CLASSIFICATIONS (BUILDING)

GROUP 1: Self-contained crawler drill, hydraulic rock drill.

GROUP 2: Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirlies, dragline, boom truck (over 5 tons)

GROUP 3: Shovel, All backhoe (except tractor mounted rubber tired John Deere 510 or smaller), gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, Belcrete system, automated asphalt concrete plant and tractor road paver, boom truck (5 tons and under).

GROUP 4: Backhoe, (tractor mounted rubber tired equivalent to John Deere 510 or less), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, road roller, blacktop roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydrohammer, concrete spreader, concrete finishing machine, one drum hoist, power hosting (single drum), hoist - two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, cord and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinkey locomotive, skid steer loader, track

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

excavator 5/8 cu. yd. or smaller.

GROUP 5: Fork lift, high lift, lull, Oiler, fireman and heavy-duty greaser, boilers, and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, concrete pumps, electric submersible pump 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer and belcrete power pack (belcrete system), seeding, and mulching machines, pumps.

GROUP 6: Boom Length premiums over Group II rates:

1	over 130 ft	.35
2	over 185 ft	.70
3	over 210 ft	1.50
4	over 250 ft	2.00
5	over 295 ft	2.50

GROUP 7: Tower Crane premiums over Group II rates:

1	over 5 stories	.50
2	over 10 stories	1.50
3	over 15 stories	2.00
4	over 20 stories	2.50

GROUP 8: Master mechanic (other than nuclear work)

GROUP 9: Master mechanic on nuclear work

IRON0012Z 05/01/2001

	Rates	Fringes
ALBANY; COLUMBIA; FULTON (Albin, Bleecker, Broad, Johnstown, Mayfield, Northampton and Perth); GREENE, MONTGOMERY (Amsterdam, Charleston, Florida, Glen, Mohawk and Root); RENSSELAER, SARATOGA; SCHENECTADY; SCHOHARIE; and WASHINGTON COUNTIES:		

IRONWORKERS:

Structural, Ornamental, Rodman,		
Machinery Mover, Rigger, Fence Erector,		
Reinforcing, Stone Derrickmen	20.75	11.79
Sheeter	21.00	11.79
Sheeter, Bucker-up	20.875	11.79

* IRON0440X 05/01/2001

	Rates	Fringes
FULTON (Twps. of Caroga, Ephratah, Oppenheim, Stratford); MONTGOMERY (Twps of Canajoharie, Minden, Palatine, St. Johnsville):		

IRONWORKERS:

Structural, Ornamental, Rodman,		
Machinery Mover, Rigger, Fence		
Erector, Reinforcement, and Stone		
Derrickman	20.40	11.44

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* LABO0017C 07/01/2001

Rates Fringes
GREENE (Township of Catskill); COLUMBIA (Townships of Greenport, Germantown, Livingston, Hillsdale, Taghkanic, Gallatin, Copake, Ancram, Philmont and the City of Hudson):

LABORERS BUILDING:

GROUP 1	19.25	8.85
GROUP 2	22.50	8.85
GROUP 3	24.30	8.85
GROUP 4	27.05	8.85

LABORERS CLASSIFICATIONS

GROUP 1: Custodial work, flag person, traffic control person, tool room tender, temporary heat tender, temporary light tender, portable pump tender, portable generator tender, vehicle spotter, wellpoints, security and fire watch person, pitman, dumpmen

GROUP 2: Grading and back filling, temporary weather protection, demolition, dismantling person, wrecking, water proofing, poured gypsum roof work, drill chuck tender, stone and tile tender, mutli-building trades tender, construction tender, traffic and pedestrian striping, concrete curb and sidewalk setter, carpenter tender, styrofoam and similar installation, hod carrier, concrete, mason tender, scoffield builder (under 20') concrete sealing, concrete curing, concrete from striping, concrete vibrator, general clean-up.

GROUP 3: Asphalt laborer, gunite, sand blasting, pressure blasting, air chipping hammer, pavement breaker, jack hammer, hydraulic splitter, air track, explosive handler, pump crete machine, fire proofing pump and mixer, acoustic pump and mixer, power concret and grout mixer, power mortar and plaster mixer, hoist, signal person, walking power buggy, chain saw, chipping machine, power brush cutter, compressor, metallic pipelayer, non-metallic pipelayer, conduit layer, duct bank layer, retention and toxic and hazardous waste liners, discharge pipe, corrugated pipe, power tamper, power walk behind roller, radio control equipment including but not limited radio control tampers and rollers, radio control hammer and pavement breakers, radio control and excavator, landscaping and artificial truf, grade checker, asbestos abatement work, toxic lead and hazardous waste abatement related work prestressed and precast concrete; concrete saw, core drill, walk behind surface planer, power low fork lift, cleaning machine, megamixer, granite, stone or manufactured curbing, assembling & placing of gabion basket or similar, rip rap, level transit undewr laborers jurisdiction, concrete road walls, sound barriers, (wrecking, demolition, dismanting above 14 feet), (erecting and dismantling scaffold over 20 feet in height). Wagon drill, joy & gib, ingersoll-rand, heavy duty crawler-master type HCMZ, drill machines or equivalent, conveyor belt.

GROUP 4: Asbestos abatement work, toxic, lead and hazardous abatement and related work, leroy hydraulic or similar, high/low

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forklift, blaster, all working foremen including but not limited to grade, pipe, clearing, concrete, masonry, demolition, blacktop, drilling and landscaping.

LABORERS HEAVY & HIGHWAY:

GROUP 1:	19.25	10.50+a
GROUP 2:	23.75	10.50+a
GROUP 3:	24.85	10.50+a
GROUP 4:	25.55	10.50+a
GROUP 5:	28.30	10.50+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, President's Day, Memorial Day, Independence Day, Lincoln's Birthday, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day, provided the employee is an employee of the company prior to the scheduled holiday and reports to work the first day following the holiday unless prevented from doing so for legitimate reasons.

LABORERS CLASSIFICATIONS

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barricades, traffic patterns, all reflective type materials for traffic control, custodial work, traffic directors, temporary heat, or light tenders, tool room, dewatering pump men, pitmen, dumpmen, snow removal and firewatch

GROUP 2: General laborers, chuck tender, handling and distributing drinking water, distributing all tools and supplies of laborers, nipper, powder carrier, magazine tender, warehouse laborers, concrete man, vibrator man, mason tender, mortar man, spraying, brushing and covering of concrete for curing and preservative purposes, traffic striper, scaffold builder, concrete curb and sidewalk from setter

GROUP 3: Asphalt men, joint setter, signal man, wellpoints, conduit and duct layer, wire puller, rip rap and dry stone layers, steel rod carriers, core drill, rock splitter, Hilti gun-air, or electric, jackhammer, chipping hammer, bush hammer, pavement breaker, wagon drill, air track, jib rig, joy drill, gunnite and sandblasting, coal passer an other machine operator, power tool operators, sprayer and nozzle men on mulching and seeding machines, all guard rail and fence men, all seeding and sod laying, all landscape work, grade checkers, all bridge work, walk behind self-propelled power saw, walk behind tamper and rollers of all types, salvage stripping, wrecking and dismantling laborers (including bar men, cutting torch and burnermen), sheeting and shoring, bit grinder, operator of form pin pullers and drivers, sandblasting, joint and jet sealers, filling and wiring of baskets for gabion walls, permanent sing men, medium barrier, stawall or similar type product, chain saw operator, railroad track laborers, waterproofer, prestressed and pre-cast concrete, crubs, brick and block and stone pavers, power tool used to perform work usually done by laborers, power buggy and pumpcrete operator, fireproof, plaster and acoustic pump, asbestos, toxic, lead or

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hazardous materials abatement when protective clothing and equipment is not required, power brush cutter, retention liners, artificial turf, retaining walls, walk behind surface planer, welding related to laborers work, remote controlled equipment normally operated by laborers.

GROUP 4: Concrete finisher and form setter for concrete pavement, gunnite nozzle man, stone cutters, granite stone layer, manhole and catch basin on inlet installing, Ingersoll Rand heavy duty crawler-master HCMZ, any drill using a 4" or larger bit, mortar mixer and fork lift operator, laser men.

GROUP 5: Asbestos abatement work, toxic, lead or hazardous abatement when protective clothing and equipment is required. LeRoi hydraulic drill or similar, high/low fork lift, blaster.

TUNNEL, SHAFT & CASSION WORK

GROUP 1	24.20	10.50+a
GROUP 2	26.15	10.50+a
GROUP 3	26.65	10.50+a
GROUP 4	29.35	10.50+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, President's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

TUNNEL, SHAFT & CASSION WORK CLASSIFICATIONS

GROUP 1: Laborer, Pit and Dumpman, Chuck Tender, Brakeman and Powderman

GROUP 2: Miner and all machine men, Safety Miner, all shaft work, casson work, drilling, blow pipe, all air tools, tugger, scaling, nipper gunniting from pot to nozzle, bit grinder, signal man (top and bottom), shield driven tunnel, mixed face and soft ground liner plate tunnel in free air

GROUP 3: All work under Compressed air to include, but not limited to Miner and all Machine men, Safety Miner all scaling, Nipper, Gunniting from Pot to Nozzle, Bit Grinder Singal man and Concrete man4.

GROUP 4: Asbestos, toxic, lead or hazardous material abatement when protective clothing and equipment is required.

 * LABO0035A 07/01/2001

	Rates	Fringes
FULTON (TWPS OF CAROGA, EPHRATA, OPPENHEIM, AND STRAFORD);		
MONTGOMERY (TWPS OF CANAJOHARIE, MINDEN AND PALATINE, ROOT AND ST. JOHNSVILLE)		

LABORERS BUILDING:

Laborers	15.00	5.54
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Pipelayers, Motor Mixers, Motor Buggy Operator (Walk Behind)		
Power Lift (Walk Behind)	15.15	5.54
Wagon Drill Operator	15.40	5.54
Blasters, Form Setters, MotorBuggy Operator (Rider Type)	15.50	5.54
Asbestos Removal	16.50	5.54
Hazardous Waste Removal	17.00	5.54
(Hazardous waste removal includes, wetting,stripping, removal, scrapping, vaccuuming, bagging and disposing of all insulation materials, wheather they contain asbestos or not, from mechanical systems)		

HEAVY & HIGHWAY:

GROUP 1:	19.25	7.49+a
GROUP 2:	19.45	7.49+a
GROUP 3:	19.65	7.49+a
GROUP 4:	19.85	7.49+a
GROUP 5:	21.25	7.49+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day Labor Day, Thanksgiving Day and Christmas Day.

- GROUP 1: Common Laborers, Flagman, Outboard and Hand boats
- GROUP 2: Bull Float, Chain Saw, Concrete aggregate bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jackhammer, Mason Tender, Mortor Mixer, Pavement Breaker, Handlers of all steel mesh, Small generators for laborers's tools, Installation of bridge drainage Pipelayers, Vibrator type rollers, Tamper, Drill doctor, Tail or Screw Operator on asphalt paver, Water pump operator (1 1/2" and single diaphragm), Nozzle (aphlat, gunnite, seeding and sand blasting), Laborers on chain link fence erection, Rock splitter and power unit, Pusher type concrete saw and all other gas, electric, oil, and Air tool operators, Wrecking laborers
- GROUP 3: All rock or drilling machine operators (except quarry master amd similar type), Acetylene torch operators, and Asphalt paver, Powerman
- GROUP 4: Blasterers, Form setters, Stone or Granite Curb setters
- GROUP 5: Hazardous waste removal

LAB00157A

* LAB00157A 07/01/2001

Rates Fringes

FULTON (Twps. of Bleeker, Mayfield, Northhampton, Johnstown, Broadalbin and Perth); MONTGOMERY (Twps. of Mohawk, Glen,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Charleston, Amsterdam, and Florida); SARATOGA (Twps. of Day, Hadley, Edinburg, Corinth, Moreau, South Glens Falls, Providence, Greenfield, Wilton, Northcumberland, Galway, Milton, Saratoga Springs, Charlton, Ballston, Malta and Clifton Park); SCHENECTADY and SCHOHARIE COUNTIES.

LABORERS BUILDING:

GROUP 1	18.23	6.80
GROUP 2	19.58	6.80

LABORER CLASSIFICATIONS

- Group 1: Common Laborers
- Group 2: Asbestos and Toxic Materials

Commercial projects valued at \$800,000 or less and/or industrial projects valued at \$100,000 or less, excluding demolition work (the complete razing of structures) 75% of the basic wage scale with full benefits will apply

LABORERS HEAVY & HIGHWAY:

GROUP 1:	20.54	6.80+a
GROUP 2:	20.74	6.80+a
GROUP 3:	20.94	6.80+a
GROUP 4:	21.14	6.80+a
GROUP 5:	22.54	6.80+a

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

LABORER CLASSIFICATIONS

GROUP 1: Common laborers, flagman, outboard & hand boats

GROUP 2: Bull float, chain saw, concrete aggregate bin, concrete bootman, gin buggy, hand or machine vibrator jackhammer, mason tender, mortar mixer, pavement breaker, handlers of all steel mesh, small generators for laborers' tools, installation of bridge drainage pipelayers, vibrator type rollers, tamper, drill doctor, tail or screw operator on asphalt paver, water pump operator (1 1/2") and single diaphragm nozzle (asphalt, gunnite, seeding, and sand blasting), laborers on chain fence erection, rock splitter and power unit, pusher, type concrete saw and all other gas, electric, oil, and air tool operators, wrecking laborers

GROUP 3: All rock drilling machine operator (except quarry master and similar type), acetylene torch operator, and asphalt paver, powerman

GROUP 4: Blasterers, form setters, stone or granite curb setters

GROUP 5: Hazardous waste removal

LABO0190A 07/01/2000

Rates

Fringes

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ALBANY; RENSSELAER COUNTY, WASHINGTON COUNTY, GREENE COUNTY (except Catskill Township); COLUMBIA (Twps. of Styvesant, Stockport, Kinderhook, New Lebanon, Canaan, Ghent, Chatham and Austerlitz). SARATOGA COUNTY (Townships of Stillwater, Halfmoon, Saratoga)

LABORERS BUILDING:

GROUP 1	16.96	6.77
GROUP 2	18.31	6.77

LABORERS CLASSIFICATIONS

- GROUP 1: Common Laborers
- GROUP 2: Hazardous waste removal

Commercial projects vaueled at \$800,000 or less and/or industrial projects vaueled at \$100,000 or less excluding demolition work, (complete razing of structures) will receive 75% of basic wage scale with full fringes will apply

* LABO0190C 07/01/2001

	Rates	Fringes
ALBANY (except in the town of Colonie, north to the south side of First Street, Watervliet; along the west side of Lincoln Avenue north t Waterviler-Shaker Road (Route 155, south side), west to intersection of Route 9; the north on Route 9 (wast side) to Albany County line (Crescent Bridge and Mohawk River). RENSSELAER COUNTY. COLUMBIA (Twps. of Stuyvesant, Stockport, Kinderhook, New Lebanon, Cannan, Ghent, Chatham, Austerlitz). GREENE (except Catskill Township). WASHINGTON COUNTY. SARATAGO COUNTY (Begining southerly at the east side of route 9, running northerly along route 9 to Malta, including all of the townships of stillwater, continuing along the east shore of Saratoga Lake to the Saratoga city line, easterly of Satarago city line taking in all of the township of Schuyerville, New York		

LABORERS HEAVY & HIGHWAY:

GROUP 1:	19.79	7.50
GROUP 2:	19.99	7.50
GROUP 3:	20.19	7.50
GROUP 4:	20.39	7.50
GROUP 5:	21.79	7.50

FOOTNOTE:

PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day
Labor Day, Thanksgiving Day and Christmas Day.

LABORERS CLASSIFCAITONS

- GROUP 1: Common laborers, flagmen, outboard and hand boats
- GROUP 2: Bull float, chain saw, concrete aggregated bin, concrete bootman, gin buggy, hand or machine vibrator, jackhammer, mason tender, mortar mixer, pavement breaker handlers of all steel mesh, small generators for laborers' tools, installation of bridge drainage pipelayers, vibrator type rollers, tampers, drill

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doctor, Tail or screw operator on asphalt paver, Water pump operator (1 1/2" and Single diaphragm) Nozzle (asphalt, gunnite, seeding, and sand blasting) Laborers on Chain link fence erection, rock splitter and power unit, pusher type concrete saw and all other gas, electric, oil, air tool operators, and wrecking laborers

GROUP 3: All rock air drilling machine operators (except quarry master and similar type), acetylene torch Operators, and asphalt paver, powderman

GROUP 4: Blasterers, form setters, stone or granite curb setters

GROUP 5: Hazardous waste removal

LABO1000B 06/01/2000

Rates Fringes

COLUMBIA (Twps. of Ancram, Claverack, Clermont, Copake, Galtin, Germantown, Greenport, Hillsdale, Hudson, Livingston, Philmont, Taconic)

LABORERS (BUILDING)

GROUP 1	21.25	10.30+a
GROUP 2	21.75	10.30+a
GROUP 3	22.25	10.30+a
GROUP 4	23.25	10.30+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day

LABORERS CLASSIFICATIONS (BUILDING)

GROUP 1 - Mason tenders, carpenter tenders, laborer stripping and cleaning forms, laborer grading and digging ditches, sweepers, cleaners.

GROUP 2 - Hod carriers, plasterers' tenders, scaffold builders (padlock and self-supporting scaffold 14 ft. or under all runways), mortar mixers (machines and hand), concrete mixers (by machine under 21E), vibrators, form setters, asphalt rakers, handling reinforcement rods, drillers, jackhammer operator, signalman, gunniting, motorbugs, water pump 2" or under, barco machine, wreckers, paving breakers, power saw operators, other machine operators.

GROUP 3 - Blasters, laser beam operator

GROUP 4 - Asbestos removal work, toxic, & hazardous abatement related work

LABO1000E 05/01/2000

Rates Fringes

COLUMBIA (Twps. of Greenport, Claverack, Hillsdale, Livingston, Germantown, Taghkanic, Copake, Clermont, Gallatin, Ancram):

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LABORERS (HEAVY & HIGHWAY):

GROUP 1	18.20	9.95+a
GROUP 2	21.71	9.95+a
GROUP 3	21.96	9.95+a
GROUP 4	22.71	9.95+a
GROUP 5	24.41	9.95+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagperson; Placing and maintenance of all flares, cones, lights, signs, barricades; traffic control custodial work; traffic directors; temporary heat or light tenders; tool rooms.

GROUP 2: General Laborers, Dumpman, Pitman.

GROUP 3: Concrete man; Signal man; Pipelayers; Rip rap; Dry stone layer; Jack hammer; Powderman; Highscalers power buggy operator; Steel rod carrier; Vibratory operator; other machine operator; wrecking; Vibrator operator-compact; Guniting and sandblasting; Water pump 2" or under; Nipper; Chucker Asphalt Workers.

GROUP 4: Asphalt raker; Asphalt Screeman; Drillers (all); Laser Beam Operator; Form Setter/Aligners; Blasters.

GROUP 5: Asbestos Removal work, toxic & hazardous & abatement related work.

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Presidents Day, Good Friday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Novmeber Election Day, Thanksgiving Day, and Christmas Day

PAIN0009G 05/01/2001

	Rates	Fringes
Zone #1		
Entire counties of ALBANY, FULTON, MONTGOMERY, RENNSELAER, SCHOHARIE, SCHENECTADY AND SARATOGA		

PAINTERS:

Painters, Drywall Finishers,		
Spray, Lead Abatement Workers	20.44	3.05
Structural Steel	21.44	3.05
Bridges	33.27	3.05

ZONE #2

All of WASHINGTON County

PAINTERS:

Painters, Drywall Finishers,		
Spray, Lead Abatement Workers	19.64	3.85
Structural Steel	20.64	3.85
Bridges	32.96	3.85

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PAIN0155A 06/01/1999

	Rates	Fringes
COLUMBIA and GREENE COUNTIES		
PAINTERS:		
PAINTER\PAPERHANGER	19.49	8.96
DRYWALL FINISHERS	19.49	8.96
SPRAY RATE	20.49	8.96
STRUCTURAL STEEL	29.74	8.96
BRIDGES SWING STAGE	29.74	8.96
BOATSWAIN CHAIR, PICK & CABLES OVER 20 FEET		
LEAD ABATEMENT WORK	19.49	8.96

PAIN0155C 06/01/1999

	Rates	Fringes
GLAZIERS	18.20	4.36

PLUM0007A 05/01/2001

	Rates	Fringes
ALBANY; COLUMBIA; FULTON; GREENE; MONTGOMERY; RENSSELAER; SCHENECTADY; SARATOGA (Towns of Charlton, Clifton Park, Galway, Halfmoon, Milton, Stillwater and Waterford)		
PLUMBER & STEAMFITTER	26.27	8.37

* PLUM0773B 05/01/2001

	Rates	Fringes
SARATOGA (Remainder of County); WASHINGTON COUNTY:		
PLUMBERS/STEAMFITTERS	21.60	10.62

ROOF0203C 05/15/1997

	Rates	Fringes
SCHOHARIE COUNTY:		
ROOFERS	17.50	6.76

ROOF0241A 06/01/1998

	Rates	Fringes
ROOFERS	17.70	6.77

SFNY0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTER	26.15	6.00

* SHEE0083A 06/01/2001

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEET METAL WORKER

22.99

10.28+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day. If any of these holidays fall on a Saturday or Sunday, either the preceding Friday or following Monday will be observed as the holiday.

TEAM0294B 05/01/1996		
	Rates	Fringes
BUILDING CONSTRUCTION		
TRUCK DRIVERS:		
GROUP 1	16.42	5.62+a
GROUP 2	16.72	5.62+a

FOOTNOTES:

a. One week vacation after 1 year; 2 weeks vacation after 5 years.

TRUCK DRIVERS BUILDING CLASSIFICATIONS

GROUP 1: Straight, winch, transit mix on job site, road oilers, dump, panel, pick-up, water and fuel trucks on site (including nozzle).

GROUP 2: Euclid or similar equipment, lowboy or lowboy trailers.

* TEAM0294P 07/01/2001		
	Rates	Fringes
TRUCK DRIVERS (HEAVY & HIGHWAY)		
GROUP 1	19.57	8.55+a
GROUP 2	19.62	8.55+a
GROUP 3	19.67	8.55+a
GROUP 4	19.82	8.55+a
GROUP 5	19.97	8.55+a

TRUCK DRIVERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Pick-ups, panel trucks, flatboy material trucks (straight jobs), single axle dump trucks, dumpsters, receivers, greasers, truck tireman.

GROUP 2: Tandems, batch trucks, mechanics.

GROUP 3: Semi-trailers, low-boy trucks asphalt distributor trucks, agitator, mixer trucks and dumpcrete type vehicles, truck mechanic, fuel truck.

GROUP 4: Specialized earth moving equipment - euclid type or similar off-highway equipment, where not self-loaded, straddle (ross) carrier, self-contained concrete unit.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5: Off-highway tandem back dump, twin engine equipment and double hitched equipment where not self-loaded.

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, provided the employee works the day before and the day after the holiday.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division

U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION NY010007 07/06/2001 NY7

Date: July 6, 2001
 General Decision Number **NY010007**

Superseded General Decision No. NY000007

State: **New York**

Construction Type:
BUILDING
 HEAVY
 HIGHWAY

County(ies):
 DUTCHESS SULLIVAN
 ORANGE ULSTER

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartment up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/06/2001
3	05/04/2001
4	06/01/2001
5	07/06/2001

COUNTY(ies):
 DUTCHESS SULLIVAN
 ORANGE ULSTER

ASBE0040M 05/01/1997

	Rates	Fringes
SULLIVAN AND ULSTER COUNTIES		
INSULATOR/ASBESTOS WORKERS (includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems	19.680	10.18

HAZARDOUS WASTE HANDLERS Duties limited to preparation wetting; stripping; removal; scrapping; vacuuming; bagging; and disposing of all insulation materials whether they contain asbestos or not from mechanical systems	16.07	4.70
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ASBE0091M 07/01/1999

	Rates	Fringes
DUTCHESS AND ORANGE COUNTIES		

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INSULATOR/ASBESTOS WORKER
 (Includes application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems) 27.87 16.52

HAZARDOUS MATERIAL HANDLER
 Duties limited to preparation, wetting, stripping, removal scrapping, vacuuming, bagging and disposing of all insulation materials; whether they contain asbestos or not from mechanical systems 20.85 4.75

BOIL0005A 09/01/2000

	Rates	Fringes
BOILERMAKER	34.92	20.73+a

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Years Eve

BRNY0029C 06/01/1999

	Rates	Fringes
DUTCHESS, ORANGE (Excluding the town of Tuxedo), SULLIVAN, AND ULSTER COUNTIES		
BUILDING CONSTRUCTION		
Bricklayers, Cement Masons, Plasterers, Stone Masons	21.46	11.20
HIGHWAY CONSTRUCTION		
Bricklayers, Cement Masons, Plasterers, Stone Masons	21.96	11.20

ORANGE COUNTY (Including the town of Tuxedo)

BUILDING CONSTRUCTION		
Bricklayers, Cement Masons, Plasterers, Stone Masons	25.38	12.80
HEAVY & HIGHWAY CONSTRUCTION		
Bricklayers, Cement Masons, Plasterers, Stone Masons	25.88	12.80

CARP0019A 06/01/1999

	Rates	Fringes
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BUILDING CONSTRUCTION

Carpenters, Millwrights, Pile Drivers	23.50	11.10
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HEAVY & HIGHWAY CONSTRUCTION

Carpenters, Millwrights, Pile Drivers	23.50	11.10
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CARP1456E 07/01/2000		
	Rates	Fringes
DOCKBUILDERS	33.39	22.81

ELEC0363A 04/01/2001		
	Rates	Fringes
ORANGE COUNTY (HARRIMAN, WOODBURY, MONROE, TUXEDO, CHESTER, WAR- WICK, WAWAYHANDA, GOSHEN, WALLKILL AND MIDDLETON TOWNSHIPS)		

ELECTRICIAN	32.00	14.42
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DUTCHESS, SULLIVAN, ULSTER AND THE REMAINDER OF ORANGE COUNTY

ELECTRICIAN	28.00	14.18
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ELEC1249B 05/06/2001		
	Rates	Fringes
LINE CONSTRUCTION (LINEMAN)		

LIGHTING AND TRAFFIC SIGNAL
INCLUDING ANY AND ALL FIBER
OPTIC CABLE NECESSARY FOR THE
TRAFFIC SIGNAL SYSTEMS, AND
TRAFFIC MONITORING SYSTEMS, ROAD
WEATHER INFORMATION SYSTEMS

Lineman and Technician	27.13	7.50+6.5%+a
Groundman Digging Machine Operator	24.42	7.50+6.5%+a
Mechanic	21.70	7.50+6.5%+a
Groundman Truck Driver (Tractor Trailer Unit)	23.06	7.50+6.5%+a
Groundman Truck Driver	21.70	7.50+6.5%+a
Flagman	16.28	7.50+6.5%+a

PAID HOLIDAYS:

a. Memorial Day, New Year's Day, President's Day, Good
Friday, Decoration Day, Independence Day, Labor Day, Thanksgiving
Day, Christmas Day, and Election Day for the President of the
United States and Election Day for the Governor of New York
State, provided the employee works two days before or two days
after the holiday.

ELEC1249D 05/06/2001		
	Rates	Fringes
LINE CONSTRUCTION:		

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Substation:

Lineman & Technician	28.75	7.50+7%+a
Cable Splicer	31.63	7.50+7%+a
Groundman digging machine Operator	25.68	7.50+7%+a
Mechanic	23.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	24.44	7.50+7%+a
Ground man truck driver	23.00	7.50+7%+a
Flagman	17.25	7.50+7%+a

Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation

Lineman & Technician	30.04	7.50+7%+a
Cable Splicer	33.04	7.50+7%+a
Groundman Digging Machine Operator	27.04	7.50+7%+a
Mechanic	24.03	7.50+7%+a
Groundman Truck Driver (Tractor-trailer unit)	25.53	7.50+7%+a
Groundman Truck Driver	24.03	7.50+7%+a
Flagman	18.02	7.50+7%+a

Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities (where no other trades are or have been involved):

Lineman and Technician	28.75	7.50+7%+a
Cable Splicer	28.75	7.50+7%+a
Groundman digging machine operator	25.88	7.50+7%+a
Mechanic	23.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	24.44	7.50+7%+a
Groundman Truck driver	23.00	7.50+7%+a
Flagman	17.25	7.50+7%+a

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Overhead transmission line work
(where other trades are or
have been involved):

Lineman and Technician	31.25	7.50+7%+a
Cable Splicer	31.25	7.50+7%+a
Groundman digging machine operator	28.13	7.50+7%+a
Mechanic	25.00	7.50+7%+a
Groundman truck driver (tractor trailer unit)	26.56	7.50+7%+a
Groundman truck driver	25.00	7.50+7%+a
Flagman	18.75	7.50+7%+a

TELEPHONE, CATV FIBEROPTICS
CABLE AND EQUIPMENT

Cable splicer/Central Office Person	19.61	2.80+3%
Installer Repairman-Teledata Lineman/Tecnician-Equipment Operator	18.63	2.80+3%
Groundman	10.84	2.80+3%
TREE TRIMMER	15.89	3.80+3%+b

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

b. New Years Day, Washington's Birthday, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Thanksgiving Day, Day after Thanksgiving Day and Christmas Day

ELEC1249I 05/06/2001

Rates Fringes

SULLIVAN COUNTY

LINE CONSTRUCTION

LIGHTING AND TRAFFIC SIGNAL
LINEMAN INCLUDING ANY AND ALL
FIBER OPTIC CABLE NECESSARY FOR
THE TRAFFIC SIGNAL SYSTEM, TRAFFIC
MONITORING SYSTEMS AND ROAD WEATHER
INFORMS..

Lineman & Technician	25.86	7.50+6.5%+a
Groundman Digging Machine Operator	23.27	7.50+6.5%+a
Mechanic	20.69	7.50+6.5%+a

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Groundman Truck Driver (tractor trailer unit)	21.98	7.50+6.5%+a
Groundman Truck Driver	20.69	7.50+6.5%+a
Flagman	15.52	7.50+6.5%+a

FOOTNOTE:

a. New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day, for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEV0138A 05/01/2001		
	Rates	Fringes
ELEVATOR CONSTRUCTOR MECHANIC	35.055	9.99+a+b

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

b. PAID VACATION: Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 5 years of service, and 6% for employees with less than 5 years of service.

* ENGI0106D 07/01/2001		
	Rates	Fringes
NORTHERN PART OF DUTCHESS (To The Northern Boundary line of the City of Poughkeepsie)		
POWER EQUIPMENT OPERATORS HEAVY AND HIGHWAY		
GROUP 1	26.36	12.80+a
GROUP 2	25.93	12.80+a
GROUP 3	25.02	12.80+a
GROUP 4	22.45	12.80+a
GROUP 5	27.54	12.80+a
GROUP 6	26.86	12.80+a
GROUP 7	27.36	12.80+a

POWER EQUIPMENT OPERATORS HEAVY & HIGHWAY CLASSIFICATIONS

GROUP 1:- Boom Truck (over 5 tons), Crane, Cherry Picker (over 5 ton capacity), Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type) Pile Driver, Truck Crane

GROUP 2:- Automated Concrete Spreader (CMI Type), Automated Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck (5 tons and under),

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Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self-Propelled, Slipform, Concrete Pump (8" or over), Dredge, Dual Drum Paver, Excavator (All Purpose-Hydraulically Operated) (Gradall or similar), Front End Loader (4 cu. yd. and over), Head Tower (Sauerman or Equal), Hoist (Two or Three drum), Holland Loader, Mine Hoist, Mucking Machine or Mole, Pavement Breaker (SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver, Tractor Drawn Belt-type loader, Truck or Trailer Mounted Log Chipper (Self feeder), Tug Operator (Manned Rented Equipment excluded), Tunnel Shovel

GROUP 3 - Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Spreader and Mixer, Blacktop Plant (Non-Automated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage-Hoist, Central Mix Plant (Non-Automated) and All Concrete Batching Plants, Cherry Picker (5 Tons Capacity and Under), Compressors (4 or less) Exceeding 2000 C.F.M. Combined Capacity, Concrete Paver (over 16S), Concrete Pump (Under 8"), Crusher, Diesel Power Unit, Drill Rigs (Tractor Mounted), Front End Loader (under 4 c.y.), Hi-Pressure - Boiler (15 lbs. and over), Hoist (One Drum) Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive, Maintenance Engineer/Greaseman/Welder, Mixer (For Stabilized Base Self-Propelled), Monorail Machine, Plant Engineer, Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (For Soil Stabilization), Road Widener, Roller (All Above Subgrade), Sea Mule, Self-contained Ride-on-Rock Drill, excluding Air Track Type Drill, Skidder, Tractor With Dozer and/or Pusher, Trencher, Tugger-Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat.

GROUP 4 - A-Frame Winch Hoist on Truck, Ballast Regulator (Ride-On), Compressors (4 not to exceed 2000 C.F.M. Combined Capacity; or 3 or less with more than 1200 C.F.M. but not to exceed 2000 C.F.M.), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 of Any Type Of Combination), Concrete Pavement Spreaders and Finishers, Conveyor, Directional Drill Machine Locator, Drill Core, Electric Pump Used In Conjunction with Well Point System, Farm Tractor with Accessories, Fine Grade Machine, Fork Lift (under 15 ft.), Grout Pump Gunitite Machine, Hammers (Hydraulic-Self-Propelled), Hydra-Spiker (Ride-On), Hydro-Blaster Water, Post Hole Digger and Post Driver, Power Sweeper, Roller (Grade and Fill), Scarifier (Ride-On Spansaw (Ride-On), Skid Steer loader (Bobcat or similar), Sumpersible Electric Pump (When Used In Lieu Of Well Point System), Tamper (Ride-On), Tie Extractor (Ride-On), Tie Handler, Tie Insertter (Ride-On), Tie Spacer (Ride-On), Tire Repair, Track Liner, Tractor With Towed Accessories, Vibratory Compactor, Vibro Tamp, Well Point, Aggregate Plant, Boiler (Used In Conjunction With Production), Cement and Bin Operator, Compressors (3 or less not to Exceed 1200 C.F.M. Combined Capacity), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less of Any Type or Combination), Concrete Paver or Mixer (16S and under), Concrete Saw (Self-Propelled), Fireman, Form Tamper, Hydraulic Pump (Jacking System), Light Plants, Mulching Machine, Oiler, Parapet-Concrete or Pavement Grinder, Power Broom (Towed), Power

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Heaterman, Revinius Widener, Shell Winder, Steamcleaner, Tractor.

GROUP 5 - Master Mechanic

GROUP 6 - Crane Premium with Boom Length and Jib 150' - 199'

GROUP 7 - Crane Premium with Boom Length and Jib 200' and Over.

Tower Crane Premium	\$.50
Hazmat work premium	\$2.50
Hydrographic	\$.50

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, provided the employee works the day before and the day after the holiday.

ENGI0106M 05/01/2001

	Rates	Fringes
NORTHERN PART OF DUTCHESS (TO THE NORTHERN BOUNDARY LINE OF THE CITY OF POUGHKEEPSIE) BUILDING CONSTRUCTION		

POWER EQUIPMENT OPERATORS:

GROUP 1:	22.67	11.90+a
GROUP 2:	24.14	11.90+a
GROUP 3:	22.64	11.90+a
GROUP 4:	22.24	11.90+a
GROUP 5:	21.57	11.90+a
GROUP 6:		
1	24.49	11.90+a
2	24.84	11.90+a
3	25.64	11.90+a
4	26.14	11.90+a
5	26.64	11.90+a
GROUP 7		
1	24.64	11.90+a
2	25.64	11.90+a
3	26.14	11.90+a
4	26.54	11.90+a
GROUP 8	22.92	11.90+a
GROUP 9	25.14	11.90+a

Hazardous work - Anytime Operating Eningeers are involved with level C or above, \$2.50 per hour over regular rate.

FOOTNOTE:

a. Paid Holiday: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day,

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Self-contained crawler drill, hydraulic rock drill.

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GROUP 2: Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirllies, dragline, boom truck (over 5 tons)

GROUP 3: Shovel, All backhoe (except tractor mounted rubber tired John Deere 510 or smaller), gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, Belcrete system, automated asphalt concrete plant and tractor road paver, boom truck (5 tons and under).

GROUP 4: Backhoe, (tractor mounted rubber tired equivalent to John Deere 510 or less), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, road roller, blacktop roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydrohammer, concrete spreader, concrete finishing machine, one drum hoist, power hosting (single drum), hoist - two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, cord and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinkey locomotive, skid steer loader, track excavator 5/8 cu. yd. or smaller.

GROUP 5: Fork lift, high lift, lull, Oiler, fireman and heavy-duty greaser, boilers, and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, concrete pumps, electric submersible pump 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer and belcrete power pack (belcrete system), seeding, and mulching machines, pumps.

GROUP 6: Boom length premiums over GROUP II rates:

1 over 130 ft	.35
2 over 185 ft	.70
3 over 210 ft	1.50
4 over 250 ft	2.00
5 over 295 ft	2.50

GROUP 7: Tower Crane Premium over GROUP II rates:

1 over 5 stories	.50
2 over 10 stories	1.50
3 over 15 stories	2.00
4 over 20 stories	2.50

GROUP 8: Master Mechanic (other than nuclear work)

GROUP 9: Master Mechanic on nuclear work

ENGI0137B 03/05/2001

DUTCHESS COUNTY (POUGHKEEPSIE AND SOUTH THERE-OF) Rates Fringes

BUILDING CONSTRUCTION

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POWER EQUIPMENT OPERATORS:

GROUP 1-A	31.65	15.95+a
GROUP 1-B	29.25	15.95+a
GROUP 2-A	30.60	15.95+a
GROUP 3-A	29.50	15.95+a
GROUP 3-B	28.05	15.95+a
GROUP 4-A	29.20	15.95+a
GROUP 4-B	27.90	15.95+a
GROUP 5-A	28.10	15.95+a
GROUP 5-B	26.65	15.95+a
GROUP 6-A-1	33.25	15.95+a
GROUP 6-A-2	32.20	15.95+a
GROUP 6-A-3	31.10	15.95+a
GROUP 6-A-4	33.70	15.95+a
GROUP 6-A-5	36.65	15.95+a
GROUP 6-A-6	28.90	15.95+a
GROUP 6-A-7	38.45	15.95+a
GROUP 6-B-1	25.30	15.95+a
GROUP 6-B-2	26.50	15.95+a
GROUP 6-B-3	26.55	15.95+a
GROUP 6-B-4	26.65	15.95+a
GROUP 6-B-5	29.00	15.95+a

NOTES: Hazmat: 20% above regular rage

Pumping operation Premium	.50
Crane Operators (100-149 ft)	2.00
Crane Operators (149 ft +)	3.00
Loader Operators (over 5 cu yd)	.50
Shovel Operators (over 4 cu yd)	1.00

FOOTNOTE:

- a. New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus Lincoln's Birthday, Washington's Birthday, Good Friday, Columbus Day, November Election Day, Veteran's Day.

POWER EQUIPMENT OPERATORS CLASSIFICATION

GROUP 1-A: Carrier- trailer horse; concret-portable hoist; crane & hoist engineer-steel (concrete, material, super structure sub-structure); derrick (stone-steel); elevator & cage; hoist-single/double or triple drum; hoist-portable mobile unit; hoist engineer-concert (crane-derrick-mine hoist); hoist engineer-material; overhead crane; power house plant; telephies (cableway); whirly; maintenance engineer; Lull hilift or similar; hydraulic crane 25 ton and over; cherry picker 25 tons and over; backhoe Oliver 88; fordson; dynahoe; dual purpose and similar machines; Barber Green Loader-euclid loader or similar type; conway or similar mucking macking machines; dragline; gradall; shovel; backhoe etc. (crawler or truck); front end loaders; hydraulic boom; jersey spreader; lift slab console; letournequ or tounapull (scrapers over 20 yds struck); mucking machines; pavement breaker (air ram); paver (concrete); road boring machine; road mix machines; ross carrier and similar machines; post hole digger; shovel (tunnels); side boom; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yds. trenching

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machines vermeer concrete saw trencher and similar; tractor type demolition equipment; winch truck (a frame); hydraulic crane over 10 ton up to 25 ton); cherry picker over 10 ton up to 25 ton)

GROUP 1-B: Compressor (steel erection); pulse meter and push button buzz box; elevator; mechanic (outside) all types; welder; scrapers 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers; roller 4 tons and over.

GROUP 2-A: Compactor self-propelled; grader; bulldoze D7 and similar tractors with a draw bar horsepower of 100 or over; bulldozer D6 and under; welder; scraper 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers.

GROUP 3-A: Asphalt plant; boiler (high pressure); concrete mixing plants; concrete pump; firemen; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes); mixer concrete - 21E and over; portable asphalt plant; portable batch plant; portable crusher; quarry master; stone crusher; well drilling machine and well point system; cherry picker under 10 tons; hydraulic crane under 10 tons; concert buffy; one yard an up ride on dumper (benford or similar).

GROUP 3-B: Compressor over 125 cu. feet; conveyor belt machine regardless of size; lighting unit (portable & generator); welding machine (steel erection and excavation); and compressor plant; stud machine; ladder hoist.

GROUP 4-A: Air tractor drill; batch plant; bending machine; concrete breaker; concrete spreader; curb cutter machine; farm tractor (all types); finishing machine-concrete; hepavac clean air machine (all similar types: removal of asbestos etc.); material hopper-sand-stone-cement; mixer-concrete-under 21E; mulching grass spreader; pump-gypsum, etc., pump-plaster-grout -fireproofing; shop mechanic (not employed on job site); roller under 4 ton; spreading and fine grading machine; steel cutting machine; syphon pump-air-steam; tar joint machine; turbo jet burner or similar equipment; vibrator (1 to 5); fine grading machine; roof hoist (tugger hoist); television cameras-water-sewer-gas-etc.

GROUP 4-B: Compressor to 135 feet; dust; dust collector; heater all types; pump; pump station (water and sewer); steam jenny; sweeper; chipper; mulcher.

GROUP 5-A: Concrete saw; oiler fuel truck and oiler grease truck.

GROUP 5-B: Oiler; paint compressor; motorized roller (walk behind); stockroom attendant.

GROUP 6-A-1: master mechanic.

GROUP 6-A-2: helicopter hoist operator.

GROUP 6-A-3: welder-certified.

GROUP 6-A-4: engine-pile driver.

GROUP 6-A-5: helicopter-pilot

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GROUP 6-A-6: helicopter-signalman

GROUP 6-A-7: Engineers for all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).

GROUP 6-B-1: Utility man.

GROUP 6-B-2: warehouse man.

GROUP 6-B-3: oiler (asphalt paver)

GROUP 6-B-4: cable splicer.

 ENGI0137C 03/05/2001

	Rates	Fringes
DUTCHESS (Poughkeepsie and South thereof)		
POWER EQUIPMENT OPERATORS (HEAVY & HIGHWAY)		
GROUP 1	33.99	16.11+a
GROUP 1-A	31.80	16.11+a
GROUP 1-B	32.90	16.11+a
GROUP 2-A	30.51	16.11+a
GROUP 2-B	30.63	16.11+a
GROUP 3	30.00	16.11+a
GROUP 4-A	27.38	16.11+a
GROUP 4-B	23.71	16.11+a
GROUP 5-A-1	33.60	16.11+a
GROUP 5-A-2	32.59	16.11+a
GROUP 5-A-3	38.56	16.11+a
GROUP 5-A-4	34.35	16.11+a
GROUP 5-A-5	31.40	16.11+a
GROUP 5-A-6	36.91	16.11+a
GROUP 5-A-7	30.37	16.11+a
GROUP 5-A-8	30.64	16.11+a
GROUP 5-B-1	22.62	16.11+a
GROUP 5-B-2	25.69	16.11+a
GROUP 5-B-3	22.29	16.11+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Boom Truck; Cherry Picker; Clamshell; Crane, (Crawler, Truck); Dragline; Rough Terrain Crane

GROUP 1-A: Auger; Auto Grader; Dynahoe and Dual purpose and similar machines; Boat Captain; Boring Machine (all types); Bull Dozer- all sizes; Central Mix Plant Operator; Chipper-all types; Close circuit t.v.; Compactor with Blade; Concrete Portable Hoist; C.M.I. or similar; Conway or similar mucking machines; Gradall, Shovel Backhoe, etc. Grader; Derrick, (Stone- Steel; Elevator & cage, materials or passengers; Front end loaders over 1 1/2 yds.; Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit; Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist); Hoist Engineer-Material, Hydraulic Boom; Letourneau or Tournapull

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(Scrapers over 20 yds. struck); Log Skidder; Movable Concrete Barrier Transfer & Transport Vehicle; mucking machines; overhead crane; paver (concrete); pulsemeter; push button (buzz box) elevator; road mix machines; Robot Hammer (brock or similar), Ross carrier and similar machines; shovels (tunnels); side boom; Slip Form Machine; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yards; trenching machines; telephies-vermeer concrete saw trencher and/or similar; tractor-type demolition equipment, Whirly

GROUP 1-B: Road Paver, Asphalt

GROUP 2-A: Balast Regulators; Compactor self-propelled; Cow Tracks; Fusion Machine; Rail Anchor Machines; Roller 4 ton and over; Scrapers - 20 yards struck; Switch Tampers; Vibratory roller, etc.

GROUP 2-B: Mechanic (outside) all types

GROUP 3-A: Air tractor drill; asphalt plant; batch plant; boiler (high pressure; concrete breaker; concrete pump concrete spreader; curb cutter machine; farm tractor (all types); finishing machine (concrete); fine grading machine; fireman; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes), maintenance engineer; machine pulling sheeps foot roller; material hopper; mixer concrete - 21-E and over; mulching grass spreader; portable asphalt plant, portable batch plant, portable crusher; powerhouse plant; quarry master; roller under 4 ton; spreading and fine grading machine; steel cutting machine; stone crusher; sweeper; turbojet burner or similar; well drilling machine ; winch truck "A" frame. John Henry Drill or similar.

GROUP 4-A: Service men (fuel or grease truck).

GROUP 4-B: Oiler; Compressor - compressor plant; paint compressor -steel erection; conveyor belt machine; lighting unit (portable & generator); oiler; pumps - pump station-water-sewer-gypsum- plaster, etc.; roller-motorized (walk-behind); welding machine (steel erection excavation); well point system; bending machine; dust collector; mixer - concrete under 21-E; heater all types; steam jenny; syphon pump-air-steam; tar joint machine; vibrator (1 to 5); Compressor Truck Mounted (2-6)

GROUP 5-A-1: Master Mechanic

GROUP 5-A-2: Helicopter hoist operator.

GROUP 5-A-3: Engineer - all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).

GROUP 5-A-4: Hoist Engineer - steel - sub-structure; Engineer-- Pile Driver

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5-A-5: Welder-Certified

GROUP 5-A-6: Helicopter - pilot.

GROUP 5-A-7: Helicopter - signalman.

GROUP 5-A-8: Jersey-spreader, pavement breaker (air ram); Post Hole Digger

GROUP 5-B-1: Utility Man

GROUP 5-B-2: Concrete Saw

GROUP 5-B-3: Oiler

NOTES:

Loader Operator (over 5 cu yds) .50
Shoval Operators (over 4 cu yd) 1.00
Hazmat premium over regular rate 20%

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day; Lincoln's Birthday; Good Friday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; November Election Day; Thanksgiving Day; and Christmas Day

* ENGI0825K 07/01/2001

ORANGE, ULSTER AND SULLIVAN COUNTIES Rates Fringes

POWER EQUIPMENT OPERATORS (BUILDING HEAVY & HIGHWAY):

Table with 3 columns: Group, Rates, Fringes. Rows for GROUP 1 through GROUP 6.

NOTES:

Hazmat Premium 20%
Hydrographic Premium .50

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (BLDG, HEAVY & HWY)

GROUP 1: Autograde-Pavement-Profiler (CMI and Similar Type); utograde-Pavement-Profiler (CMI and Similar Types);Autograde Slipform Paver (CMI and Similar Types); Backhoe; Central Power Plants (all types); Concrete Paving Machine (s-240 and Similar Types); Cranes (All Types, Including Overhead and Straddle Traveling Type); Cranes, Gantry; Derricks (Land, Floating or Chicago Boom Type); Drillmaster/Quartmaster (Down the Hole Drill) Rotary Drill; Self-Propelled, Hydraulic Drill, Self-Powered Drill Draglines, Elevator Graders, Front End Loaders (5 yds. and over), Gradalls, Grader: Rago, Helicopters (Copilot), Helicopters, (Communication Engineer), Locomotive (large), Mucking Machines, Pavement and Concrete Breaker (Superhammer, Hoe Ram, Brokk 250

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

and Similar Types), Pile Driver (length of boom including length of leads shall determine premium rate applicable), Roadway Surface Grinder Scooper (loader and shovel), Shovels, Tree Chopper with Boom, Trench Machines, Tunnel Boring Machines.

GROUP 2: "A" Frame; Backhoe (Combination); Boom Attachment on Loaders (Rate based on size of bucket) not applicable to Pipehook) Boring and Drilling Machines, Brush Chopper, Shredder and Tree Shredder Tree Shearer, Cableways, Carry-alls, Concrete Pump, Concrete Pumping System, Pumpcrete and Similar Types, Conveyors, 125 ft and over; Drill Doctor (duties include dust collector, maintenance), Front End Loader (22 yds. but less than 2 yds.), Graders (Finish); Groove Cutting Machine (ride on type), Heater Planer; Hoists: (all type hoists, Shall Also Include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft, Caisson, Snorkel Roof, and or any other similar type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type). Long Boom Rate to Be Applied if Hoist is "outside material lower hoist"; Hydraulic Cranes-10tons and Under; Hydro-Axe; Hydro-Blaster; Jacket (Screw Air Hydraulic Power Operated Unit or Console Type: Not Hand Jack or Pile Load Test Type), Log Skidder; Pans, Pavers (all) Concrete; Plate and Frame Filter Press; Pumpcrete Machines; Squeeze Crete and Concrete Pumping (regardless of size); Scrapers; Sidebooms; Straddle Carrier, Ross and Similar Types; Vacuum Truck; Whip Hammer; Winch Trucks (Hoisting).

GROUP 3: Asphalt Curbing Machine, Asphalt Plant Engineer, Asphalt Spreader; Autograde Tube Finisher & Texturing Machine (CMI and Similar types) Autograde Curecrete Machine (CMI and Similar Types); Bar Bending Machines (power), Batchers, Batching Plant and Crusher on-site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozers (all); Car Dumpers (A:road); Chief of Party; Compressor and Blower Type Units (used Independently or Mounted On Dual Purpose Trucks, On Job Site or In Conduction with Job Site, In Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressor 92 or 3 in Battery); Concrete Finishing Machines; Concrete Saws and Cutters (ride on type); Concrete Spreaders, Hetzel, Rexomatic and Similar types; Concrete Vibrators; Conveyors, Under 125 ft), Crushing Machines, Ditching Machine, Small (ditchwitch, Vermeer or Similar type); Dope Dots (mechanical with or without pump), dumpsters; Elevator; Fireman; Forklifts (economobile, lull, and similar types of equipment); Front End Loaders (1 yd. and over but less than 2 yds.); Generators (2 or 3 in Battery/ within 100 ft); Giraffe Grinders, Graders and Motor Patrols; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibratory (in conduction with generators); Hoists (Roof, Tuggeraerial Platfrom Hoist and House Cars), Hoppers, Hoppers Doors (power operated); Hydro-Blaster (where required); Ladders (Motorized); Laddervator; Locomotive, Dinky type; Maintenance, Utility Man; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols and Graders; Pavement Breakers, Small, Self-Propelled ride on type (also maintains compressor or hydraulic unit); Pavement Breaker, Truck Mounted; Pipe Bending Machine (power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (post pounder and auger);

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Rod Bending Machines (power); Roller, Black Top; Scales, (power); Seaman Pulverizing Mixer; Shoulder Widener; Silos; Skimmer Machines (Boom Type); Steel Cutting Machine, Services and Maintains; Tamrock Drill; Tractors; Tug Captain; Vibrating Plants (used in conduction with unloading); welder and Repair Machines. Concrete cleaning/decontamination machine operator; Directional boring machine; Heavy equipment robotics operator; Master environmental maintenance operator; Ultra high pressure waterjet cutting tool system operator; maintenance operator; Vacuum blasting machine operator

GROUP 4: Brooms and Sweepers; Chippers; Compressors (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines, Large Diesel (1620 h.p.) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operator and Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yd); Generator (single); Grease, Gas, Fuel and Oil Supply Trucks; Heaters (Nelson or Other Type Including Propane, Natural Gas or Flowtype Units); Lights, Portable Generating Light Plants; Mixers, Concrete Small; Mulching Equipment (Operation and Maintenance of); Pumps (2 of Less Than 4 Inch Suction); Pumps 94 Inch Suction and Over Including Submersible Pumps); Pumps (Diesel Engine and Hydraulic); Immaterial of Power; Road Finishing Machines (Small Type); Rollers, Grade, Full Or Stone Base; Seeding Equipment (Operation and maintenance of); Sprinkler and Water Pump Trucks (Used on job Site or in conduction with Job Site); Steam Jennies and Boilers, Irrespective of Use; Stone Spreader; Tamping Machines, Vibrating Ride On; Temporary Heating Plant (nelson or Other Type, Including Propane, Natural Gas or Flow Type Units); Water and Sprinkler Trucks (Used On Job Site In Conduction with Job Site); Welding Machines-Within 100 ft (Gas, and /or Electric Converters of any type, single, tow or three in a battery). welding system, multiple (rectifier transformer type) well point systems (including installation by bull gang and maintenance of); Off Road back dumps.

GROUP 5: Oiler

GROUP 6: Helicopter Pilot

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Washington's Birthday Memorial Day, July 4th, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day during the calendar week in which the holiday occurs

* ENGI0825L 07/01/2001

	Rates	Fringes
ORANGE, ULSTER AND SULLIVAN COUNTIES		
POWER EQUIPMENT OPERATORS		
BUILDING CONSTRUCTION STEEL ERECTION		

GROUP 1	34.64	16.20+a
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 2	33.73	16.20+a
GROUP 3	31.44	16.20+a
GROUP 4	28.78	16.20+a
GROUP 5	27.25	16.20+a
GROUP 6	25.49	16.20+a
GROUP 7	35.50	16.20+a

NOTES:

Hydrographic Premium	.50
Hazmat Premium	20%
Tunnel Premium	.75

STEEL ERECTION CLASSIFICATIONS

GROUP 1: Cranes (All Cranes, Land or Floating with Booms Including Jib 140 ft and over, Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms including Jib 140 ft and over above ground).

GROUP 2: Cranes (All Cranes, Land or Floating with Booms Including Jib Less Than 140 ft Above Ground); Derricks, Land, Floating or Chicago Boom Type with Booms Including Jib Less Than 140 ft above Ground).

GROUP 3: "A" Frame, Cherry Pickers 10 tons and under, Hoists Shall Also Include Steam, Gas, Desel, Electric, Air Hydraulic, Single and Double Drum Concrete, Brick Shaft Caisson, or Any Other Similar Type Hoisting Machines, Portable or Stationary, Except Chicago Boom Type; Jacks: Screw Air Hydraulic Power Operated unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms.

GROUP 4: Aerial Platform used as Hoist; Compressor: 2 or 3 in Battery; Elevators or House Cars; Conveyors and Tugger Hosits; Chief of Party; Firemanp; Forklift; Generators (2 or 3); Maintenance (Utility Man); Rod Bending Machine (power); Welding Machines (Gas or Electric, 2 or 3 in Battery, Including Diesels); Captain: Power Boats: Tug Master: Power Boats.

GROUP 5: Compressor, Single; Welding Machine, Single, Gas, Diesel, and Electric Converters of any Type: Welding System Multiple (Rectifier Transformer Type); Generator, Single.

GROUP 6: Oiler

GROUP 7: Helicopter Pilot .

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the calendar week during which the holiday occurs.

POWER EQUIPMENT OPERATORS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BUILDING CONSTRUCTION TANK ERECTION

GROUP 1	34.36	16.20+a
GROUP 2	33.52	16.20+a
GROUP 3	35.00	16.20+a
GROUP 4	31.43	16.20+a
GROUP 5	26.22	16.20+a

NOTES:

Tunnel Premium	.75
Hazmat Premium	20%
Hydrographic Premium	.50

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers on all Cranes, Derricks, ets with Booms Including Jib 140 ft or More Above Ground.

GROUP 2: Operating Engineer on all Equipment, Including Cranes, Derricks, ets with Booms Including Jib, Less Than 140 ft above the ground.

GROUP 3: Helicopter Pilot Engineer.

GROUP 4: Air Compressors, Welding Machines and Generators are Covered and are Defined as Cover: Gas, Diesel, or Electric Driven Equipment and Sources of Power from a Permanent Plant: ie: Staem, Compressed Air, Hydraulic or Other Power, For The Operating of any Machine or Automatic Tools, Used In The Erection, Alteration, Repair and Dismantling of Tanks and Any and All "Dual Purpose" Trucks Used On The Construction Job Site, or in the Loading and Unloading of Materials, at the Construction Job Sited or in Conjunction with the Job Site.

GROUP 5: Oiler

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day provided the Employee works one day in the calendar week during which the holiday occurs

POWER EQUIPMENT OPERATORS

OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINES:

GROUP 1	32.50	16.20+ a
GROUP 2	30.85	16.20+ a
GROUP 3	28.71	16.20+ a
GROUP 4	27.21	16.20+ a
GROUP 5	25.49	16.20+ a
GROUP 6	34.43	16.20+ a

NOTES:

Hydrographic Premium	.50
Hazmat Premium	20%

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Tunnel Premium

.75

OILSTATIC MAINLINES AND TRANSPORTATION PIPE LINES
CLASSIFICATIONS

GROUP 1: Backhoe; Cranes (all types); Draglines, Front End Loaders (5yds. and over), Gradalls, Helicopters (co-pilot), Helicopters (Communication Engineer); Scooper (Loader and Shovel) Koehring; Trench Machines.

GROUP 2: "A" Frame; Backhoe (Combination Hoe Loader); Boring and Drilling Machines; Ditching Machines, Small, Ditchwitch, Vermeer or Similar type; Forklifts; Front End Loaders 92 yds. and over but less than 5 yds.); Graders, Finish (fine); Hydraulic Cranes 10 tons and under (over 10 tons) Cranes Rate Applies); Side Booms: Winch Trucks (Hoisting).

GROUP 3: Backfiller; Brooms and Sweepers; Bulldozers; Compressor (2 or 3 in battery); Chief of Party; Front End Loaders (under 2 yds); Generators; Giraffe Grinders; Graders and Motor Patrols; Machnic; Pipe Bending Machine (power); Tractors; Water and Sprinkler Trucks used on Job Site or in Conduction with Job Site); Welder and Repair Mechanic; Captain (power boats); Tug Master (power boats).

GROUP 4: Compressor (single); Dope Pots (Mechanical with or without Pump); Dust Collectors; Pumps (4 inch suction and over); Pumps (2 of less than 4 inche suction); Pumps, Diesel Engine and Hydraulic (immaterial of power); Welding Machines, Gas or Electric Converters of any type- 2 or 3 in Battery Mulptle Welders; Well Point Systems (including installation and Maintenance); Fram Tractors.

GROUP 5: Oiler, grease, gas, fuel and oil supply trucks; Tire repair and maintenance

GROUP 6: Helicopter Pilot

FOOTNOTE:

- a. Paid Holidays: New Years Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Election Day, Thanksgiving Day, and Christmas Day Provided the Employee works one day in calendar week during which the holidays occurs.

* IRON0417A	07/01/2001		
		Rates	Fringes
IRONWORKERS		26.00	22.35

* LABO0017M	07/01/2001		
		Rates	Fringes
ORANGE, ULSTER, SULLIVAN AND DUTCHESS COUNTIES			

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS

BUILDING CONSTRUCTION:

GROUP 1	19.25	8.85
GROUP 2	22.50	8.85
GROUP 3	24.30	8.85
GROUP 4	27.05	8.85

LABORERS BUILDING CLASSIFICATIONS

GROUP 1: Custodial work, flag person, traffic control person, toll room tender, temporary heat tender, temporary light tender, portable pump tender, portable generator tender.

GROUP 2: Common laborers, general clean-up person, safety & firewatch person, temporary weather protection, snow removal, dump area person, wrecking, demolition, dismantling person, landscaping person, chuck tender, poured gypsum roof work, water proofing, styrofoam installation persons, tile setter tender, carpenter tender.

GROUP 3: Asphalt laborer, pump concrete machines, fire proofing & acoustic pumps & mixers, gunte, sand blasting, pressure blasting, singal person, air or electric chipping hammer, barmen, pavement breaker, jack hammer, hydraulic splitter, air track, power man, pipelayer, conduit layer, duct bank layer, vibro, baco, jay tamper, walk behind tamper, or similar type walk behind rollers, radio controlled tampers & rollers, chain saw operator, scaffold builder, concrete laborer, hod carriers, concrete mixer, concrete vibrator, walking power biggy, riding power buggy, power driven mortar mixer, power driven plaster mixer & mason tender; concrete saw, granite, stone or manufactured curbing, surface setting of all block, brick, stone, assembling & placing of gabion basket or similar, rip rap, low fork lifts and laser operations under laborers jurisdiction, form setting burner-torch), chain link fence, wagon drill, joy & gib drills, Ingersol Rand, heavy duty crawler-master type HCMZ, drill machines or equivalent, all wrecking, demolition or dismantling above fourteen (14) feet, erecting and dismantling or scaffolding above fourteen (14) feet, cleaning machine.

GROUP 4: All work related with asbestos, or any toxic and hazardous material, blasting, leroy hydraulic or similar, scaffold or platform work thirty (30) feet or more above surface and high fork lift, fireproof spraying.

LABORERS HEAVY & HIGHWAY:

GROUP 1:	19.25	10.50+a
GROUP 2:	23.75	10.50+a
GROUP 3:	24.85	10.50+a
GROUP 4:	25.55	10.50+a
GROUP 5:	28.30	10.50+a

FOOTNOTE:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

a. PAID HOLIDAYS: New Years Day, President's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

LABORERS HEAVY AND HIGHWAY CLASSIFICATIONS

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barrlacades, traffic patterns all reflective type materials for traffic control, custodial work, traffic directors, temporary heat, snow removal and firewatch

GROUP 2: General laborers, chuck tender, handling and distributing drinking water, distributing all tools and supplies of laborers, nipper, powder carrier, magazine tender, warehouse laborers, concrete man, vibrator man, mason tender, mortar man, spraying, brushing and covering of concrete for curing and preservative purposes, traffic striper, scaffold builder, concrete crub and sidewalk from setter

GROUP 3: Asphalt men, joint setter, signal man, wellpoints, conduit and layer, wire puller, rip rap and dry stone layers, steel rod carriers core drill, rock splitter, Hilti gun-air, or electric, jackhammer, chipping hammer, bush hammer, pavement breaker, wagon drill, air track, jib rig, joy drill, gunnite and sandblasting, coal pass and nozzle men on mulching and seeding machines, all guard rail and fence men, all seeding and sod laying, all landscape work, grade checkers, all bridge work, walk behind rollers, and tampers of all types, salvage stripping, wreckin and dismantling laborers (including bar men, cutting torch and burnermen), sheeting and shoring, bit grinder, operator of form pin pullers, and drivers, sandblasting, joint and jet sealers, filling and wiring of baskets for gabion walls, permanent sing men, medium barrier, stawall or similar type product, chain saw operator, railroad track laborers, waterproofers, prestressed and pre-cast concrete, crubs, brick and block and stone pavers, power tool used to perform work usually done by laborers, power buggy and pumpcrete operator, fireproof, plaster and acoustic pump, asbestos, toxic or hazardous materials abatement when protective clothing and equipment is not required, power brush cutter behind surface planer, welding related to laborers work, remote controlled equipment normally operated by laborers.

GROUP 4: Concrete finisher and form setter for concrete pavement, gunnite nozzle man, sotne cutters, granite stone layer, manhole and catch basin on inlet installing, Ingersoll Rand heavy duty crawler-master HCMZ, any drill using a 4" or larger bit, mortar mixer and forlk lift operator, laser men.

GROUP 5: Asbestos, toxic, or hazardous material abatement when protective clothing and equipment is required. LeRoi hydraulic drill or similar, scaffold or platform work thirty (30) feet above the surface, high fork lift fireproof spraying.

TUNNEL, SHAFT & CASSION WORK

GROUP 1

24.20

10.50+a

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 2	26.15	10.50+a
GROUP 3	26.65	10.50+a
GROUP 4:	29.35	10.50+a

FOOTNOTE:

PAID HOLIDAYS: New Years Day, Presidents's Day, Memorial Day, Independence Day, Labor Day, Election Day, Veterans Day, Thanksgiving Day, Christmas Day

TUNNEL, SHAFT & CASSION CLASSIFICATIONS

GROUP 1: Laborer, Pit and Dumpman, Chuck Tender, Brakeman and Powder

GROUP 2: Miner and all mavhine men, Safety Miner, all shaft work, casson work, drilling, blow pipe, all air tools, tuggger scaling, nipper gunniting srom pot to nozzle, bit grinder, singal man (top and bottom), shift steward, concrete man, shield driven tunnel, mixed face and soft ground liner plate tunnel in free air.

GROUP 3: All work under compressed air to include, but not limited to Miner and all Machine men, Safety Miner all scaling, Nipper, Gunniting from Pot to Nozzle, Bit Grinder Signal man

GROUP 4: Asbestos, abatement work, toxic and hazardous material when protective clothing and equipment is required.

LABO1000A 06/01/2000

	Rates	Fringes
DUTCHESS COUNTY		
LABORERS (BUILDING CONSTRUCTION):		
GROUP 1	21.25	10.30+a
GROUP 2	21.75	10.30+a
GROUP 3	22.25	10.30+a
GROUP 4	23.25	10.30+a

LABORERS CLASSIFICATIONS (BUILDING)

GROUP 1: Mason tenders, carpenter tenders, laborer stripping and cleaning forms, laborer grading and digging ditches, sweepers and cleaners

GROUP 2: Hod Carriers (plasters' helpers) scaffold builders (padlock and self-supporing scaffold 14 feet or under all runways), mortar mixers (by machine under 21E) vibrators, form setters, asphalt rakers, handling reinforcement rods, working labor foreman, dirllers and jack hamemrs and operators, signal men, gunniting, shop stewards, motor buggs, water pumps 2" or under, Braco machine, wreckers, paving breaker, power saw operators, other machine operators.

GROUP 3: Blaster, laser beam operator

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 4: Asbestos abatement work, toxic, and hazardous abatement and related work

FOOTNOTE:

- a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day Thanksgiving Day, and Christmas Day

LABO1000D 05/01/2000

DUTCHESS COUNTY

	Rates	Fringes
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LABORERS (HEAVY & HIGHWAY):

GROUP 1	18.20	9.95+a
GROUP 2	21.71	9.95+a
GROUP 3	21.96	9.95+a
GROUP 4	22.71	9.95+a
GROUP 5	24.41	9.95+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Flagperson, placing and maintenance of all flares, cones, light, signs, barricades, traffic control, custodial work, traffic directors, temporary heat or light tenders, tool rooms.

GROUP 2: General Laborers, Dumpman, Pitman.

GROUP 3: Concrete Man, Signal Man, Pipelayer, Rip Rap, Dry Stone Layer, Jackhammer, Powderman, Highscalers, Power Buggy Operator, Steel Rod Carrier, Vibratory Operator, Other Machine Operator, Wrecking, Vibrator Operator-Compactor, Gunite and Sand Blasting, Water Pump 2" or under, Nipper, Chucker, Asphalt Workers.

GROUP 4: Asphalt Raker, Asphalt Screeman, Drillers (all), Laser Beam Operator, Form Setter/Aligners, Blasters.

GROUP 5: Asbestos, Toxic, Lead, or Hazardous Material Abatement when protective clothing and equipment are required.

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Lincoln's Birthday, Good Friday, Washington's Birthday, November Election Day, Memorial Day, Independence Day, Labor Day, Columbus day, Thanksgiving Day and Christmas Day and Veteran's Day.

PAIN0009F 05/01/2001

DUTCHESS (All of Hyde Park and anything south of Hyde Park), ORANGE, SULLIVAN, and ULSTER (All of Kingston and anything south of Kingston)

	Rates	Fringes
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GLAZIERS	30.75	19.20
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PAIN0155B 06/01/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
PAINTERS		
PAINTER\ PAPERHANGER	19.49	8.96
DRYWALL FINISHERS	19.49	8.96
SPRAY RATE	20.49	8.96
STRUCTURAL STEEL	29.74	8.96
BRIDGES, SWING STAGE,	29.74	8.96
BOATSWAIN CHAIR, PICK &		
CABLES OVER 20 FEET		
LEAD ABATEMENT WORK	19.49	8.96

PAIN0155D 06/01/1999

DUTCHESS (Anything North of Hyde Park) and ULSTER (Anything North of Kingston) COUNTIES

	Rates	Fringes
GLAIZIERS	19.00	9.62

PLUM0201B 04/01/2001

DUTCHESS COUNTY AND THE REMAINDER OF ULSTER COUNTY

	Rates	Fringes
PLUMBERS AND STEAMFITTERS	25.50	16.08

PLUM0373B 05/01/2001

ORANGE COUNTY

TOWNS OF MONROE AND TUXEDO
Plumbers & Steamfitters

	Rates	Fringes
	29.72	18.00

PLUM0373C 05/01/2001

ZONE 2

SULLIVAN, ORANGE (Except the Towns of Monroe and Tuxedo) AND ULSTER (The Towns of Shawangurk, Wawarsing, Plattekill and Marlboro)

	Rates	Fringes
PLUMBERS AND STEAMFITTERS	25.80	14.15

* ROOF0008B 07/01/2001

	Rates	Fringes
ROOFER	29.08	18.78

SFNY0669B 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	32.05	6.00

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* SHEE0038A 07/01/2001

	Rates	Fringes
SHEET METAL WORKERS	31.30	15.69

TEAM0445A 07/01/1998

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	21.25	13.45+a
GROUP 2	21.15	13.45+a
GROUP 3	20.95	13.45+a
GROUP 4	20.85	13.45+a
GROUP 5	20.75	13.45+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day Plus Washington's Birthday, Election Day, and Veterans Day, provided the employee works one day calendar week during which the holidays occurs.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Drivers on Letourneau tractors, double barrel euclids, Athey wagons and similar equipment (except when hooked to scrapers), drivers on low beds, I-beam and pole trailers, drivers of road oil distributors, tire trucks and tractors and trailers with 5 axles and over.

GROUP 2: Drivers on all equipment 25 yards and over, up to and including 30 yard bodies and cable dump trailers and powder and dynamite trucks.

GROUP 3: Drivers on all equipment up to and including 24 yard bodies, mixer trucks, dump crete trucks and similar types of equipment, fuel trucks and all other tractor trailers.

GROUP 4: Drivers on ten-wheelers, grease trucks and tillermen.

GROUP 5: Drivers on pick-up trucks used for materials & parts, drivers on escort man over-the-road and drivers on straight trucks.

 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
 =====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION NC010032 03/02/01 NC32

General Decision Number NC010032

Superseded General Decision No. NC000032

State: **North Carolina**

Construction Type:

BUILDING

County(ies):

CUMBERLAND

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

CUMBERLAND

	Rates	Fringes
SUNC1027A 10/24/1994		
BRICKLAYERS/BLOCKLAYERS	12.50	
CARPENTERS (Including drywall hanging, acoustical tile installation and batt insulation)	9.08	
CEMENT MASONS/CONCRETE FINISHERS	8.43	
ELECTRICIANS	9.71	
GLAZIERS	8.77	
HVAC MECHANIC (HVAC pipe only)	9.26	
INSULATORS (pipe)	10.42	.63
IRONWORKERS, STRUCTURAL	10.76	
LABORERS: Unskilled	6.23	
PAINTERS (Brush)	7.90	.04
PLUMBERS	10.28	
ROOFERS	6.75	
SHEET METAL WORKERS (Including HVAC Duct Work)	9.36	
SOFT FLOOR LAYERS/CARPET LAYERS	12.00	

WELDERS - receive rate prescribed for craft performing operation
to which welding is incidental.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

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be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the Branch
of Construction Wage Determinations. Write to:

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U.S. Department of Labor
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Washington, D. C. 20210

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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U. S. Department of Labor
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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION NC010007 03/02/01 NC7

General Decision Number NC010007

Superseded General Decision No. NC000007

State: **North Carolina**

Construction Type:

BUILDING

County(ies):

BLADEN	LEE	SAMPSON
HARNETT	MOORE	SCOTLAND
HOKE	ROBESON	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

BLADEN	LEE	SAMPSON
HARNETT	MOORE	SCOTLAND
HOKE	ROBESON	

SUNC1020A 12/01/1980

	Rates	Fringes
AIR CONDITIONING		
MECHANICS	6.30	
BRICKLAYERS	8.00	
CARPENTERS	5.91	
CEMENT MASONS	5.44	
ELECTRICIANS & ELECTRONIC		
TECHNICIANS	7.05	
GLAZIERS	5.25	
IRONWORKERS:		
Structural, Reinforcing, &		
Ornamental	9.45	
LABORERS:		
Unskilled	5.15	
Mason Tenders	5.15	
Asphalt Rakers	5.15	
Pipe Layers	5.15	
LATHERS	8.80	
MILLWRIGHTS	9.45	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAINTERS	5.15
PLASTERERS	7.25
PLUMBERS & PIPEFITTERS	9.45
POWER EQUIPMENT OPERATORS:	
Asphalt Paver	5.15
Asphalt Roller	5.15
Backhoe	6.77
Bulldozer	8.55
Crane	10.00
Forklift	6.30
Front End Loader	6.25
Mechanic	6.00
Scraper - Pan	5.89
ROOFERS	5.15
SHEET METAL WORKERS	5.63
SOFT FLOOR LAYERS	5.75
SPRINKLER FITTERS	8.75
TILE SETTERS	5.75
TRUCK DRIVERS	5.15

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

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WAGE DETERMINATION APPEALS PROCESS

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- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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200 Constitution Avenue, N. W.
Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION OK010014 06/22/01 OK14

General Decision Number OK010014

Superseded General Decision No. OK000014

State: **Oklahoma**

Construction Type:

BUILDING

County(ies):

ALFALFA	GRADY	MAJOR
BECKHAM	GRANT	MARSHALL
BLAINE	GREER	MURRAY
CADDO	HARMON	NOBLE
CARTER	HARPER	PONTOTOC
COMANCHE	JACKSON	ROGER MILLS
COTTON	JEFFERSON	STEPHENS
CUSTER	JOHNSTON	TILLMAN
DEWEY	KAY	WASHITA
ELLIS	KINGFISHER	WOODS
GARFIELD	KIOWA	WOODWARD
GARVIN	LOVE	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	05/04/2001
2	06/01/2001
3	06/22/2001

COUNTY(ies):

ALFALFA	GRADY	MAJOR
BECKHAM	GRANT	MARSHALL
BLAINE	GREER	MURRAY
CADDO	HARMON	NOBLE
CARTER	HARPER	PONTOTOC
COMANCHE	JACKSON	ROGER MILLS
COTTON	JEFFERSON	STEPHENS
CUSTER	JOHNSTON	TILLMAN
DEWEY	KAY	WASHITA
ELLIS	KINGFISHER	WOODS
GARFIELD	KIOWA	WOODWARD
GARVIN	LOVE	

ASBE0064C 07/16/1997

	Rates	Fringes
KAY COUNTY		
ASBESTOS/INSULATOR WORKERS	15.00	4.64

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SCOPE OF WORK:

Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems.

ASBE0066C	07/01/1996		
		Rates	Fringes
BECKHAM, ELLIS, GREER, HARMON, HARPER AND ROGER MILLS COUNTIES			
ASBESTOS/INSULATOR WORKERS		15.13	4.24

Scope of Work:

Includes application of all insulation materials, protective coverings, coatings and finishings to all types of mechanical systems.

ASBE0094C	07/16/1999		
		Rates	Fringes
REMAINING COUNTIES			
ASBESTOS/INSULATOR WORKERS		19.77	6.49

SCOPE OF WORK:

Includes application of all insulation materials, protective coverings and finishings to all types of mechanical systems.

BOIL0592A	08/08/2000		
		Rates	Fringes
BOILERMAKER			
		21.11	7.59

BROK0005Q	06/01/2001		
		Rates	Fringes
BECKHAM, CADDO, CARTER, COMANCHE, COTTON, CUSTER, DEWEY, GARVIN, GRADY, GREER, HARMON, JACKSON, JEFFERSON, JOHNSTON, KIOWA, LOVE, MARSHALL, PONTOTOC, ROGER MILLS, STEPHENS, TILLMAN AND WASHITA COUNTIES			
BRICKLAYERS & STONEMASONS		19.91	5.50

BROK0005R	06/01/2001		
		Rates	Fringes
ALFALFA, BLAINE, ELLIS, GARFIELD, GRANT, HARPER, KINGFISHER, MAJOR, WOODS AND WOODWARD COUNTIES			
BRICKLAYERS & STONEMASONS		19.91	5.50

BROK0005S	06/01/2001		
		Rates	Fringes
KAY AND NOBLE COUNTIES			
BRICKLAYERS & STONEMASONS		19.91	5.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

 CARP0329G 06/01/1997

Rates Fringes
 BECKHAM, BLAINE, CADDO, COMANCHE, COTTON, DEWEY, GARVIN (Remain-
 der of County), GRADY, GREER, HARMON, JACKSON, JEFFERSON,
 KINGFISHER (South of the Cimmarron River), KIOWA, STEPHENS,
 TILLMAN AND WASHITA COUNTIES

CARPENTERS & POWER SAW OPERATORS	15.50	2.80
MILLWRIGHTS & PILEDRIVERMEN	16.90	2.80

CARP1362C 01/01/1995

Rates Fringes
 CARTER, GARVIN (Northern half of Garvin including the Towns of
 Pauls Valley and Wynnwood), JOHNSTON, LOVE, MARSHALL, MURRAY AND
 PONTOTOC COUNTIES

CARPENTERS	13.40	2.85
PILEDRIVERMEN	13.65	2.85
MILLWRIGHTS	15.50	2.85

CARP1686D 06/11/1994

Rates Fringes
 NOBLE COUNTY (East of Interstate #35 and South of Black Bear
 Creek)

CARPENTERS	14.40	.80
MILLWRIGHTS	15.05	.80
PILEDRIVERMEN	14.40	.80
POWER SAW OPERATOR	14.40	.80

CARP1894A 06/01/1993

Rates Fringes
 ELLIS, HARPER, ROGER MILLS, WOODS AND WOODWARD COUNTIES

CARPENTERS	11.55	1.40
MILLWRIGHTS	12.425	1.40
PILEDRIVERMEN	12.425	1.40
POWER SAW OPERATOR	11.85	1.40

CARP2008A 06/01/1994

Rates Fringes
 ALFALFA, GARFIELD, GRANT, KAY, MAJOR, NOBLE (West of Interstate
 # 35 and North of Black Bear Creek) COUNTIES

CARPENTERS, MILLWRIGHTS AND PILEDRIVERMEN	12.30	.30
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CARP2008B 06/01/1994

Rates Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 ALFALFA, GARFIELD, GRANT AND MAJOR COUNTIES

LATHERS 12.30 .30

ELEC0020B 06/01/2001
 Rates Fringes
 MARSHALL COUNTY
 ELECTRICIANS 20.95 4-1/2%+4.14

ELEC0444B 12/01/1999
 Rates Fringes
 KAY AND NOBLE COUNTIES
 ELECTRICIANS 20.00 4.05+3.5%

ELEC1002B 07/01/2000
 Rates Fringes
 LINE CONSTRUCTION:
 Lineman 22.78 2.10+21%
 Cable Splicer 24.60 2.10+21%
 Hole Digger, Heavy Equipment Op.,
 (Pole Cat Equivalent) 20.07 2.10+21%
 Powderman 19.59 2.10+21%
 Line Truck Driver (Winch op.) 17.77 2.10+21%
 Truck Driver (Flat Bed, Ton &
 1/2) and Under) 15.26 2.10+21%
 Jackhammer Op. 15.95 2.10+21%
 Groundman 14.35 2.10+21%

ELEC1141E 05/30/2001
 Rates Fringes
 ALFALFA, BECKHAM, BLAINE, CADDO, CARTER, CUSTER, DEWEY, ELLIS,
 GARFIELD, GARVIN, GRADY, GRANT, HARPER, JOHNSON, KINGFISHER,
 LOVE, MAJOR, MURRY, PONTOTOC, ROGER MILLS, WASHITA, WOODS AND
 WOODWARD COUNTIES
 ELECTRICIANS 20.89 14.25%+2.30

ELEC1141G 09/01/2000
 Rates Fringes
 ALFALFA, BECKHAM, BLAINE, CADDO, CARTER, CUSTER, DEWEY, ELLIS,
 GARFIELD, GARVIN, GRADY, GRANT, HARPER, JOHNSON, KINGFISHER,
 LOVE, MAJOR, MURRAY, PONTOTOC, ROGER MILLS, WASHITA, WOODS AND
 WOODWARD COUNTIES
 ELECTRICIANS:
 Sound & Communication
 Technicians 17.86 3%+1.35

ELEC1141J 12/01/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

COMANCHE, COTTON, GREER, HARMON, JACKSON, JEFFERSON, KIOWA,
STEPHENS AND TILLMAN

	Rates	Fringes
ELECTRICIANS	18.08	3%+4.20

ELEV0063C 04/01/2000

	Rates	Fringes
ELEVATOR CONSTRUCTORS: Mechanic	20.585	6.985+a

FOOTNOTE:

a. Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Friday after Thanksgiving Day; Christmas Day., Vacation Pay Credit: Employer contributes 8% of the basic hourly rate for employees with 5 years or more of service or 6% of the basic hourly rate for employees with 6 months to 5 years of service.

ENGI0627I 06/01/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1:	19.95	5.90
GROUP 2:	19.20	5.90
GROUP 3:	18.70	5.90
GROUP 4:	18.20	5.90
GROUP 5:	17.70	5.90
GROUP 6:	17.45	5.90
GROUP 7:	17.05	5.90
GROUP 8:	15.45	5.90
GROUP 9:	14.95	5.90
GROUP 10:	14.45	5.90

GROUP 1: All crane type equipment with at least 300 feet of boom and over (including jib)

GROUP 2: All crane type equipment with at least 200 feet and less than 300 feet of boom (including jib)

GROUP 3: All crane type equipment with at least 100 feet and less than 200 feet of boom (including jib); all tower cranes; crane equipment (as rated by mfg.) 3 cu. yd. and over; guy derrick; whirley; power driven hole digger (with 30 feet and longer mast)

GROUP 4: Cranes with less than 100 feet of boom with jib and cranes (as rated by mfg.) less than 3 cu. yd.; heavy duty mechanic; overhead monorail type crane; panel board batch plant op.; piledriver engineer; dragline; clamshell; backhoe (3/4 yd. and over); sideboom or similar type equipment; gradall; cherry picker; hoist (while operating two or more drums); all hoist (while doing stack and chimney work); power driven hole digger with less than 30 ft. mast; motor patrol (boom type)

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5: Dozer (engine r.p. 65 or over); roller and compactors with dozer blade; backhoe under 3/4 yd., all scraper type equipment; water wagons under the jurisdiction of this craft; loader of hi-lift (engine h.p. 65 or over); asphalt laying machine; conveyor-multiple, panel board central; trenching machine; concrete pump (boom type)

GROUP 6: Rollers, all types; oil distributor; pulvimixer; screed operator; concrete pump (trailer type); rotary drilling machine when operated from console; greaser; tilt top trailer operator.

GROUP 7: Greaser; tilt top trailer operator

GROUP 8: Locomotive engineer; boring machine; tug boat; mixer - 18 cu. ft. and over; sand barge; dredging machine; tugging; hoist (operating one drum); air compressor - 3 to 6 - size 500 cu. ft. and under; air compressor - over 500 cu. ft. (1); pump, battery - 3 to 6; all fork-lift, bobcat and similar equipment; generator plant engineer, diesel elect; winch truck with A frame; concrete buster buster or tamper; heater under jurisdiction of operating engineers; fireman; boiler operator; crushing plants; farm tractor with or without attachments; batch plant operator - (portable); conveyor operator - continuous belt bulking handling; form grader; screening plant; well point pump operator; signal man on whirley when and if required; outside, side elevator or construction type hoist personel.

GROUP 9: Concrete mixers, less than 18 cu. ft.; air compressor, 500 cu. ft. and under (1 or 2); fuelman; asphalt lay machine backend man.

GROUP 10: Truck crane oiler and driver; crane oiler; permanent building type elevator operator.

IRON0048B 06/01/2000

	Rates	Fringes
BLAINE, CADDO, CARTER, COMANCHE, CUSTER, DEWEY, GARFIELD, GARVIN, GRADY, JOHNSTON, KINGFISHER, KIOWA, MAJOR, MURRAY, NOBLE, PONTOTOC, ROGER MILLS, STEPHENS, WASHITA AND WOODWARD COUNTIES		

IRONWORKERS	17.50	7.57
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IRON0263F 06/01/2000

	Rates	Fringes
MARSHALL COUNTY		

IRONWORKERS	15.94	4.05
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IRON0263G 06/01/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BECKHAM, COTTON, ELLIS, GREER, HARMON, HARPER, JACKSON
JEFFERSON, LOVE AND TILLMAN COUNTIES

IRONWORKERS	15.94	4.05
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IRON0584H 06/01/2000

	Rates	Fringes
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KAY COUNTY (The southern portion to a line running east and west
at the South City limits of Ponca City),

IRONWORKERS	17.50	7.57
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IRON0606D 06/01/2000

	Rates	Fringes
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ALFALFA, GRANT, KAY (Remainder of County), AND WOODS COUNTIES

IRONWORKERS	16.75	5.09
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LABO0462C 06/01/1993

	Rates	Fringes
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JOHNSTON, KAY, NOBILE AND PONTOTOC
COUNTIES

LABORERS:

GROUP 1	8.00	1.31
GROUP 2	8.50	1.31

ALFALFA, BECKHAM, BLAINE, CADDO, CARTER, COMANCHE,
COTTON, CUSTER, DEWEY, ELLIS, GARFIELD, GARVIN,
GRADY, GRANT, GREER, HARMON, HARPER, JACKSON,
JEFFERSON, KINGFISHER, KIOWA, LOVE, MAJOR,
MARSHALL, MURRAY, ROGER MILLS, STEPHENS, TILLMAN,
WASHITA, WOODS AND WOODWARD COUNTIES

LABORERS:

GROUP 1	7.50	1.31
GROUP 2	8.00	1.31

LABORER CLASSIFICATION

GROUP 1 - All digging and dirt work; Firing of salamanders and portable space heaters; All loading and unloading of the materials and equipment to and from hoist or cages for stock piling only; Wheeling and placing of concrete; Handling of lumber, steel, cement and distribution of materials; All cleaning including windows; All wrecking and razing of buildings and all structures; Cleaning and clearing of derbis; Loading and unloading of materials, hoist or cages, except when the man is directly tending lathers, masons or plasterers; Water boys when used; Carpenters tenders.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 2 - All machine tool operators that come under the jurisdiction of the laborers; All sewer and draintile layers and handling at the ditch, excluding distribution; Operators of water pumps up to four inches and slip form jackets; All men erecting scaffolds and directly tending lathers, masons, cement masons and plasterers, Mortar mixers, hod carriers and dry mixers; High work over 30 feet from ground or floors; Cement finisher tender; Work on swinging scaffold; All kettle and pot men; Tank cleaning; All pipe doping, treating and wrapping including all men working with dope; Mortar and plaster mixing machine pumpcrete machine and gunite mixing machines; including placing of concrete; Handling creosoted or treated materials liquid acid or like materials when injurious to health, eyes, skin or clothes; All newly developed mechanical equipment which replaces wheelbarrows or buggies previously used by loaders; All scale men on batch plants and tool crib men; All laborers screening sand, running sand drier and feeding operating sand blaster, except nozzle; Flaggers; Concrete graders and cutting torch operators in connection with laborers' work.

PAIN0807A 06/15/1999		
	Rates	Fringes
PAINTERS:		
Brush & Roller	14.15	3.00
Spray, Sandblasting & Water blasting under 30 ft.	14.65	3.00
Spray, Sandblasting & Water blasting over 30 ft.	15.15	3.00
Paper Hanging	15.15	3.00
Tapers using machine tools	14.65	3.00

PLAS0690B 06/01/1985		
	Rates	Fringes
JOHNSTON AND MARSHALL COUNTIES		
CEMENT MASONS	13.70	.76

PLAS0786A 06/01/1993		
	Rates	Fringes
KAY COUNTY		
CEMENT MASONS	10.80	
POWER TOOL OP.	11.05	

PLAS0807A 06/01/1990		
	Rates	Fringes
ALFALFA, BECKHAM, BLAINE, CADDO, CARTER, COMANCHE, COTTON, CUSTER, DEWEY, ELLIS, GARFIELD, GARVIN, GRADY, GRANT, GREER,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HARMON, HARPER, JACKSON, JEFFERSON, JOHNSTON, KINGFISHER,
 KIOWA, LOVE, MAJOR, MARSHALL, MURRAY, NOBLE, ROGER MILLS,
 STEPHENS, TILLMAN, WASHITA, WOODS AND WOODWARD COUNTIES

PLASTERERS	15.60	.95
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PLUM0344F 07/01/2000		
	Rates	Fringes
REMAINING COUNTIES		

PLUMBERS, PIPEFITTERS	20.70	6.80
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PLUM0430F 06/01/2001		
	Rates	Fringes
KAY COUNTY		

PLUMBERS AND PIPEFITTERS	21.45	6.67
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ROOF0143A 06/01/2001		
	Rates	Fringes
ROOFERS	15.75	3.75

SHEE0124A 07/01/2000		
	Rates	Fringes
SHEET METAL WORKERS (Including Duct Work)	20.98	5.99

TEAM0516A 06/01/1993		
	Rates	Fringes

MARSHALL COUNTY:

TRUCK DRIVERS:

GROUP 1:	10.43
GROUP 2:	10.53
GROUP 3:	10.63
GROUP 4:	10.58
GROUP 5:	10.73

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Pick-up, 1-1/2 tons or 2-1/2 yards and up to but not including 3 tons or 4 yards, such as dump trucks, flat beds, stake bodies and buses.

GROUP 2 - 3 tons or 4 yards and up to but not including 4 tons or 6 yards.

GROUP 3 - 5 tons or 6 yards and over including heavy equipment such as pole trucks, winch trucks, euclids, mississippi wagons, semi-dumps, turner pulls or other heavy material moving equipment, tractor trailer

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drivers and similar equipment such as tractors, ten wheelers.

GROUP 4 - Ready mix concrete trucks up to but not including 3 yards and over.

GROUP 5 - Ready mix concrete truck 3 yards and over.

TEAM0523A 06/01/1993

KAY AND NOBLE COUNTIES

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1:	12.80	
GROUP 2:	12.85	
GROUP 3:	12.95	

TRUCK DRIVER CLASSIFICATION

GROUP 1 - Truck Drivers, Including pick-up, 1- 1/2 tons to 2-1/2 yards up to but not including 3 tons or 4 yards, such as dump trucks, flat beds, stake body or bus driver.

GROUP 2 - 3 tons or 4 yards up to but not including 4 tons or 6 yards.

GROUP 3 - Ready mix concrete truck, tractor trailer and similar equipment.

TEAM0886A 06/01/1980

TRUCK DRIVERS:

ALFALFA, BECKHAM, BLAINE, CADDO, CARTER, COMANCHE, COTTON, CUSTER, DEWEY, ELLIS, GARFIELD, GARVIN, GRADY, GRANT, GREER, HARMON, HARPER, JACKSON, JEFFERSON, JOHNSTON, KINGFISHER, KIOWA, LOGAN, LOVE, MAJOR, MURRAY, PONTOTOC, ROGER MILLS, STEPHENS, TILLMAN, WASHITA, WOOD AND WOODWARD COUNTIES.

TRUCK DRIVERS:

GROUP 1:	9.70
GROUP 2:	9.40

TRUCK DRIVER CLASSIFICATION

GROUP 1 - Truck Drivers for heavy equipment such as lowboys, heavy winch and floats, heavy earth moving equipment such as dump trucks and euclids.

GROUP 2 - Truck Drivers and swampers, such as dump trucks, flat beds, stakebodies and 3/4 and 1/2 ton pick-up trucks.

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
data, project description, area practice material, etc.) that the
requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an
interested party may appeal directly to the Administrative Review
Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION OR010001 07/06/2001 OR1

Date: July 6, 2001
General Decision Number **OR010001**

Superseded General Decision No. OR000001

State: **Oregon**

Construction Type:
BUILDING

County(ies):

BAKER	JACKSON	POLK
BENTON	JEFFERSON	SHERMAN
CLACKAMAS	KLAMATH	TILLAMOOK
CLATSOP	LAKE	UMATILLA
COLUMBIA	LANE	UNION
CROOK	LINCOLN	WALLOWA
DESCHUTES	LINN	WASCO
GILLIAM	MALHEUR	WASHINGTON
GRANT	MARION	WHEELER
HARNEY	MORROW	YAMHILL
HOOD RIVER	MULTNOMAH	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	03/16/2001
3	04/06/2001
4	04/20/2001
5	04/27/2001
6	05/04/2001
7	06/01/2001
8	06/15/2001
9	06/22/2001
10	07/06/2001

COUNTY(ies):

BAKER	JACKSON	POLK
BENTON	JEFFERSON	SHERMAN
CLACKAMAS	KLAMATH	TILLAMOOK
CLATSOP	LAKE	UMATILLA
COLUMBIA	LANE	UNION
CROOK	LINCOLN	WALLOWA
DESCHUTES	LINN	WASCO
GILLIAM	MALHEUR	WASHINGTON
GRANT	MARION	WHEELER
HARNEY	MORROW	YAMHILL
HOOD RIVER	MULTNOMAH	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ASBE0036A 04/28/2001

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Projects under \$35,000 (Includes application of all insulating materials, protective coverings, coatings and finishings to all of mechanical systems)	27.96	8.25
Projects \$35,000 and over (Includes application of all insulating materials, protective coverings, coatings and finishings to all of mechanical systems)	28.96	8.25

ASBE0036C 04/29/2000

	Rates	Fringes
HAZARDOUS MATERIAL HANDLERS (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems)	13.75	3.70

BOIL0500A 10/01/1999

	Rates	Fringes
BOILERMAKERS	24.32	9.60

BROR0001A 06/01/2001

	Rates	Fringes
BAKER, BENTON (NORTH), CLACKAMAS, CLATSOP, COLUMBIA, GILLIAM, HARNEY, HOOD RIVER, LINCOLN (NORTH), LINN (NORTH), MALHEUR (NORTH), MARION, MORROW, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, UMATILLA, UNION, WALLOWA, WASCO (NORTH), WASHINGTON AND YAMHILL COUNTIES		
BRICKLAYERS	25.77	9.70
MARBLE AND STONE MASONS	26.77	9.70

BROR0001B 03/01/1991

	Rates	Fringes
MASON TENDERS: Tenders to Bricklayers, Tile Setters, Marble Setters and Terrazzo Workers, Topping for Cement Finishers and Mortar Mixers	15.99	5.12

BROR0001E 06/01/2000

	Rates	Fringes
BENTON (SOUTH), CROOK, DESCHUTES, GRANT, JACKSON, JEFFERSON,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

KLAMATH, LAKE, LANE, LINCOLN (SOUTH), LINN (SOUTH), MALHEUR (SOUTH), WASCO (SOUTH) AND WHEELER COUNTIES

BRICKLAYERS	24.41	7.04
MARBLE & STONE MASONS	25.41	7.04

BROR0001F 06/01/2001

	Rates	Fringes
TILESETTER AND TERRAZZO FINISHERS	17.75	5.87
TILESETTER AND TERRAZZO WORKERS	23.50	6.98

CARP0001B 06/01/2001

	Rates	Fringes
CARPENTERS		
ZONE 1:		
CARPENTERS	26.43	7.89
FLOOR LAYERS & FLOOR FINISHERS (the laying of all hardwood floors nailed and mastic set, parquet and wood-type tiles, and block floors, the sanding and finishing of floors, the preparation of old and new floors when the materials mentioned above are to be installed), INSULATORS (fiberglass and similar irritating material)	26.58	7.89
MILLWRIGHTS	26.93	7.89
PILEDRIVERS	26.93	7.89

Zone Differential (Add to Zone 1 rates):

Zone 2 - \$0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

- Zone 1 - All jobs or projects located within 30 miles of the respective City Hall
- Zone 2 - More than 30 miles and less than 40 miles from the respective City Hall
- Zone 3 - More than 40 miles and less than 50 miles from the respective City Hall
- Zone 4 - More than 50 miles and less than 60 miles from the respective City Hall
- Zone 5 - More than 60 miles and less than 70 miles from the respective City Hall
- Zone 6 - More than 70 miles from the respective City Hall.

BASEPOINTS CITIES FOR CARPENTERS (EXCLUDING MILLWRIGHTS, PILEDRIVERS AND DIVERS)

ALBANY	ASTORIA	BAKER
BEND	BROOKINGS	BURNS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

COOS BAY	CORVALLIS	EUGENE
GOLDENDALE	GRANTS PASS	HERMISTON
HOOD RIVER	KLAMATH FALLS	LAGRANDE
LAKEVIEW	LONGVIEW	MADRAS
MEDFORD	McMINNVILLE	NEWPORT
OEGON CITY	ONTARIO	PENDLETON
PORTLAND	PORT ORFORD	REEDSPORT
ROSEBURG	SALEM	ST. HELENS
THE DALLES	TILLAMOOK	VANCOUVER

BASEPOINTS FOR MILLWRIGHTS

EUGENE	NORTH BEND
LONGVIEW	PORTLAND
MEDFORD	THE DALLES
VANCOUVER	

BASEPOINTS FOR PILEDRIVERS AND DIVERS

ASTORIA	BEND
COOS BAY	EUGENE
KLAMATH FALLS	LONGVIEW
MEDFORD	NEWPORT
PORTLAND	ROSEBURG
SALEM	THE DALLES

CARP9001C 12/01/2000		
	Rates	Fringes
ACOUSTICAL INSTALLER & DRYWALL		
HANGER	25.56	7.70
LATHER	24.84	9.42

* ELEC0048A 07/01/2001		
	Rates	Fringes
CLACKAMAS, CLATSOP, COLUMBIA, HOOD RIVER, MULTNOMAH, SHERMAN, TILLAMOOK, WASCO, WASHINGTON AND YAMHILL (NORTH) COUNTIES		
ELECTRICIANS	30.20	3%+10.25
CABLE SPLICERS	30.45	3%+10.25

* ELEC0048I 07/01/2001		
	Rates	Fringes
CLACKAMAS, CLATSOP, COLUMBIA, HOOD RIVER, MULTNOMAH, SHERMAN, TILLAMOOK, WASCO, WASHINGTON AND YAMHILL (NORTH) COUNTIES		
COMMUNICATIONS AND SYSTEMS TECHNICIAN	24.25	7.93

SCOPE OF WORK FOR TECHNICIAN

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the following:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

WORK EXCLUDED

Raceway systems are not covered (excluding Ladder-Rack for the purpose of the above listed systems). Chases and/or nipples (not to exceed 10 feet) may be installed on open wiring systems.

Energy management systems.

SCADA (Supervisory Control and Data Acquisition) when not intrinsic to the above listed systems (in the scope)

Fire alarm systems when installed in raceways (including wire and cable pulling) shall be performed at the electrician wage rate, when either of the following two (2) conditions apply:

1. The project involves new or major remodel building trades construction.

2. The conductors for the fire alarm system are installed in conduit.

ELEC0112A	12/01/2000		
		Rates	Fringes
BAKER, GILLIAM, GRANT, MORROW, UMATILLA, UNION, WALLOWA, AND WHEELER COUNTIES			

ELECTRICIANS	27.75	3%+6.93
CABLE SPLICERS	29.14	3%+6.93

ELEC0112K	06/01/2000		
		Rates	Fringes
BAKER, GILLIAM, GRANT, MORROW, UMATILLA, UNION, WALLOWA AND WHEELER COUNTIES			

COMMUNICATIONS & SYSTEMS TECHNICIAN	19.00	4.80
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SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

WORK EXCLUDED

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Raceway systems are not covered (excluding Ladder-Rack for the purpose of the above listed systems). Chases and/or nipples (not to exceed 10 feet) may be installed on open wiring systems.

Energy management systems.

SCADA (Supervisory Control and Data Acquisition) when not intrinsic to the above listed systems (in the scope).

Fire alarm systems when installed in raceways (including wire and cable pulling) shall be performed at the electrician wage rate, when either of the following two (2) conditions apply:

1. The project involves new or major remodel building trades construction.
2. The conductors for the fire alarm system are installed in conduit.

ELEC0280A	01/01/2001		
		Rates	Fringes
BENTON, CROOK, DESCHUTES, JEFFERSON, LANE (EAST OF A LINE RUNNING NORTH AND SOUTH FROM THE NORTHEAST CORNER OF LINCOLN COUNTY), LINN, MARION, POLK, AND YAMHILL (SOUTHERN HALF) COUNTIES			
ELECTRICIANS		29.00	3%+8.20
CABLE SPLICERS		31.90	3%+8.20

ELEC0280B	07/01/2000		
		Rates	Fringes
BENTON, CROOK, DESCHUTES, JEFFERSON, LANE (EAST OF A LINE RUNNING NORTH AND SOUTH FROM THE NORTHEAST CORNER OF LINCOLN COUNTY), LINN, MARION, POLK AND YAMHILL (SOUTHERN HALF) COUNTIES			
COMMUNICATIONS AND SYSTEMS			
TECHNICIAN		19.51	5.09

SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

A. COMMUNICATIONS SYSTEMS THAT TRANSMIT OR RECEIVE INFORMATION AND/OR CONTROL SYSTEMS THAT ARE INTRINSIC TO THE ABOVE LISTED SYSTEMS

- SCADA (Supervisory Control and Data Acquisition)
- PCM (Pulse Code Modulation)
- Inventory Control Systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Digital Data Systems
 Broadband and Baseband and Carriers
 Post of Sale Systems
 VSAT Data Systems
 Data Communication Systems
 RF and Remote Control Systems
 Fiber Optic Data Systems

B. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS

Background foreground musicc
 Intercom and telephone interconnect systems
 Telephone systems
 Nurse call systems
 Radio page systems
 School intercom and sound systems
 Burglar alarm systems
 Low voltage master clock systems
 Multi media/multiplex systems
 Sound and musical entertainment systems
 RF systems
 Antennas and Wave Guide

C. FIRE ALARM SYSTEMS

Installation, wire pulling and testing

D. TELEVISION AND VIDEO SYSTEMS

Television monitoring and surveillance systems
 Video security systems
 Video entertainment systems
 Video educational systems
 Microwave transmission systems
 CATV and CCTV

E. SECURITY SYSTEMS

Perimeter security systems
 Vibration sensor systems
 Card access systems
 Access Control systems
 Sonar/Infrared monitoring equipment

ELEC0291A	06/01/2000		
		Rates	Fringes
MALHEUR COUNTY			
ELECTRICIANS		22.26	4.40%+5.82
CABLE SPLICERS		24.49	4.40%+5.82

ELEC0659A	01/01/2001		
		Rates	Fringes
DOUGLAS (EAST OF A LINE RUNNING NORTH AND SOUTH FROM THE NE CORNER OF COOS COUNTY TO THE SE CORNER OF LINCOLN COUNTY), HARNEY, JACKSON, JOSEPHINE, KLAMATH AND LAKE COUNTIES			
ELECTRICIANS		26.53	8.30

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CABLE SPLICERS	26.53	8.30
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 ELEC0659E 07/01/2000

	Rates	Fringes
HARNEY, JACKSON, KLAMATH AND LAKE COUNTIES		

COMMUNICATIONS AND SYSTEMS TECHNICIAN	19.51	5.09
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SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

A. COMMUNICATIONS SYSTEMS THAT TRANSMIT OR RECEIVE INFORMATION AND/OR CONTROL SYSTEMS THAT ARE INTRINSIC TO THE ABOVE LISTED SYSTEMS

- SCADA (Supervisory Control and Data Acquisition)
- PCM (Pulse Code Modulation)
- Inventory Control Systems
- Digital Data Systems
- Broadband and Baseband and Carriers
- Post of Sale Systems
- VSAT Data Systems
- Data Communication Systems
- RF and Remote Control Systems
- Fiber Optic Data Systems
- Intercom and telephone interconnect systems

B. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS

- Background foreground musicc
- Intercom and telephone interconnect systems
- Telephone systems
- Nurse call systems
- Radio page systems
- School intercom and sound systems
- Burglar alarm systems
- Low voltage master clock systems
- Multi media/multiplex systems
- Sound and musical entertainment systems
- RF systems
- Antennas and Wave Guide

C. FIRE ALARM SYSTEMS

- Installation, wire pulling and testing

D. TELEVISION AND VIDEO SYSTEMS

- Television monitoring and surveillance systems
- Video security systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Video entertainment systems
 Video educational systems
 Microwave transmission systems
 CATV and CCTV

E. SECURITY SYSTEMS

Perimeter security systems
 Vibration sensor systems
 Card access systems
 Access control systems
 Sonar/infrared monitoring equipment

* ELEC0932A 07/01/2001

	Rates	Fringes
COOS, CURRY, LINCOLN, DOUGLAS AND LANE COUNTIES (AREA LYING WEST OF A LINE NORTH AND SOUTH FROM THE N.E. CORNER OF COOS COUNTY TO THE S.E. CORNER OF LINCOLN COUNTY)		

ELECTRICIANS	26.75	3%+8.60
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ELEC0932C 07/01/2000

	Rates	Fringes
LANE (AREA LYING WEST OF A LINE NORTH AND SOUTH FROM THE N.E. CORNER OF COOS COUNTY TO THE S.E. CORNER OF LINCOLN COUNTY) AND LINCOLN COUNTIES		

COMMUNICATIONS AND SYSTEMS TECHNICIAN	19.51	5.09
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SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

A. COMMUNICATIONS SYSTEMS THAT TRANSMIT OR RECEIVE INFORMATION AND/OR CONTROL SYSTEMS THAT ARE INTRINSIC TO THE ABOVE LISTED SYSTEMS

SCADA (Supervisory Control and Data Acquisition)
 PCM (Pulse Code Modulation)
 Inventory Control Systems
 Digital Data Systems
 Broadband and Baseband and Carriers
 Post of Sale Systems
 VSAT Data Systems
 Data Communication Systems
 RF and Remote Control Systems
 Fiber Optic Data Systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

B. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS

- Background foreground musicc
- Intercom and telephone interconnect systems
- Telephone systems
- Nurse call systems
- Radio page systems
- School intercom and sound systems
- Burglar alarm systems
- Low voltage master clock systems
- Multi media/multiplex systems
- Sound and musical entertainment systems
- RF systems
- Antennas and Wave Guide

C. FIRE ALARM SYSTEMS

- Installation, wire pulling and testing

D. TELEVISION AND VIDEO SYSTEMS

- Television monitoring and surveillance systems
- Video security systems
- Video entertainment systems
- Video educational systems
- Microwave transmission systems
- CATV and CCTV

E. SECURITY SYSTEMS

- Perimeter security systems
- Vibration sensor systems
- Card access systems
- Access control systems
- Sonar/infrared monitoring equipment

* ELEV0019D 07/01/2001

	Rates	Fringes
BAKER, UNION, UMATILLA AND WALLOWA COUNTIES		
ELEVATOR MECHANICS	31.675	7.295+a

FOOTNOTE a: Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ELEV0023A 04/01/2001

	Rates	Fringes
ALL COVERED COUNTIES (EXCLUDING BAKER, UMATILLA, UNION AND WALLOWA COUNTIES)		
ELEVATOR MECHANIC	31.845	7.195+a

FOOTNOTE a: Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day, and New Years Day.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0701B 01/01/2001

	Rates	Fringes
SEE ZONE DESCRIPTIONS AND BASEPOINTS		

POWER EQUIPMENT OPERATORS (See Footnote C):

ZONE 1:

GROUP 1	28.21	8.20
GROUP 1A	29.62	8.20
GROUP 1B	31.03	8.20
GROUP 2	27.03	8.20
GROUP 3	26.31	8.20
GROUP 4	25.82	8.20
GROUP 5	25.25	8.20
GROUP 6	23.01	8.20

Zone Differential (add to Zone 1 rates):

Zone 2 - \$1.50

Zone 3 - 3.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK; AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or projects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three units or more; CRANE: Helicopter Operator, when used in erecting work; Whirley Operator, 90 ton and over; LATTICE BOOM CRANE: Operator 200 tons through 299 tons, and/or over 200 feet boom; HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199 tons with luffing or tower attachments; FLOATING EQUIPMENT: Floating Crane, 150 ton but less than 250 ton

GROUP 1A: CRANE: Hydraulic Operator, 200 tons and over (with luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200 tons through 299 tons, with over 200 feet boom; FLOATING EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons with over 200 feet boom; Operator 400 tons and over; FLOATING EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill, pavement profiler, operator, 6 foot lateral cut and over; BLADE: Auto Grader or "Trimmer" (Grade Checker required); Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over 120,000 lbs and above; Bulldozer operator, twin engine; Bulldozer Operator, tandem, quadnine, D10, D11, and similar type); Bulldozere Robotic Equipment (any type; CONCRETE: Batch Plant and/or Wet Mix Operator, one and two drum; Automatic Concrete Slip Form Paver Operator; Concrete Canal Line Operator; Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25 tons and over; HYDRAULIC CRANE: Hydraulic crane Operator 50 tons through 89 tons (with luffing or tower attachment); hydraulic crane operator 90 tons through 199 tons (with luffing or tower attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator; Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through 199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher Plant Operator; FLOATING EQUIPMENT: Floating Clamshell, etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons; LOADERS: Loader Operator, 6 cu. yds. but less than 12 cu. yds.; Loader Operator, 12 cu. yds. and over; Loader 120,000 lbs. and above; REMOTE CONTROL: Remote controlled earth-moving equipment (no one operator shall operate more than two pieces of earth-moving equipment at one time); RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, BACKHOE, SKOOPER OPERATOR: Shovel, etc., 3 cu. yds., but less than 5 cu. yds.; Shovel, etc., 5 cu. yds. and over; TRENCH MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler required); Wheel Excavator, over 750 cu. yds. per hour (two Operators and at least one Grade Oiler required); Band Wagon (in conjunction with wheel excavator); UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote or otherwise; HYDRAULIC HOES EXCAVATOR: Excavator over 130,000 lbs.

GROUP 3: LATTICE BOOM CRANES: Lattice Boom Crane-50 through 89
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tons (and less than 150 feet boom); FORKLIFT: Rock Hound Operator; HYDRAULIC HOES EXCAVATOR: excavator over 80,000 lbs. through 130,000 lbs.; LOADERS: Loader operator 60,000 and less than 120,000; RUBBER-TIRED SCRAPERS: Scraper Operator, with tandem scrapers; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell operators 3 cu. yds. but less than 5 cu yds.; Self Loading, paddle wheel, auger type, finish and/or 2 or more units; BULLDOZERS: Bulldozer operator over 70,000 lbs. up to and including 120,000

GROUP 4: ASPHALT: Blade Operator; Blade Operator, finish; Screed Operator; Asphalt Paver Operator (Screed man required); Diesel-Electric engineer, Plant; Roto-Mill, pavement profiler, operator, under six foot lateral cut; BLADE: Blade Operator, externally controlled by electronic, mechanical hydraulic means; Blade operator, multi-engine; BULLDOZERS: Bulldozer Operator over 20,000 lbs and more than 100 horse up to 70,000 lbs; Drill Cat Operator; Side-boom Operator; Cable-Plow Operator (any type); CLEARING: Log Skidders; Chippers; Incinerator; Stump Splitter (loader mounted or similar type); Stump Grinder (loader mounted or similar type); Tub Grinder; Land Clearing Machine (Track mounted forestry mowing & Grinding machine); Hydro Axe (loader mounted or similar type); COMPACTORS SELF PROPELLED: Compactor Operator, with blade; Compactor Operator, multi-engine; Compactor Operator, robotic; CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete Cooling Machine Operator; Concrete Paving Road Mixer; Concrete Breaker; Reinforced Tank Banding Machine (K-17 or similar types); Laser Screed; CRANE: Chicago boom and similar types; Lift Slab Machine Operator; Boom type lifting device, 5 ton capacity or less; Hoist Operator, two (2) drum; Hoist Operator, three (3) or more drums; Derrick Operator, under 100 ton; Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over; Cableway Operator up to twenty (25) ton; Bridge Crane Operator, Locomotive, Gantry, Overhead; Cherry Picker or similar type crane hoist five (5) ton capacity or less; Hydraulic Crane Operator, under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom Crane Operator, under 50 tons; CRUSHER: Generator Operator; Diesel-Electric Engineer; Grizzley Operator; DRILLING: Drill Doctor; Boring Machine Operator; Driller-Perussion, Diamond, Core, Cable, Rotary and similar type; Cat Drill (John Henry); Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Diesel-electric Engineer; Jack Operator, elevating barges, Barge Operator, self-unloading; Piledriver Operator (not crane type) (Deckhand required); Floating Clamshell, etc. Operator, under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type to yp to including 20,000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less than 60,000 lbs; Elevating Grader Operator by Tractor

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

operator, Sierra, Euclid or similar types; PILEDRIVERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning Decontamination Machine Operator; Ultra High Pressure Water Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Flating Floating; Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; H.D. Welder; Machine Tool Operator; Combination H.D. Mechanic-Welder, when dispatched and/or when required to do both; Welder-Certified, when dispatched and/or required; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push-pull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, BACKHOE, SKOOPER OPERATOR: Diesel Electric Engineer; Stationay Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cy yds.; Grade-all Operator; Shovel, Dragline, Clamshell, Operator 3 cu yds, but less than 5 cu yds.

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type), 84; Roto-Mill, pavement profiler, ground man BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less;

COMPRESSORS: Compressor Operator any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Beltcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and similar; Concrete Pump Operator; Grouting Machine Operator; Concrete mixer operator, single drum, under five (5) bag capacity; Concrete Mixer Operator, single drum, under 5 bag capacity and over; Cast place pipe laying machine; Maginnis Internal Full Slab Vibrator Operator; Concrete Finishing machine Operator, Clary, Johnson, Bidwell, Burgess bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms; Slip Form Pumps, power driven hydraulic lighting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churm Drill and Earth Boring Machine Operator; Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Fireman; FORKLIFT: Lull Hi-Lift Operator or similar type; Fork Lift, over 5 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type);

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Hydraulic Backhoe Operator track type up to and including WHEEL 20,000 lbs.; LOADERS: Loaders, rubber-tired type, less than 25,000 lbs; Elevating Grader Operator, Tractor Towed requiring Operator or Grader; OILERS: Service Oiler (Greaser); PIPELINE, SEWER WATER: Hydraulic Pipe Press Operator; Hydra Hammer or similar types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over

GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feeder; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT: Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (exclduing working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS: Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler-Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; PIPELINE SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman; Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman

 * IRON0029K 07/01/2001

	Rates	Fringes
IRONWORKERS	25.82	11.35

LABO0003A 06/01/2000

	Rates	Fringes
ZONE 1:		
LABORERS (SEE FOOTNOTE C):		
GROUP 1	20.44	7.90
GROUP 2	20.93	7.90
GROUP 3	21.30	7.90
GROUP 4	21.61	7.90
GROUP 5	17.98	7.90

Zone Differential (Add to Zone 1 rates):

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Zone 2 - \$0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINT CITIES:

ALBANY	ASTORIA	BAKER CITY
BEND	BURNS	COOS BAY
EUGENE	GRANTS PASS	HERMISTON
KLAMATH FALLS	MEDFORD	PENDLETON
PORTLAND	ROSEBURG	SALEM
THE DALLES		

Zone 1 - All jobs or projects located with 30 miles of the respective City Hall
Zone 2 - More than 30 miles and less than 40 miles from the respective City Hall
Zone 3 - More than 40 miles and less than 50 miles from the respective City Hall
Zone 4 - More than 50 miles and less than 80 miles from the respective City Hall
Zone 5 - More than 80 miles from the respective City Hall.

LABORER CLASSIFICATIONS

GROUP 1: Asphalt Spreaders; Asphalt Plant Laborers; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Cleanup Laborers; Curing, Concrete; Demolition, Wrecking, and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Fine Graders; Fence Builders; Form Strippers (not swinging stages); Guard Rail, Median Rail, Guide Post, Reference Post, Right-of-way Marker; Hazardous Waste Laborers; Landscaping or Planting Laborer; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or similar types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at jobsite); Weight-Man-Crusher (aggregate when used)

GROUP 2: Applicator (including Pot Tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean-up Nozzleman-Green-Cutter (concrete, rock, etc.); Concrete Laborers; Concrete Power Buggyman; Crusher Feeder; Demolition and Wrecking Charred Materials; Dropping and Wrapping Pipe; Guniting Nozzleman Tender; Guniting or Sand Blasting Pot Tender; Handlers or Mixers of all materials of an irritating nature (including cement and lime); Post Hole Diggers (air, gas or electric); Sand Blasting (wet); Stake-Setter; Tampers; Tool Operators (includes but not limited to: Dry Pack Machine, Jackhammer, Chipping Guns, Paving Breakers)

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GROUP 3: Asbestos removal (structural removal only); Bit Grinder; Concrete Saw Operator; Drill Doctor; Drill Operators (Air Tracks, Cat Drills, Wagon Drills, Rubber-mounted Drills, and other similar types, including at crusher plants); Manhole Builder; Nippers, and Timbermen; Power Saw Operators-Bucking and Falling; Sand Blasting (dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks; Vibrators; Vibrating Screed; Water Blaster

GROUP 4: Asphalt Rakers; Grade Checker; Concrete Nozzleman; Gunite Nozzleman; High Scalars, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping-down or sloping and stripping); Pipelayers (all types); Powdermen; Pumpcrete Nozzlemen; Loop Installation; TUNNELS: Miner; Powderman; Motorman-Dinky Locomotive; Shield Operator; Tunnel Bullganag (above ground); Tunnel-Chuck Tenders; Tunnel-Muckers, brakemen, concrete crew, bull gang (underground)

GROUP 5: Traffic Flaggers

PAIN00540	06/01/1999		
		Rates	Fringes
MORROW, UMATILLA AND WALLOWA COUNTIES			
DRYWALL FINISHERS		19.98	4.25

PAIN0055A	11/01/1999		
		Rates	Fringes
CLACKAMAS, COLUMBIA, HOOD RIVER, MULTNOMAH, MORROW, UMATILLA, WALLOWA, WASCO AND WASHINGTON COUNTIES			

PAINTERS:		
Brush & Roller	17.10	3.48
Spray, Sandblasting	17.70	3.48
High work - All work 60 feet or higher	17.60	3.48

BAKER, BENTON, CLATSOP, CROOK, DESCHUTES, GRANT, GILLIAM, HARNEY, JEFFERSON, LAKE, LANE, LINN, LINCOLN, MALHEUR, MARION, POLK, TILLAMOOK, SHERMAN, UNION, WHEELER AND YAMHILL COUNTIES

PAINTERS:		
Brush & Roller	15.98	3.48
Spray, Sandblasting	16.58	3.48
High work - All work 60 feet or higher	16.48	3.25

JACKSON AND KLAMATH COUNTIES

PAINTERS:		
Brush & Roller	13.92	3.48

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Spray, Sandblasting	14.52	3.48
High work - All work 60 feet or higher	14.42	3.48

PAIN0055K 01/01/2000

	Rates	Fringes
ALL COVERED COUNTIES (EXCLUDING MORROW, UMATILLA AND WALLOWA COUNTIES)		
DRYWALL FINISHERS	24.00	7.60

PAIN0477A 10/01/1999

	Rates	Fringes
MALHEUR COUNTY		
GLAZIERS	17.11	4.94

PAIN0477D 12/01/1982

	Rates	Fringes
MALHEUR COUNTY		
LINOLEUM, CARPET AND SOFT TILE APPLICATORS	13.66	1.19

* PAIN0740A 07/01/2001

	Rates	Fringes
ALL COVERED COUNTIES (EXCLUDING MALHEUR COUNTY)		
GLAZIERS	26.21	6.83

PAIN1236A 04/01/2001

	Rates	Fringes
ALL COVERED COUNTIES (EXCLUDING MALHEUR COUNTY)		
LINOLEUM, CARPET AND SOFT TILE APPLICATORS	23.52	6.38

PLAS0082A 06/01/1999

	Rates	Fringes
PLASTERERS	23.91	6.36

PLAS0555A 06/01/2001

	Rates	Fringes
CEMENT MASONS:		
ZONE 1:		
CEMENT MASONS	24.04	9.00
COMPOSITION WORKERS AND POWER MACHINERY OPERATORS	24.48	9.00

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CEMENT MASONS ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD	24.48	9.00
CEMENT MASONS DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD	24.93	9.00

Zone Differential (Add To Zone 1 Rates):

Zone 2 -	\$0.65
Zone 3 -	1.15
Zone 4 -	1.70
Zone 5 -	2.75

BASE POINTS: BEND, CORVALLIS, EUGENE, LONGVIEW, MEDFORD,
PORTLAND, SALEM, THE DALLES, VANCOUVER

- ZONE 1: Projects within 30 miles of the respective city hall
 ZONE 2: More than 30 miles but less than 40 miles from the
 respective city hall.
 ZONE 3: More than 40 miles but less than 50 miles from the
 respective city hall.
 ZONE 4: More than 50 miles but less than 80 miles from the
 respective city hall.
 ZONE 5: More than 80 miles from the respective city hall

* PLUM0290B 04/01/2001

	Rates	Fringes
BENTON, CLACKAMAS, CLATSOP, COLUMBIA, CROOK, DESCHUTES, GILLIAM, GRANT AND HARNEY (those portions which lies north and west of a north-south line drawn from the town of John Day to a point five miles east of the town of Burns and three miles south of Burns thence on an airline through the town of Wagontire west to the County lines), HOOD RIVER, JACKSON, JEFFERSON, KLAMATH, LAKE, LANE, LINCOLN, LINN, MARION, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, WASCO, WASHINGTON, WHEELER AND YAMHILL COUNTIES		

PLUMBERS AND PIPEFITTERS	30.85	10.56
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PLUM0296B 06/01/2000

	Rates	Fringes
BAKER, HARNEY (Remainder of County) AND MALHEUR COUNTIES		

PLUMBERS AND PIPEFITTERS	22.74	7.07
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PLUM0598A 06/01/2001

	Rates	Fringes
GRANT (Remainder of County), MORROW, UMATILLA, UNION AND WALLOWA COUNTIES		

PLUMBERS AND PIPEFITTERS	28.85	11.55
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ROOF0049A 10/01/2000

	Rates	Fringes
BAKER, CLACKAMAS, CLATSOP, COLUMBIA, GRANT, GILLIAN, HOOD RIVER, JEFFERSON, MULTNOMAH, SHERMAN, TILLAMOOK, WASCO, WASHINGTON AND WHEELER COUNTIES.		

ROOFERS	22.15	5.70
REMOVAL OF COAL TAR PITCH	24.37	5.70

ROOF0156A 07/01/2000

	Rates	Fringes
BENTON, CROOK, DESCHUTES, HARNEY, JACKSON, KLAMATH, LAKE, LANE, LINCOLN AND LINN COUNTIES		

ROOFERS	17.00	5.77
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MARION, POLK AND YAMHILL COUNTIES

ROOFERS	18.00	6.87
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* ROOF0189C 07/01/2001

	Rates	Fringes
MORROW COUNTY		

ROOFERS	17.48	5.60
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* ROOF0209A 05/01/2001

	Rates	Fringes
MALHEUR COUNTY		

ROOFERS	17.60	4.00
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SFOR0669A 04/01/2001

	Rates	Fringes
BAKER, GILLIAM, GRANT, HARNEY, MAHLHEUR, MORROW, UMATILLA, UNION, WALLOWA AND WHEELER COS.		

SPRINKLER FITTERS	24.35	8.00
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BENTON, CLACKAMAS, CLATSOP, COLUMBIA, CROOK, DESCHUTES, HOOD RIVER, JACKSON, JEFFERSON, KLAMATH, LAKE, LANE, LINCOLN, LINN, MARION, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, WASCO, WASHINGTON AND YAMHILL COS.

SPRINKLER FITTERS	26.65	8.00
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SHEE0016A 05/01/2001

	Rates	Fringes
BENTON, CLACKAMAS, CLATSOP, COLUMBIA, CROOK, DESCHUTES, GILLIAM, GRANT, HARNEY, HOOD RIVER, JEFFERSON, LINCOLN, LINN, MARION, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, WASCO, WASHINGTON, WHEELER, AND YAMHILL COUNTIES		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SHEET METAL WORKERS	26.53	10.39
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SHEE0016E 01/01/2000		
	Rates	Fringes
JACKSON AND KLAMATH COUNTIES		

SHEET METAL WORKERS (INCLUDING HVAC DUCT WORK)	17.88	6.56
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SHEE0016F 01/01/2000		
	Rates	Fringes
LAKE AND LANE COUNTIES		

SHEET METAL WORKERS (INCLUDING HVAC DUCT WORK)	21.60	8.48
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SHEE0066B 06/01/2000		
	Rates	Fringes
MORROW, UMATILLA, UNION AND WALLOWA COUNTIES		

SHEET METAL WORKERS	25.43	7.30
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SHEE0213B 06/01/2001		
	Rates	Fringes
BAKER AND MALHEUR COUNTIES		

SHEET METAL WORKERS	21.71	7.71
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TEAM0037A 06/01/2001		
	Rates	Fringes
TRUCK DRIVERS (See Footnote C):		

ZONE 1:		
GROUP 1	23.40	8.30
GROUP 2	23.52	8.30
GROUP 3	23.65	8.30
GROUP 4	23.91	8.30
GROUP 5	24.13	8.30
GROUP 6	24.29	8.30
GROUP 7	24.49	8.30

Zone Differential (add to Zone 1 rates):

- Zone 2 - \$0.65
- Zone 3 - 1.15
- Zone 4 - 1.70
- Zone 5 - 2.75

BASE POINT CITIES		
ALBANY	ASTORIA	BAKER
BEND	BROOKINGS	BURNS
COOS BAY	CORVALLIS	EUGENE
GOLDENDALE	GRANTS PASS	HERMISTON

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HOOD RIVER	KLAMATH FALLS	LA GRANDE
LAKEVIEW	LONGVIEW	MADRAS
MEDFORD	MCMINNVILLE	OREGON CITY
NEWPORT	ONTARIO	PENDLETON
PORTLAND	PORT ORFORD	REEDSPORT

Zone 1 - All jobs or projects located within 30 miles of the respective City Hall

Zone 2 - More than 30 miles and less than 40 miles from the respective City Hall

Zone 3 - More than 40 miles and less than 50 miles from the respective City Hall

Zone 4 - More than 50 miles and less than 80 miles from the respective City Hall

Zone 5 - More than 80 miles from the respective City Hall.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: A-frame or hydra-lift truck w/load bearing surface; Articulated dump truck; Battery rebuilders; Bus or manhaul driver; Concrete buggies (power operated); Concrete pump truck; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: up to and including 10 cu. yds.; Lift jitneys, fork lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or leverman on concrete dry batch plant (manually operated); Lubrication man, fuel truck driver, tireman, wash rack, steam cleaner or combination; Pilot car; Pickup Truck; Slurry truck driver or leverman; Solo flat bed and misc. body truck, 0-10 tons; Team drivers; Tireman; Transit mix and wet or dry mix trucks: 5 cu yds. and under; Water wagons (rated capacity) up to 3,000 gallons

GROUP 2: Boom Truck/hydralift or Retracing crane; Challenger; Dumpsters or similar equipment-all sizes; Dump trucks/articulated dumps 6 cu to 10 cu.; Flaherty spreader driver or leverman; Low bed equipment, flat bed semi-truck and trailer or doubles transporting equipment or wet or dry materials; Lumber carrier, driver-straddle carrier (used in loading, unloading and transporting of materials on job site); Oil distributor driver or leverman; Transit mix and wet or dry mix trucks: over 5 cu. yds and including 7 cu. yds; Vacuum trucks; Water Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia nitrate distributor driver; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds., includes articulated dump trucks; Self propelled street sweeper; Transit mix and wet or dry mix trucks, over 7 cu. yds. and including 11 cu. yds.; Truck Mechanic-Welder-Body Repairman; Utility and cleanup truck; Water Wagons (rated capacity) over 5,000 to 10,000 gallons.

GROUP 4: Asphalt Burner; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. and includes

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articulated dump trucks; Fire Guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds. and includes articulated dump trucks

GROUP 6: Bulk Cement spreader w/o auger; Dry Pre Batch Concrete; Mix trucks; Dump trucks, side, end and bottom dumps, including semi-trucks and trains of combinations thereof: over 60 cu. yds. and including 80 cu. yds. and includes articulated dump trucks; Skid truck

GROUP 7: Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds., includes articulated dump trucks; industrial lift truck (mechanical tailgate)

END OF TRUCK DRIVERS

FOOTNOTE C: HANDLING OF HAZARDOUS WASTE MATERIALS (LABORERS, POWER EQUIPMENT OPERATORS, AND TRUCK DRIVERS): Personnel in all craft classifications subject to working inside a federally designated Hazardous Waste perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of Hazardous Waste as outline in the specific Hazardous Waste Project Site Safety Plan.

H-1 Base Wage Rate when on a hazardous waste site when not outfitted with protective clothing.

H-2 Class "C" Suit - Basic hourly wage rate plus \$1.00 per hour, fringes plus \$0.15.

H-3 Class "B" Suit - Basic hourly wage rate plus \$1.50 per hour, fringes plus \$0.15.

H-4 Class "A" Suit -Basic hourly wage rate plus \$2.00 per hour, fringes plus \$0.15.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION PA010010 04/06/01 PA10

General Decision Number PA010010

Superseded General Decision No. PA000010

State: **Pennsylvania**

Construction Type:

BUILDING

County(ies):

CUMBERLAND JUNIATA YORK
 DAUPHIN PERRY

YORK COUNTY: NEW CUMBERLAND ARMY DEPOT & HARRISBURG AIRPORT ONLY

BUILDING ERECTION AND FOUNDATION EXCAVATION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) EXCLUDING SEWAGE AND WATER TREATMENT PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001

COUNTY(ies):

CUMBERLAND JUNIATA YORK
 DAUPHIN PERRY

ASBE0023D 08/01/2000

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems	22.30	8.56

BOIL0013A 01/01/2000

	Rates	Fringes
BOILERMAKERS	28.95	12.79

BRPA0016F 05/01/2000

	Rates	Fringes
YORK COUNTY (Harrisburg Airport only) BRICKLAYERS AND STONEMASONS	21.36	5.22

BRPA0046G 05/01/2000

	Rates	Fringes
JUANIATA COUNTY BRICKLAYERS AND STONEMASONS	20.05	6.97

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRPA0071A 05/01/2000

	Rates	Fringes
CUMBERLAND, DAUPHIN, AND PERRY COUNTIES		

BRICKLAYERS & STONEMASONS	21.49	5.90
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CARP0287D 05/01/2000

	Rates	Fringes
CARPENTERS AND SOFT FLOOR LAYERS LATHERS	19.18	7.23

CARP0287F 05/01/2000

	Rates	Fringes
MILLWRIGHTS	21.28	8.48

CARP0454A 07/01/2000

	Rates	Fringes
PILEDRIVERMEN	26.20	16.14+A

FOOTNOTE FOR PILEDRIVERMEN:

- A. PAID HOLIDAYS: Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day (provided the employee works the day before the holiday and the day after the holiday)
-

* ELEC0126H 01/01/2001

	Rates	Fringes
eINE CONSTRUCTION:		
Lineman , Cable Splicer	23.26	3.30+18%
Winch Truck Operator	16.28	3.30+18%
Groundman	13.96	3.30+18%

ELEC0143A 06/01/2000

	Rates	Fringes
ELECTRICIANS	21.00	7.39+3.5%

ELEV0059A 07/14/2000

	Rates	Fringes
ELEVATOR MECHANICS	26.17	7.195+A+B

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.
 B. Employer contributes 8% of basic hourly rate for 5 years or more of service as vacation pay credit, and 6% of basic hourly rate for less than 5 years of service
-

ENGI0542B 05/01/2000

	Rates	Fringes
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS:

GROUP 1	21.11	29.5%+4.96+A
GROUP 2	20.83	29.5%+4.96+A
GROUP 3	18.29	29.5%+4.47+A
GROUP 4	17.16	29.5%+4.47+A
GROUP 5	16.70	29.5%+4.47+A
GROUP 6	15.82	29.5%+4.47+A

FOOTNOTE:

A: PAID HOLIDAYS: Washington 's Birthday, Good Friday, Memorial Day, Labor Day, Presidential Election Day, Veterans Day; Thanksgiving Day and Christmas Day.

TOXIC/HAZARDOUS WASTE REMOVAL* Add 20 per cent to basic hourly rate for all classifications

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Machines doing hook work, any machine handling machinery, cable spinning machines, helicopters, lulltype forklift with boom attachment, concrete boom. truck, machines similar to the above including remote control equipment.

GROUP 2: All types of cranes (except cranes doing hook work) backhoes, cableways, draglines, keystones, shovels, derricks, trench shovels, trenching machines, hoist with two towers, pavers 21E and over, overhead cranes, building hoists (double drum) gradalls, mucking machines in tunnels, front end loaders, tandem scrapers, pippin type backhoes, boat captains, batch plant operators concrete drills, self-contained rotary drills, fork lifts, 20ft, lift and over, scrapers, tournapulls, spreaders, bulldozers and tractors, rollers (high grade finishing), mechanic-welder, motor patrols, concrete pumps, grease truck, directionall drill machines 8" and up, skid steer, hydraulic pipe pusher 8" and up, hydro ax, environmental recycling machine and grinder type machines, lull type lifts masonry tenders, shear attached to machines, grease truck, concrete placer machine, machines similar to the above including remote control equipment.

GROUP 3: Conveyors, building hoist (single drum), high or low pressure boilers, well drillers, asphalt plant engineers, ditch witch type trencher, core drill operators, forklift trucks under 20ft. lift, fine grade machines, directional drill machine 7" or less, hydraulic pipe pusher 7" or less, skid-steer forklift, machines with concrete mixer attachment, machines similar to the above including remote control equipment, miscellaneous equipment operator.

GROUP 4: Welding machines, well points, compressors, pumps, heaters, farm tractors, form line graders, road finishing machines, concrete breaking machines, rollers, seaman pulverzing mixer, power boom, seeding spreader, tireman (for power equipment), grout pump 4" and up, power broom, power sweeper, seeding spreader (self-propelled) machines similar to the above including remote control equipment.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 5: Fireman

GROUP 6: Oilers and deck hands (personnel boats)

IRON0404A	07/01/2000		
		Rates	Fringes
IRONWORKERS		21.00	10.87

LABO1180C	05/01/2000		
		Rates	Fringes
LABORERS:			
GROUP 1		14.01	5.50
GROUP 2		15.88	5.50
GROUP 3		15.58	5.50
GROUP 4		16.38	5.50

LABORERS CLASSIFICATIONS

GROUP 1: Cleaning, scrubbing, washing and polishing of floors, furniture and windows, stripping, dismantling, oiling and moving of concrete forms, loading, unloading and carrying of reinforced steel, handling and distribution of lumber of all other building materials, unloading, carrying, distributing and laying of pre-cast concrete slabs and planks in accordance with decisions of record, wrecking, moving and demolishing, underpinning and shoring of all structures, signal person and flag person, landscaping and nursery work, toolroom person, operators of salamanders, smudge pots, propane gas and kerosene burners and all other heating methods. Cleaning of precipitators, operating of jackhammers, busters, drills and all other pneumatic and electric hand tools, wagon drills, air and hydraulic, on or off tracks, power buggies, concrete mixers, pump and vibrators, walk-along compacting equipment, vibrating and tamping, gunniting machines (including the nozzle), operation of steam jennies, sandblasting (filling the pot, cleaning up of sand, use of nozzle), pumps 2: or under conveyors, vacuum cleaners, all types (ride or walk-along), concrete saws and cutting equipment, burning and welding torches, dynamite blasters and swing scaffolds, slings and bosun chairs. Laying of non metallic (clay, ironstone, terra cotta, vitrified concrete and plastic) pipe and making of joints for same, walk-along lifts and similar machines, pouring and placing of all concrete and related materials, all concrete curing applications.

GROUP 2: Asbestos removal, hazardous and toxic waste removal, all work in connection with handling, control, removal, abatement, encapsulation or disposal of asbestos and/or toxic waste will be assigned to the member of the Laborers' International Union of North America not to be limited to the erection, moving, servicing and dismantling of all tools and equipment normally used in the handling, control, removal or encapsulation of hazardous material, this Agreement covers work tasks associated with any and all safety requirements and final clean-up and disposal of such hazardous waste material.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 3: Mason tenders, mixing of mortar, plaster and mortar pumps, plaster tenders, caisson work, blast furnaces, coke ovens and all related work, erection and dismantling of all scaffolding, including tubular frame, manual and powered climbing scaffold, swing scaffolds, slings, bosum chairs, and all associated safety protection including barricades, nets and ropes, scaffold weather enclosures; shoring; mortar buggies; concrete pumps; walk-behind forklifts; electric welders torches, compressors, generators and the repair and maintenance of same; jackhammers, tampers; cut-off saws & other power equipment required for demolition; rotary-hammer drills, electric & pneumatic hand-tools; transit, levels & lasers; tempering motar; stocking scaffolds with masonry materials including brick, block, mortar, teera cotta, architectural pre-cast concrete, natural stone, insulation & mastic, flashing, anchors & ties, grout; mobile lifting platform scafforing powered by any power mode or method ; cleaning of all masonry debris.

GROUP 4: Skid-steering loader and forklift laborers. Operation of rough terrain folkifts, skid-steering loaders.

MARB0031B 05/01/2000		
	Rates	Fringes
TERRAZZO FINISHERS	23.77	4.20
MARBLE & TILE FINISHERS	17.12	4.20

MARB0071A 05/01/2000		
	Rates	Fringes
TERRAZZO WORKERS	21.82	5.90
MARBLE SETTERS, TILE LAYERS	19.52	5.90

PAIN0057V 06/01/2000		
	Rates	Fringes
JUNIATA COUNTY		
PAINTERS:		
Brush and Roller	20.22	7.37

* PAIN0057X 06/01/2000		
	Rates	Fringes
JUNIATA COUNTY		
PAINTERS		
Brush and Rollers	20.22	7.37

PAIN0252A 06/01/2000		
	Rates	Fringes
WINDOW TINTERS	16.20	4.07

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PAIN0252D 07/01/1998

	Rates	Fringes
GLAZIERS	17.43	2.89

* PAIN0411A 06/01/2000

	Rates	Fringes
(Except Juaniata County)		

PAINTERS:

	Rates	Fringes
Brush	18.34	4.63
Structural Steel	19.79	4.63
Swing	18.59	4.63
Spray	19.34	4.63
Tank, Bridge & Sandblasting	19.59	4.63

PAIN0411B 05/01/2000

	Rates	Fringes
DRYWALL FINISHERS	18.42	4.58

PLAS0592K 05/01/2000

	Rates	Fringes
CEMENT MASONS	19.75	6.40
PLASTERERS	19.22	6.41

PLUM0520B 05/01/2000

	Rates	Fringes
PLUMBERS AND STEAMFITTERS	23.98	9.19

ROOF0030A 05/01/2000

	Rates	Fringes
ROOFERS:		
Composition	24.65	12.40+A
Shingle	19.75	6.42
Slate and Tile	20.75	6.42

FOOTNOTE (Composition Roofer only):

A. PAID HOLIDAY: Election Day

* SFPA0669A 04/01/2001

	Rates	Fringes
SPRINKLER FITTERS	26.70	7.95

SHEE0019A 06/01/2000

	Rates	Fringes
SHEET METAL WORKERS	21.60	14.97+A

FOOTNOTE;

A. Paid Holiday: Election Day.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TEAM0229C 05/01/2000

	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	22.33	
GROUP 2	22.40	
GROUP 3	22.89	

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Fork lift driver, stake body truck (single axle), 1-1/2 ton and under

GROUP 2: Truck driver over 1-1/2 tons, dump trucks, tandem and batch trucks, semi-trailers, agitator mixer trucks, and dumpcrete type vehicles, asphalt distributors, farm tractor when used for transportation, stake body truck (tandem)

GROUP 3: Euclid-type, off highway equipment-back or belly dump trucks and double-hitched equipment, straddle (ross) carrier, low-bed trailers

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION PA010008 04/13/01 PA8

General Decision Number PA010008

Superseded General Decision No. PA000008

State: **Pennsylvania**

Construction Type:

BUILDING

County(ies):

LEBANON NORTHUMBERLAND SCHUYLKILL

BUILDING ERECTION AND FOUNDATION EXCAVATION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories), (excluding sewage and water treatment plant projects).

Modification Number	Publication Date
0	03/02/2001
1	04/13/2001

COUNTY(ies):

LEBANON NORTHUMBERLAND SCHUYLKILL

ASBE0023C 08/01/2000

	Rates	Fringes
LEBANON AND SCHUYLKILL COUNTIES		

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems	22.30	8.56
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ASBE0038D 07/01/2000

	Rates	Fringes
NORTHUMBERLAND COUNTY		

ASBESTOS WORKERS/INSULATORS

Includes the application of all insulating materials protective coverings, coatings & finishings to all types of mechanical systems	21.81	7.41
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BOIL0013A 01/01/2000

	Rates	Fringes
BOILERMAKERS	28.95	12.79

BRPA0046C 05/01/2000

	Rates	Fringes
NORTHUMBERLAND COUNTY		

BRICKLAYERS AND STONEMASONS

	20.55	6.97
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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRPA0047A 05/03/2000		
	Rates	Fringes
SCHUYLKILL COUNTY		
BRICKLAYERS & STONEMASONS	20.35	7.17

BRPA0071B 05/03/2000		
	Rates	Fringes
LEBANON COUNTY		
BRICKLAYERS AND STONEMASONS	21.49	5.90

CARP0076A 05/01/2000		
	Rates	Fringes
NORTHUMBERLAND COUNTY		
CARPENTERS & Soft Floor Layers	17.74	6.98
SCHUYLKILL COUNTY		
CARPENTERS & Soft Floor Layers	19.38	6.98

CARP0076E 05/01/2000		
	Rates	Fringes
SCHUYLKILL AND NORTHUMBERLAND COUNTIES		
MILLWRIGHTS	22.28	7.48

CARP0287A 05/01/2000		
	Rates	Fringes
LEBANON COUNTY		
CARPENTERS & Soft Floor Layers	19.13	7.23
MILLWRIGHTS	21.28	8.48

CARP0454A 07/01/2000		
	Rates	Fringes
PILEDRIVERMEN	26.20	16.14+A

FOOTNOTE FOR PILEDRIVERMEN:
 A. PAID HOLIDAYS: Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day (provided the employee works the day before the holiday and the day after the holiday)

* ELEC0126G 01/01/2001		
	Rates	Fringes
LEBANON COUNTY		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LINE CONSTRUCTION:

Lineman, Cable Splicer	23.26	3.30+18%
Winch Truck Operator	16.28	3.30+18%
Groundman	13.96	3.30+18%

 ELEC0143C 06/01/2000

Rates Fringes
 LEBANON AND SCHUYLKILL (Pine Grove and Tremont Townships)
 COUNTIES

ELECTRICIANS	21.00	7.39+3%
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 * ELEC0607E 10/01/2000

Rates Fringes
 REMAINDER OF NORTHUMBERLAND AND SCHUYLKILL COUNTIES

ELECTRICIANS	21.95	7.65+3%
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 ELEC0743B 09/01/1999

Rates Fringes
 SCHUYLKILL COUNTY (Haven, North Manheim, Pottsville, Schuylkill,
 South Manheim, Wayne, Washington, and West Brunswick Townships)

ELECTRICIANS	21.55	5.87+3%
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 ELEC0812E 06/01/2000

Rates Fringes
 NORTHUMBERLAND COUNTY (Delaware, Lewis, Trubut Twps.)

ELECTRICIANS	16.91	3%+8.16
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 ELEC1319J 01/02/2000

Rates Fringes
 NORTHUMBERLAND AND SCHUYLKILL COUNTIES

LINE CONSTRUCTION:

Lineman	24.74	6%+4.35
Winch Truck Operators	17.54	6%+4.35
Groundmen	15.55	6%+4.35
Truck Drivers	17.29	6%+4.35

 ELEV0059A 07/14/2000

Rates Fringes
 ELEVATOR MECHANICS

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.
- B. Employer contributes 8% of basic hourly rate for 5 years or more of service as vacation pay credit, and 6% of basic hourly rate for less than 5 years of service

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ENGI0542Y 05/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	21.11	29.5%+4.96+A
GROUP 2	20.83	29.5%+4.96+A
GROUP 3	18.29	29.5%+4.47+A
GROUP 4	17.16	29.5%+4.47+A
GROUP 5	16.70	29.5%+4.47+A
GROUP 6	15.82	29.5%+3.47+A

FOOTNOTE:

A: PAID HOLIDAYS: Washington 's Birthday, Good Friday, Memorial Day, Labor Day, Presidential Election Day, Veterans Day; Thanksgiving Day and Christmas Day.

TOXIC/HAZARDOUS WASTE REMOVAL* Add 20 per cent to basic hourly rate for all classifications

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Machines doing hook work, any machine handling machinery, cable spinning machines, helicopters, lulltype forklift with boom attachment, concrete boom. truck, machines similar to the above including remote control equipment.

GROUP 2: All types of cranes (except cranes doing hook work) backhoes, cableways, draglines, keystones, shovels, derricks, trench shovels, trenching machines, hoist with two towers, pavers 21E and over, overhead cranes, building hoists (double drum) gradalls, mucking machines in tunnels, front end loaders, tandem scrapers, pippin type backhoes, boat captains, batch plant operators concrete drills, self-contained rotary drills, fork lifts, 20ft, lift and over, scrapers, tournapulls, spreaders, bulldozers and tractors, rollers (high grade finishing), mechanic-welder, motor patrols, concrete pumps, grease truck, directionall drill machines 8" and up, skid steer, hydraulic pipe pusher 8" and up, hydro ax, environmental recycling machine and grinder type machines, lull type lifts masonry tenders, shear attached to machines, grease truck, concrete placer machine, machines similar to the above including remote control equipment.

GROUP 3: Conveyors, building hoist (single drum), high or low pressure boilers, well drillers, asphalt plant engineers, ditch witch type trencher, core drill operators, forklift trucks under 20ft. lift, fine grade machines, directional drill machine 7" or less, hydraulic pipe pusher 7" or less, skid-steer forklift, machines with concrete mixer attachment, machines similar to the above including remote control equipment, miscellaneous equipment operator.

GROUP 4: Welding machines, well points, compressors, pumps, heaters, farm tractors, form line graders, road finishing machines, concrete breaking machines, rollers, seaman pulverizing mixer, power boom, seeding spreader, tireman (for power

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

equipment), grout pump 4" and up, power broom, power sweeper, seeding spreader (self-propelled) machines similar to the above including remote control equipment.

GROUP 5: Fireman

GROUP 6: Oilers and deck hands (personnel boats)

IRON0404E 07/01/2000

	Rates	Fringes
LEBANON (Western 3/4), NORTHUMBERLAND AND SCHUYLKILL (Western tip to include the twps. of Fearnot, Good Spring, Hegins, Jolett, Klingerstown, Muir, Pittman Haas, Rough and Ready, scramento, Spring Glen, Suedberg, Tower City, and Valley View) COUNTIES		

IRONWORKERS	21.00	10.87
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IRON0420B 07/01/2000

	Rates	Fringes
SCHUYLKILL (Remainder of County)		

IRONWORKERS:

Projects \$100,000,000 and greater, all work	22.00	12.45
Projects less than 100,000,000	21.50	12.45

LABO0471D 05/01/2000

	Rates	Fringes
LEBANON COUNTY		
LABORERS:		
GROUP 1	15.36	4.75
GROUP 2	16.11	4.75
GROUP 3	16.15	4.75
GROUP 4	16.95	4.75

SEE LABORERS CLASSIFICATIONS BELOW

LABO0471E 05/01/2000

	Rates	Fringes
SCHUYLKILL COUNTY		
LABORERS:		
GROUP 1	14.55	5.15
GROUP 2	15.32	5.15
GROUP 3	16.15	5.15
GROUP 4	16.95	5.15

SEE LABORERS CLASSIFICATIONS BELOW

LABO0708C 05/01/2000

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

hazardous material, this Agreement covers work tasks associated with any and all safety requirements and final clean-up and disposal of such hazardous waste material.

GROUP 3: Mason tenders, mixing of mortar, plaster and mortar pumps, plaster tenders, caisson work, blast furnaces, coke ovens and all related work, erection and dismantling of all scaffolding, including tubular frame, manual and powered climbing scaffold, swing scaffolds, slings, bosum chairs, and all associated safety protection including barricades, nets and ropes, scaffold weather enclosures; shoring; mortar buggies; concrete pumps; walk-behind forklifts; electric welders torches, compressors, generators and the repair and maintenance of same; jackhammers, tampers; cut-off saws & other power equipment required for demolition; rotary-hammer drills, electric & pneumatic hand-tools; transit, levels & lasers; tempering motar; stocking scaffolds with masonry materials including brick, block, mortar, teera cotta, architectural pre-cast concrete, natural stone, insulation & mastic, flashing, anchors & ties, grout; mobile lifting platform scafforing powered by any power mode or method ; cleaning of all masonry debris.

GROUP 4: Skid-steering loader and forklift laborers. Operation of rough terrain folkifts, skid-steering loaders.

MARB0046A	05/03/2000		
		Rates	Fringes
NORTHUMBERLAND COUNTY			
MARBLE SETTERS, TERRAZZO WORKERS		19.92	5.90

MARB0055A	05/01/2000		
		Rates	Fringes
SCHUYLKILL COUNTY			
MARBLE SETTERS		19.52	5.90
TERRAZZO WORKERS		19.52	5.90
TILE SETTERS		19.52	5.90

MARB0071D	05/01/2000		
		Rates	Fringes
LEBANON COUNTY			
MARBLE SETTERS, TERRAZZO WORKERS, AND TILE SETTERS		19.52	5.90

PAIN0021I	06/01/2000		
		Rates	Fringes
NORTHUMBERLAND AND SCHUYLKILL (Butler, Delano, East Union, Kline, North Union, Rahn, Rush, Ryan, West Mahony, and East Penn Townships, and the City of Tamaqua) COUNTIES			

PAINTERS:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Brush	18.45	7.15
Structural Steel	19.85	7.15
Spray	19.45	7.15

PAIN0021J 06/01/2000

	Rates	Fringes
LEBANON AND SCHUYLKILL (Barry, Blythe, Branch, East and West Brunswick, Cass, Eldred, Fraily, Foster, Hegins, Hubly, New Castle, North and South Manheim, Upper Mahantango, East and West Norweigan, Pine Grove, Porter Reilly, Schuykill, Termont, Walker, Washington, and Wayne Townships		

PAINTERS:

Brush	18.45	7.15
Structural Steel	19.85	7.15
Spray	19.45	7.15

PAIN0252A 06/01/2000

	Rates	Fringes
WINDOW TINTERS	16.20	4.07

PLAS0592E 05/01/2000

	Rates	Fringes
SCHUYLKILL COUNTY		
CEMENT MASONS	21.88	4.05
PLASTERERS	21.36	4.05

PLAS0592H 05/01/2000

	Rates	Fringes
LEBANON AND NORTHUMBERLAND COUNTIES		
CEMENT MASONS	19.75	6.40
PLASTERERS	19.22	6.41

PLUM0520D 05/01/2000

	Rates	Fringes
LEBANON COUNTY (West of Route 501), AND NORTHUMBERLAND COUNTIES		
PLUMBERS & STEAMFITTERS	23.98	9.19

PLUM0524J 06/01/2000

	Rates	Fringes
SCHUYLKILL COUNTY		
PLUMBERS & STEAMFITTERS	23.87	7.85

PLUM0690C 05/01/2000

	Rates	Fringes
LEBANON COUNTY (East of Route 501)		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLUMBERS & STEAMFITTERS	24.37	10.87

ROOF0030A 05/01/2000		
	Rates	Fringes
ROOFERS:		
Composition	24.65	12.40+A
Shingle	19.75	6.42
Slate and Tile	20.75	6.42
FOOTNOTE (Composition Roofer only):		
A. PAID HOLIDAY: Election Day		

* SFPA0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	26.70	7.95

SHEE0019F 06/01/2000		
	Rates	Fringes
LEBANON COUNTY		
SHEET METAL WORKERS	21.60	14.97+A
FOOTNOTE:		
A. Paid Holiday: Election Day.		

SHEE0044B 05/01/2000		
	Rates	Fringes
NORTHUMBERLAND AND SCHUYLKILL COUNTIES		
SHEET METAL WORKERS	19.55	10.30

TEAM0229C 05/01/2000		
	Rates	Fringes
TRUCK DRIVERS:		
GROUP 1	22.33	
GROUP 2	22.40	
GROUP 3	22.89	

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Fork lift driver, stake body truck (single axle), 1-1/2 ton and under

GROUP 2: Truck driver over 1-1/2 tons, dump trucks, tandem and batch trucks, semi-trailers, agitator mixer trucks, and dumpcrete type vehicles, asphalt distributors, farm tractor when used for transportation, stake body truck (tandem)

GROUP 3: Euclid-type, off highway equipment-back or belly dump trucks and double-hitched equipment, straddle (ross) carrier, low-bed trailers

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates
listed under that identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

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ruling

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Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
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Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an
interested party (those affected by the action) can request
review and reconsideration from the Wage and Hour Administrator
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION PA010016 06/01/01 PA16

General Decision Number PA010016

Superseded General Decision No. PA000016

State: **Pennsylvania**

Construction Type:

BUILDING

County(ies):

ADAMS FRANKLIN HUNTINGDON
 BEDFORD FULTON

BUILDING ERECTION AND FOUNDATION EXCAVATION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories), EXCLUDING SEWAGE AND WATER TREATMENT PLANT PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	06/01/2001

COUNTY(ies):

ADAMS FRANKLIN HUNTINGDON
 BEDFORD FULTON

BRPA0004C	12/01/1999		
		Rates	Fringes
BEDFORD, FULTON AND HUNTINGDON COUNTIES			
BRICKLAYERS		20.50	6.68

BRPA0016C	05/01/2000		
		Rates	Fringes
ADAMS COUNTY			
BRICKLAYERS		21.36	5.22

BRPA0071C	05/01/2000		
		Rates	Fringes
FRANKLIN COUNTY			
BRICKLAYERS		21.49	5.90

CARP0287B	05/01/2000		
		Rates	Fringes
ADAMS COUNTY			
CARPENTERS (Including Drywall Hanging)		19.13	7.23

CARP1265F	06/01/2000		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
BEDFORD, FRANKLIN, FULTON, AND HUNTINGDON COUNTIES		
CARPENTERS (Including Drywall Hanging)	20.07	36.5%+.04

* CARP2235F 06/01/2001

	Rates	Fringes
BEDFORD, FRANKLIN, FULTON, AND HUNTINGDON COUNTIES		
MILLWRIGHTS	27.48	36.5%

* ELEC0005B 12/29/2000

	Rates	Fringes
BEDFORD, FULTON AND HUNTINGDON COUNTIES		
ELECTRICIANS	26.95	9.37

ELEC0143H 06/01/2000

	Rates	Fringes
FRANKLIN COUNTY		
ELECTRICIANS	21.00	3.5%+7.39

ELEC0229C 06/21/2000

	Rates	Fringes
ADAMS COUNTY		
ELECTRICIANS	21.30	3%+5.06

ENGI0066F 07/01/2000

	Rates	Fringes
BEDFORD, FRANKLIN, FULTON, AND HUNTINGDON COUNTIES		
POWER EQUIPMENT OPERATORS:		
Cranes, all types; and Hi Lift	19.815	9.12
Roller	17.14	9.12

ENGI0542X 05/01/2000

	Rates	Fringes
ADAMS COUNTY		
POWER EQUIPMENT OPERATORS		
Cranes, all types, and Hi lift	20.83	29.5%+4.96+A
Roller	17.16	29.5%+4.47+A

FOOTNOTE:

- A. PAID HOLIDAYS: Washington's Birthday, Good Friday, Memorial Day, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, and Christmas Day.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

TOXIC/HAZARDOUS WASTE REMOVAL: Add 20% to basic hourly rate.

IRON0404K 07/01/2000

	Rates	Fringes
ADAMS, FRANKLIN (Except Southwest 1/3), AND HUNTINGDON (Except Southwest 1/3)		
IRONWORKERS	21.00	10.87

IRON0568H 05/01/2000

	Rates	Fringes
BEDFORD, FRANKLIN (Southwest 1/3), FULTON AND HUNTINGDON (Southwest 1/3) COUNTIES		
IRONWORKERS:		
Structural, Ornamental, Reinforcing; Machinery Mover; Rigger and Machinery Erector; and Fence Erector	23.22	6.49
Sheeter Bucker-Up	23.47	6.49

LABO0419D 07/01/1999

	Rates	Fringes
BEDFORD, FRANKLIN, FULTON, AND HUNTINGDON COUNTIES		
LABORERS:		
Unskilled	14.40	5.65
Brick Mason Tender	14.55	5.65

LABO1167C 05/01/2000

	Rates	Fringes
ADAMS COUNTY		
LABORERS:		
Unskilled	16.50	3.64
Brick Mason Tender	17.18	3.64

PLUM0354C 06/01/2000

	Rates	Fringes
BEDFORD AND HUNTINGDON COUNTIES		
PLUMBERS & PIPEFITTERS	20.51	10.44

PLUM0520F 05/01/2000

	Rates	Fringes
ADAMS, FRANKLIN, AND FULTON COUNTIES		
PLUMBERS & PIPEFITTERS	23.98	9.19

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SUPA1014A 11/29/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS		
Backhoes	14.71	4.91
Bulldozers	14.27	4.80

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
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On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

review and reconsideration from the Wage and Hour Administrator
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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
REMAINDER OF COUNTY		
IRONWORKERS; STRUCTURAL:		
Projects under \$25 million	23.63	12.94
Projects over \$25 million	24.13	12.94

IRON0489C 07/01/2000	Rates	Fringes
TOBYHANNA ARMY DEPOT		
IRONWORKERS; STRUCTURAL	22.90	13.20

LABO1174C 05/01/2000	Rates	Fringes
LABORERS:		
Unskilled	16.40	5.80
Brick Mason Tenders	17.00	5.80

PLUM0524B 06/20/2000	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC pipe work)	23.87	7.85

SHEE0044K 05/01/2000	Rates	Fringes
SHEET METAL WORKERS (Including HVAC Duct Work)	19.55	10.30

SUPA1008A 08/10/1999	Rates	Fringes
CEMENT MASONS	17.13	1.57
PAINTERS:		
Brush & Roller	15.00	
Spray	16.00	
POWER EQUIPMENT OPERATORS:		
Backhoe	22.20	6.14
Bulldozer	22.70	6.14
Loader, Roller	26.05	2.10

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION PR010001 03/02/2001 PR1

Date: March 2, 2001

General Decision Number **PR010001**

Superseded General Decision No. PR000001

State: **Puerto Rico**

Construction Type:

BUILDING

County(ies):

STATEWIDE

BUILDING CONSTRUCTION (does not include single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

STATEWIDE

SUPR0001A 10/29/1993

	Rates	Fringes
BRICKLAYERS	5.15	.42
CARPENTERS	5.40	.34
CEMENT MASONS	5.24	.31
ELECTRICIANS (Including HVAC control wiring)	5.60	
IRONWORKERS	5.15	
LABORERS, UNSKILLED	5.15	
PAINTERS	5.15	
PIPEFITTERS	6.03	
PLUMBERS (Including HVAC work)	5.99	.31
POWER EQUIPMENT OPERATORS:		
Cranes	6.18	
Diggers	5.74	
Loaders	5.34	.26
Traxcavator	5.92	
SHEET METAL WORKERS (Including HVAC duct work)	5.91	.31
TRUCK DRIVERS	5.15	.30

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

POWER EQUIPMENT OPERATORS:

Backhoe	9.75	
Crane	14.67	
Grader	10.00	
ROOFERS	9.19	.61
SHEET METAL WORKERS (Including HVAC)	12.05	.07
SOFT FLOOR LAYERS	10.80	
SPRINKLER FITTERS	11.25	
TRUCK DRIVERS	10.80	

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION TN010035 03/02/01 TN35

General Decision Number TN010035

Superseded General Decision No. TN000035

State: **Tennessee**

Construction Type:

BUILDING

County(ies):

MONTGOMERY

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

MONTGOMERY

SUTN1008A 07/01/1989

	Rates	Fringes
BRICKLAYERS	\$9.07	
CARPENTERS (Including drywall hangers)	9.64	
ELECTRICIAN (Including fire alarms and intercoms)	9.80	
IRONWORKERS	9.00	
LABORERS (Including brick tenders, exterminating and landscaping)	6.11	
PAINTERS (Excluding drywall finishing)	8.71	.25
PLUMBERS (Including HVAC work)	11.44	.35
POWER EQUIPMENT OPERATORS: ROLLER	7.31	
ROOFERS	7.23	

WELDER -- Receive rate prescribed for craft performing operation to which welding is incidental.

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Concrete Pump and Mixer	7.50	
Crane	10.00	
Grader	8.16	
Loader	7.60	
Mechanic	8.00	
Scraper	6.75	
Tractor	6.34	
Traxcavator	6.75	
ROOFERS	9.25	1.31
SHEET METAL WORKERS	14.03	1.14
SOFT FLOOR LAYERS	8.00	
SPRINKLER FITTERS	14.57	2.83
TILE SETTER	7.00	
TRUCK DRIVER	5.00	

FOOTNOTE:

- a. Seven Paid Holidays: New Years's Day;

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION TX010009 06/01/01 TX9

General Decision Number TX010009

Superseded General Decision No. TX000009

State: **TEXAS**

Construction Type:

BUILDING

County(ies):

EL PASO TERRELL

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories). (Use current highway General Wage Determination for Paving & Utilities Incidental to Building Construction).

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	04/13/2001
3	06/01/2001

COUNTY(ies):

EL PASO TERRELL

BRTX0001H 11/01/1999

	Rates	Fringes
BRICKLAYERS	16.05	3.05

* ELEC0583D 06/01/2001

	Rates	Fringes
ELECTRICIANS	17.20	3.85+4.25%
CABLE SPLICERS	17.45	3.85+4.25%

ENGI0953B 06/01/1999

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Forklift	12.97	2.90
Hydraulic Crane	12.97	2.90
Tower Crane	15.45	2.90

LABO0016B 04/01/2001

	Rates	Fringes
MASON TENDERS	10.76	2.13

SHEE0049D 07/01/1995

	Rates	Fringes
SHEET METAL WORKERS		
All Other Work	16.35	3.46

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

SUTX1056A 03/01/1990	Rates	Fringes
CARPENTERS (Excluding batt installation); (Including acoustical ceiling installation and drywall hanging)	7.96	
CEMENT MASONS	8.04	
GLAZIERS	6.75	
INSULATOR - BATT	6.18	
IRONWORKERS;		
Reinforcing	9.00	
Structural	8.05	
LABORERS (including landscaping)	5.15	
PAINTERS, BRUSH & ROLLER (including drywall finishing)	7.62	
PLUMBERS & PIPEFITTERS:		
HVAC work only	9.49	
All other work	9.17	
POWER EQUIPMENT OPERATORS:		
Backhoe	7.45	
ROOFERS	5.80	
SHEET METAL WORKERS;		
HVAC duct work only	7.72	
SPRINKLER FITTERS	8.00	
TRUCK DRIVERS	5.95	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION TX010051 03/02/01 TX51

General Decision Number TX010051

Superseded General Decision No. TX000051

State: **TEXAS**

Construction Type:

BUILDING

County(ies):

BELL CORYELL

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories).

Modification Number Publication Date

0 03/02/2001

COUNTY(ies):

BELL CORYELL

ELEC0072A 08/31/2000

	Rates	Fringes
ELECTRICIANS	19.10	3.50+3.5%
CABLE SPLICERS	20.10	3.50+3.5%

IRON0482B 06/01/2000

	Rates	Fringes
IRONWORKERS, Structural	15.85	4.35

SUTX1067A 11/16/1991

	Rates	Fringes
AIR CONDITIONING AND HEATING MECHANICS (Excluding Duct Work)	9.10	
BRICKLAYERS	14.00	
CARPENTERS (Including Drywall Hangers)	11.58	
CEMENT MASONS	10.50	
GLAZIERS	7.00	.46
INSULATION INSTALLERS (Batt and Blown)	8.31	.54
IRONWORKERS, Reinforcing	11.00	
LABORERS (Including Mason Tenders)	5.61	
LATHERS	15.33	
PAINTERS	8.32	.13
PLASTERERS	12.78	
PLUMBERS AND PIPEFITTERS (Excluding HVAC Work)	10.07	
POWER EQUIPMENT OPERATORS: Backhoes	8.54	
ROOFERS	7.78	
SHEET METAL WORKERS (Including		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

HVAC Work)	9.79	
SOFT FLOOR LAYERS	13.46	.26
TILE SETTERS	15.00	.25

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

INCIDENTAL PAVING AND UTILITIES

ASPHALT HEATER OPERATOR	7.55	
ASPHALT RAKER	6.50	
CARPENTER	8.75	
CONCRETE FINISHER-PAVING	8.50	
CONCRETE FINISHER-STRUCTURES	8.35	
ELECTRICIAN	14.00	
FORM BUILDER-STRUCTURES	8.90	
FORM LINER-PAVING & CURB	8.05	
FORM SETTER-PAVING & CURB	7.10	
FORM SETTER-STRUCTURES	7.70	
LABORER-COMMON	5.60	
LABORER-UTILITY	6.45	
MECHANIC	10.00	
SERVICER	6.60	
PIPELAYER	5.70	
POWER EQUIPMENT OPERATORS:		
Asphalt Distributor	7.00	
Asphalt Paving Machine	7.15	
Broom or Sweeper Operator	6.60	
Bulldozer, 150 HP & Less	7.10	
Bulldozer over 150 HP	7.35	
Concrete Paving Finishing Machine	7.00	
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel Less than 1 1/2 C.Y.	8.00	
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel 1 1/2 C.Y. & Over	9.45	
Foundation Drill Operator, Truck Mounted	10.50	
Front End Loader 2 1/2 C.Y. & Less	7.10	
Front End Loader Over 2 1/2 C.Y.	7.85	
Motor Grader Operator, Fine Grade	9.05	
Motor Grader Operator	8.35	
Roller, Steel Wheel, Plant-Mix Pavement	6.20	
Roller, Steel Wheel Other Flatwheel or Tamping	5.95	
Roller, Pneumatic, Self Propelled	5.90	
Scraper, 17 C.Y. & Less	6.15	
Scraper, Over 17 C.Y.	7.10	
Side Boom	6.30	
Tractor, (Pneumatic) 80 HP & Less	6.00	
Tractor, (Pneumatic) over 80 HP	7.20	
TRUCK DRIVERS:		
Single Axle, Light	6.45	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Single Axle, Heavy	6.60
Tandem Axle or Semi-trailer	6.55
WELDER	9.50

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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION TX010003 05/11/01 TX3

General Decision Number TX010003

Superseded General Decision No. TX000003

State: **TEXAS**

Construction Type:

BUILDING

County(ies):

BEXAR

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories). (Use current heavy & highway general wage determination for Paving & Utilities Incidental to Building Construction).

Modification Number	Publication Date
0	03/02/2001
1	03/30/2001
2	04/13/2001
3	05/11/2001

COUNTY(ies):

BEXAR

ASBE0087A 07/01/2000

	Rates	Fringes
ASBESTOS/INSULATORS WORKERS (Includes application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems.)	18.53	5.49

BRTX0001D 11/01/1999

	Rates	Fringes
BRICKLAYERS	16.05	3.05

ELEC0060A 12/01/2000

	Rates	Fringes
ELECTRICIANS (Including pulling and installing cable through conduit for low voltage)	18.60	2.20+8%
CABLE SPLICERS	18.85	2.20+8%

ELEV0081A 07/11/2000

	Rates	Fringes
ELEVATOR CONSTRUCTORS: MECHANIC	21.475	7.195+A

FOOTNOTE; A = UNDER 5 YEARS EMPLOYMENT, 6% BHR; OVER 5 YEARS EMPLOYMENT, 8% BHR. PAID HOLIDAYS : New Year's Day, Memorial Day,

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day and Christmas Day.

ENGI0450A 04/01/1994		
	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Cranes	12.95	3.30

IRON0066A 06/01/2000		
	Rates	Fringes
IRONWORKERS (Excluding metal building erectors)		
Structural	15.10	4.35

MARB0002B 05/01/1995		
	Rates	Fringes
TILE SETTERS	13.79	2.07

PLUM0142A 07/01/2000		
	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC WORK)	22.14	5.04

SFTX0669A 04/01/2001		
	Rates	Fringes
SPRINKLER FITTERS	22.62	7.35

* SHEE0067A 07/01/2000		
	Rates	Fringes
SHEET METAL WORKERS (Including HVAC Duct Work)	20.60	5.94

SUTX1052A 11/01/1988		
	Rates	Fringes
ACOUSTICAL CEILING INSTALLERS	12.26	
CARPENTERS (Excluding Acoustical Ceiling Installer & Drywall Hanger	10.64	
CEMENT MASONS	11.46	
DRYWALL HANGERS	11.88	
GLAZIERS	10.78	1.40
IRONWORKERS (Excluding Metal Building Assemblers):		
REINFORCING	10.19	3.57

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

LABORERS:

Unskilled	7.06	
Mason Tenders	8.36	1.78
Mortar Mixers	8.99	

PLASTERER'S TENDERS 8.68

LATHERS 15.25

PAINTERS (Excluding Tapers/Finishers) 8.01

PLASTERERS 15.25

POWER EQUIPMENT OPERATORS

Front End Loader 7.36

ROOFERS:

Roofers 8.14

Kettlemen 8.85

Waterproofers 6.88

SHEET METAL WORKERS:

Other Work 11.62

TAPERS/FINISHERS 7.99

TRUCK DRIVERS 7.10

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
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position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION VA010078 07/06/2001 VA78

Date: July 6, 2001
 General Decision Number **VA010078**

Superseded General Decision No. VA000078

State: **Virginia**

Construction Type:
BUILDING

County(ies):
 ARLINGTON

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	05/04/2001
3	05/25/2001
4	06/15/2001
5	07/06/2001

COUNTY(ies):
 ARLINGTON

	Rates	Fringes
ASBE0024A 03/01/2001 ASBESTOS WORKERS/HEAT AND FROST INSULATORS Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

ASBE0024B 10/01/2000 HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

CARP2311A 05/01/2001		
	Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PILEDRIVERS	19.65	4.50

ELEC0026A 06/04/2001		
	Rates	Fringes
ELECTRICIANS	27.08	6.69 + 3%

PAIN0051D 06/16/2000		
	Rates	Fringes
GLAZIERS		
Contracts over \$2,000,000	21.15	5.64
Contracts \$2,000,000 and under	19.95	5.64

PAIN0051M 06/16/2000		
	Rates	Fringes
PAINTERS:		
Brush, Roller, Spray and Drywall Finishers	20.23	5.47

PLAS0891A 05/01/2000		
	Rates	Fringes
CEMENT MASONS	19.80	3.895

PLUM0005E 09/01/2000		
	Rates	Fringes
PLUMBERS:		
Apartment Buildings over 4 stories (except hotels), schools, colleges, and speculative office buildings, strip shopping centers, churches, water coolers, room air conditioning units, appliances, packaged ice machines, and light commercial refrigeration and/or air conditioning systems serving a single business in a single story building and not to exceed 5 h.p. or tons, self-contained package unit up to and including 5 h.p. or tons.	17.04	5.085
All other work	25.80	8.035

PLUM0602A 08/01/2000		
	Rates	Fringes
STEAMFITTERS, REFRIGERATION AND AIR CONDITIONING MECHANICS:		
Light commercial refrigeration and/or air conditioning systems serving a single business; the air conditioning systems shall		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

not total more than 15 tons
 and the refrigeration system
 shall not total more than 7 1/2
 tons; apartment buildings over
 4 stories with individual units
 not to exceed 5 tons (excluding
 split units)

13.75 8.105

All other work

25.71 8.105

* SFVA0669A 04/01/2001

SPRINKLER FITTERS

Rates
 25.20

Fringes
 7.00

* SHEE0100B 07/01/2001

SHEET METAL WORKERS (Including
 HVAC Duct Work)

Rates
 26.18

Fringes
 7.41

SUVA1105A 05/12/2000

CARPENTERS (Including Drywall
 Hanging)
 LABORERS, UNSKILLED

Rates
 16.76
 11.33

Fringes
 3.69
 2.60

WELDERS - Receive rate prescribed for craft performing operation
 to which welding is incidental.

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION VA010034 03/02/01 VA34

General Decision Number VA010034

Superseded General Decision No. VA000034

State: **Virginia**

Construction Type:

BUILDING

County(ies):

CAROLINE

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001

COUNTY(ies):

CAROLINE

ELEC0666A 12/01/2000

	Rates	Fringes
ELECTRICIANS	21.17	3.18+11.00%

SUVA1012A 02/01/1988

	Rates	Fringes
BRICKLAYERS	13.15	
CARPENTERS (Excluding Drywall Hangers)	9.95	
CEMENT MASONS	9.73	
LABORERS, UNSKILLED	6.28	
PAINTERS (Excluding Drywall Finishers)	10.89	2.08
PLUMBERS	10.91	1.64
ROOFERS	7.52	
SHEET METAL WORKERS	9.84	1.44
TRUCK DRIVERS	5.94	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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- * a Wage and Hour Division letter setting forth a position on a wage determination matter
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On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION VA010079 07/06/2001 VA79

Date: July 6, 2001
 General Decision Number **VA010079**

Superseded General Decision No. VA000079

State: **Virginia**

Construction Type:
BUILDING

County(ies):
 FAIRFAX FALLS CHURCH*

*INDEPENDENT CITY

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	05/04/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):
 FAIRFAX FALLS CHURCH*

	Rates	Fringes
ASBE0024A 03/01/2001		
ASBESTOS WORKERS/HEAT AND FROST INSULATORS		
Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	23.12	7.54

	Rates	Fringes
ASBE0024B 10/01/2000		
HAZARDOUS MATERIAL HANDLER		
Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.	13.00	2.83

CARP0132M 05/01/2000

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
CARPENTERS (Including Acoustical Ceiling Installation, Batt Insulation and Form Setting)	19.77	3.71
PILEDRIVERS	19.10	3.95

ELEC0026C 12/06/1999		
	Rates	Fringes
COMMUNICATION TECHNICIANS	19.00	3.49

SCOPE OF WORK:

Includes low voltage construction, installation, maintenance and removal of teledata facilities (voice, data and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, railroad communications, micro waves, V SAT, bypass, CATV, WAN (Wide area networks), LAN (Local area networks) and ISDN (Integrated systems digital network).

WORK EXCLUDED:

The installation of computer systems in industrial applications such as assembly lines, robotics and computer controller manufacturing systems.
 The installation of conduit and/or raceways shall be installed by Inside Wiremen. On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway or conduit not greater than 10 feet.
 Fire alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit.
 All HVAC control work.

ELEC0026R 02/05/2001		
	Rates	Fringes
LIGHTNING PROTECTION TECHNICIANS	18.06	3.50+3%

* ELEC0026S 06/04/2001		
	Rates	Fringes
ELECTRICIANS (Excluding Communication Low Voltage Wiring and Lightning Protection Wiring)	27.08	6.69 + 3%

ENGI0077P 05/01/2001		
	Rates	Fringes
POWER EQUIPMENT OPERATORS Cranes, 35 ton and above; Concrete Boom Pump	22.29	4.77+a

- a. PAID HOLIDAYS: New Year's Day, Inaugural Day, Decoration Day, Independence Day, Labor Day, Martin Luther King's Birthday, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRON0005A	06/01/2001		
		Rates	Fringes
IRONWORKERS:			
Structural, Ornamental and Chain Link Fence		22.53	8.055

IRON0201A	05/01/2001		
		Rates	Fringes
IRONWORKERS:			
Reinforcing		21.70	8.40

PAIN0051D	06/16/2000		
		Rates	Fringes
GLAZIERS			
Contracts over \$2,000,000		21.15	5.64
Contracts \$2,000,000 and under		19.95	5.64

PAIN0051M	06/16/2000		
		Rates	Fringes
PAINTERS:			
Brush, Roller, Spray and Drywall Finishers		20.23	5.47

PLAS0891A	05/01/2001		
		Rates	Fringes
CEMENT MASONS		20.52	3.895

PLUM0005E	09/01/2000		
		Rates	Fringes
PLUMBERS:			
Apartment Buildings over 4 stories (except hotels), schools, colleges, and speculative office buildings, strip shopping centers, churches, water coolers, room air conditioning units, appliances, packaged ice machines, and light commercial refrigeration and/or air conditioning systems serving a single business in a single story building and not to exceed 5 h.p. or tons, self-contained package unit up to and including 5 h.p. or tons.		17.04	5.085
All other work		25.80	8.035

PLUM0602F 08/01/2000

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
STEAMFITTERS, REFRIGERATION AND AIR CONDITIONING MECHANICS (Including HVAC Pipe Work):		
Light commercial refrigeration and/or air conditioning systems serving a single business; the air conditioning systems shall not total more than 15 tons and the refrigeration system shall not total more than 7 1/2 tons; apartment buildings over 4 stories with individual units not to exceed 5 tons (excluding split units)	13.75	8.105
All other work	25.71	8.105

	Rates	Fringes
* SFVA0669A 04/01/2001		
SPRINKLER FITTERS	25.20	7.00

	Rates	Fringes
* SHEE0100B 07/01/2001		
SHEET METAL WORKERS (Including HVAC Duct Work)	26.18	7.41

	Rates	Fringes
SUVA1103A 05/12/2000		
BRICKLAYERS	18.00	
LABORERS:		
Unskilled	10.22	
Mason Tenders, Brick	10.22	
POWER EQUIPMENT OPERATORS:		
Backhoes	16.00	
ROOFERS	16.43	1.63
TRUCK DRIVERS, DUMP	12.50	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
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Washington, D. C. 20210

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U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION VA010003 06/01/01 VA3

General Decision Number VA010003

Superseded General Decision No. VA000003

State: **Virginia**

Construction Type:

BUILDING

County(ies):

NEWPORT NEWS*

***INDEPENDENT CITY OF NEWPORT NEWS (INCLUDING FORT EUSTIS)**

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	05/04/2001
3	06/01/2001

COUNTY(ies):

NEWPORT NEWS*

ELEC1340A 12/01/2000

	Rates	Fringes
ELECTRICIANS	18.60	2.25+11.25%

* ENGI0147G 05/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Cranes, Under 90 tons	18.88	5.93
Oilers	11.71	5.93

IRON0079B 05/01/2001

	Rates	Fringes
IRONWORKERS:		
Structural and Rigging	18.63	4.86+12.4%

LABO0388A 09/01/2000

	Rates	Fringes
MASON TENDERS, BRICK	10.10	1.70

PLUM0540E 05/01/2000

	Rates	Fringes
PIPEFITTERS (Including HVAC Pipe Work)	20.25	6.37

SUVA1098A 06/11/1999

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

	Rates	Fringes
CARPENTERS (Including Form Work) (Excluding Drywall Hanging and Acoustical Ceiling Work)	12.75	
CEMENT FINISHERS	12.11	
DRYWALL FINISHERS	12.50	
DRYWALL HANGERS	12.50	
HVAC MECHANICS (Installation and Repair ONLY)	15.00	
LABORERS, UNSKILLED	7.34	
PLASTERERS	11.40	
PLUMBERS	15.65	3.19
POWER EQUIPMENT OPERATORS:		
Backhoes	10.23	
Bulldozers	11.30	
Forklifts	8.58	
Loaders	10.30	
SHEET METAL WORKERS (HVAC Duct Work ONLY)	15.00	
TRUCK DRIVERS, DUMP	9.00	

WELDERS - Receive rate prescribed for craft performing operation
to which welding is incidental.
=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29 CFR 5.5(a)(1)(v)).

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listed under that identifier do not reflect collectively
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indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
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- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a
position on a wage determination matter
- * a conformance (additional classification and rate)
ruling

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Regional Office for the area in which the survey was conducted
because those Regional Offices have responsibility for the
Davis-Bacon survey program. If the response from this initial
contact is not satisfactory, then the process described in 2.)
and 3.) should be followed.

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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Wage and Hour Division
U. S. Department of Labor
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U.S. Department of Labor
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Washington, D. C. 20210

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U. S. Department of Labor
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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

WAGE DETERMINATION APPEALS PROCESS

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Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION VA010035 06/01/01 VA35

General Decision Number VA010035

Superseded General Decision No. VA000035

State: **Virginia**

Construction Type:

BUILDING

County(ies):

HAMPTON*

***INDEPENDENT CITY OF HAMPTON (INCLUDING LANGLEY AIR FORCE BASE AND FORT MONROE)**

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	05/04/2001
3	06/01/2001

COUNTY(ies):

HAMPTON*

ELEC1340A 12/01/2000

	Rates	Fringes
ELECTRICIANS	18.60	2.25+11.25%

* ENGI0147D 05/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS: Cranes, Under 90 tons	18.88	5.93

IRON0079A 05/01/2001

	Rates	Fringes
IRONWORKERS, RIGGING	18.63	4.86+12.4%

PLUM0540A 05/01/2000

	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC Work)	20.25	6.37

SUVA1097A 06/11/1999

	Rates	Fringes
ACOUSTICAL CEILING MECHANICS	13.13	
BRICKLAYERS	16.61	
CARPENTERS:		
Form Work ONLY	12.13	2.15
All Other Work (Excluding		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Drywall Hanging and Acoustical Ceiling Work)	12.90	2.15
CEMENT FINISHERS	11.38	
DRYWALL FINISHERS	12.42	2.15
DRYWALL HANGERS (Including Metal Stud Framing)	13.07	.76
GLAZIERS	16.22	
IRONWORKERS, STRUCTURAL	16.80	4.40
LABORERS:		
Unskilled	7.72	
Mason Tenders, Brick	12.68	
LATHERS	12.00	
PAINTERS, BRUSH AND ROLLER (Excluding Drywall Finishing)	10.94	
PLASTERERS	13.30	
POWER EQUIPMENT OPERATORS:		
Backhoes	11.58	
Forklifts	8.33	
ROOFERS	11.94	
SHEET METAL PANEL INSTALLERS	10.76	.59
TRUCK DRIVERS, DUMP	8.46	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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U. S. Department of Labor
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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION VA010015 07/06/2001 VA15

Date: July 6, 2001
 General Decision Number **VA010015**

Superseded General Decision No. VA000015

State: **Virginia**

Construction Type:
BUILDING

County(ies):
 CHESAPEAKE* PORTSMOUTH*
 NORFOLK* VIRGINIA BEACH*

*INDEPENDENT CITIES

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/06/2001
2	05/04/2001
3	06/01/2001
4	07/06/2001

COUNTY(ies):
 CHESAPEAKE* PORTSMOUTH*
 NORFOLK* VIRGINIA BEACH*

ASBE0085B 05/01/2001

	Rates	Fringes
ASBESTOS WORKERS/INSULATORS: Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.	17.63	4.79

BOIL0045A 10/01/1999

	Rates	Fringes
BOILERMAKERS	21.37	10.66

* BRVA0001A 05/01/2001

	Rates	Fringes
BRICKLAYERS	17.38	4.86

ELEC0080D 03/01/2001

	Rates	Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

ELECTRICIANS	19.10	2.50+11.25%
--------------	-------	-------------

+a

a. Workmen shall take off 2 hours with pay, at the discretion of the employer, on State and National Election days; Tuesday following the first Monday in November, provided they are qualified and vote.

ELEV0052A 12/13/2000		
	Rates	Fringes
ELEVATOR MECHANICS	22.05	7.195+a+b

- a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.
- b. VACATIONS: 6% men under 5 (five) years based on regular hourly rate and 8% men over 5 (five) years based on regular hourly rate for all hours worked.

ENGI0147V 05/01/2001		
	Rates	Fringes
POWER EQUIPMENT OPERATORS: Cranes, under 90 tons;		
Excavators	18.88	5.93
Forklifts, Loaders	15.10	5.93
Oilers	11.71	5.93

IRON0079K 05/01/2001		
	Rates	Fringes
IRONWORKERS: Structural, Reinforcing, and Sheeting	18.63	4.86+12.4%

LABO0388A 09/01/2000		
	Rates	Fringes
MASON TENDERS, BRICK	10.10	1.70

PAIN1846A 11/01/1999		
	Rates	Fringes
GLAZIERS	16.65	2.23

PLUM0110D 05/01/2001		
	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC Work)	19.85	7.89

SUVA1063A 06/22/1994		
	Rates	Fringes
ACOUSTICAL CEILING MECHANICS	10.90	

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CARPENTERS (Excluding Drywall Hanging, Acoustical Ceilings and Batt Insulation Installation)	11.98	2.59
CEMENT MASONS	11.87	
DRYWALL FINISHERS	11.63	
DRYWALL HANGERS	11.82	
LATHERS	12.00	
LABORERS, UNSKILLED	6.65	
PAINTERS, BRUSH AND ROLLER (Excluding Drywall Finishing)	10.51	0.70
PLASTERERS	12.79	
POWER EQUIPMENT OPERATORS:		
Backhoes	11.93	2.53
Bulldozers	11.31	
ROOFERS	10.52	
SHEET METAL MECHANICS (Including HVAC Duct Work)	12.09	2.06
SPRINKLER FITTERS	12.13	1.49
TILE FINISHERS	9.30	
TILE SETTERS	13.35	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

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WAGE DETERMINATION APPEALS PROCESS

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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200 Constitution Avenue, N. W.
Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GENERAL DECISION WA010002 07/06/2001 WA2

Date: July 6, 2001

General Decision Number **WA010002**

Superseded General Decision No. WA000002

State: **Washington**

Construction Type:

BUILDING

County(ies):

CHELAN	KITSAP	PIERCE
CLALLAM	KITTITAS	SNOHOMISH
GRAYS HARBOR	LEWIS	THURSTON
JEFFERSON	MASON	
KING	PACIFIC	

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	03/16/2001
3	03/30/2001
4	04/06/2001
5	04/20/2001
6	05/11/2001
7	06/01/2001
8	06/15/2001
9	06/22/2001
10	07/06/2001

COUNTY(ies):

CHELAN	KITSAP	PIERCE
CLALLAM	KITTITAS	SNOHOMISH
GRAYS HARBOR	LEWIS	THURSTON
JEFFERSON	MASON	
KING	PACIFIC	

ASBE0007A 08/01/2000

Rates Fringes

ASBESTOS WORKERS/INSULATORS:
 (Includes application of all insulating materials, protective coverings, coating and finishes to all types of mechanical systems)

28.54 5.97

BOIL0242B 10/01/2000

Rates Fringes

CHELAN AND KITTITAS COUNTIES

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BOILERMAKERS 25.32 9.81

BOIL0502B 10/01/1996

Rates Fringes
 CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS,
 MASON, PACIFIC, PIERCE, SNOHOMISH AND THURSTON COUNTIES

BOILERMAKERS 24.32 9.01

BRWA0001A 06/01/2000

Rates Fringes
 CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON,
 PACIFIC (northern part), PIERCE, SNOHOMISH AND THURSTON COUNTIES

BRICKLAYERS 29.13 6.74

BRWA0001F 05/01/2000

Rates Fringes
 PACIFIC COUNTY (SOUTHERN PART)

BRICKLAYERS 24.94 8.03
 MARBLE MASONS 25.94 8.03

BRWA0001G 05/01/1997

Rates Fringes
 PACIFIC (SOUTHERN PORTION) COUNTY

TILE SETTER AND TERRAZZO WORKERS 22.18 5.82
 TILE AND TERRAZZO FINISHERS 16.77 4.27

BRWA0001H 06/01/1999

Rates Fringes
 CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON,
 PACIFIC (NORTHERN HALF), PIERCE, THURSTON AND SNOHOMISH COUNTIES

TILE AND TERRAZZO WORKERS 24.92 6.06
 TILE AND TERRAZZO FINISHERS 19.55 5.56

BRWA0003A 06/01/1999

Rates Fringes
 CHELAN AND KITTITAS COUNTIES

BRICKLAYERS 22.36 7.06

BRWA0003E 07/01/2000

Rates Fringes
 CHELAN AND KITTITAS

TILE AND TERRAZZO FINISHERS 14.70 5.83

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

BRWA0003F 07/01/2000

	Rates	Fringes
CLELAN AND KITTITAS		
TERRAZZO WORKERS & TILE LAYER	18.50	5.83

* CARP0770E 06/01/2001

WESTERN WASHINGTON: CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (NORTH), PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
CARPENTERS AND DRYWALL APPLICATORS	27.22	7.12
CARPENTERS ON CREOSOTE MATERIAL	27.32	7.12
INSULATION APPLICATORS	24.77	7.12
SAWFILERS, STATIONARY POWER SAW OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLER, FLOOR SANDER OPERATORS OF OTHER STATIONARY WOOD WORKING TOOLS	27.35	7.12
MILLWRIGHT AND MACHINE ERECTORS	28.22	7.12
ACOUSTICAL WORKERS	27.38	7.12
PILEDRIIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	27.42	7.12
PILDRIIVER, BRIDGE DOCK & WHARF CARPENTERS	27.22	7.12
DIVERS	67.18	7.12
DIVERS TENDER	29.89	7.12

(HOURLY ZONE PAY APPLICABLE TO ALL CLASSIFICATIONS EXCEPT MILLWRIGHT AND PILEDRIIVER)

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay		
0 -25	radius miles	Free
25-35	radius miles	\$1.00/hour
35-45	radius miles	\$1.15/hour
45-55	radius miles	\$1.35/hour
Over 55	radius miles	\$1.55/hour

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
 (HOURLY ZONE PAY - MILLWRIGHTS AND PILEDRIVERS ONLY)

Hour Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay		
0 -25	radius miles	Free
25-45	radius miles	\$.70/hour
Over 45	radius miles	\$1.50/hour

Millwrights and Piledrivers who reside in Aberdeen, Bellingham, Port Angeles, Mount Vernon, Olympia, Wenatchee, or Yakima Local Union jurisdiction areas, working on jobs in their respective area, shall have their Zone Pay measured from their respective city center

CENTRAL WASHINGTON: CHELAN AND KITTITAS COUNTIES

CARPENTERS AND DRYWALL APPLICATORS	20.72	7.12
CARPENTERS ON CREOSOTED MATERIALS	20.72	7.12
INSULATION APPLICATORS	20.72	7.12
SAWFILER, STATIONARY POWER SAW OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLERS, FLOOR SANDER OPERATOR AND OPERATORS OF OTHER STATIONARY WOOD WORKING TOOLS	20.85	7.12
MILLWRIGHTS AND MACHINE ERECTORS	28.22	7.12
ACCOUSTICAL WORKERS	20.98	7.12

PILDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING, OR CREOSOTE TREATED MATERIAL, ALL PILING	27.22	7.12
PILEDRIVER, BRIDGE DOCK & WHARF CARPENTERS	27.42	7.12
DIVERS	67.18	7.12
DIVERS TENDER	29.89	7.12

CARP9003A 06/01/2000

	Rates	Fringes
PACIFIC COUNTY (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the Pacific Ocean, and thence north through the natural waterway to the Pacific Ocean (this will include the entire peninsula west of Willapa Bay))		

SEE ZONE DESCRIPTION FOR CITIES BASE POINTS

ZONE 1:

CARPENTERS	25.61	7.08
DRYWALL, ACOUSTICAL & LATHERS	25.61	7.08
FLOOR LAYERS & FLOOR FINISHERS (the laying of all hardwood floors nailed and mastic set,		

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

parquet and wood-type tiles, and block floors, the sanding and finishing of floors, the prepara- tion of old and new floors when the materials mentioned above are to be installed; INSULATORS (fiberglass and similar irritating material)	25.76	7.08
MILLWRIGHTS	26.11	7.08
PILEDRIVERS	26.11	7.08
DIVERS	60.81	7.08
DIVERS TENDERS	28.02	7.08

Zone Differential (Add to Zone 1 rates):

Zone 2 - \$0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

- ZONE 1: Projects located within 30 miles of the respective city hall of the above mentioned cities
- ZONE 2: Projects located more than 30 miles and less than 40 miles of the respective city of the above mentioned cities
- ZONE 3: Projects located more than 40 miles and less than 50 miles of the respective city of the above mentioned cities
- ZONE 4: Projects located more than 50 miles and less than 60 miles of the respective city of the above mentioned cities.
- ZONE 5: Projects located more than 60 miles and less than 70 miles of the respective city of the above mentioned cities
- ZONE 6: Projects located more than 70 miles of the respected city of the above mentioned cities

ELEC0046B 06/05/2000		
	Rates	Fringes
CALLAM, JEFFERSON, KING AND KITSAP COUNTIES		
ELECTRICIANS	30.50	3%+8.41
CABLE SPLICERS	33.55	3%+8.41

ELEC0046C 06/01/2001		
	Rates	Fringes
CALLAM, JEFFERSON, KING, KITSAP COUNTIES		
SOUND AND COMMUNICATION TECHNICIAN	20.11	4.59

SCOPE OF WORK

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Includes the installation, testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms, fire alarms and life safety systems (hang, terminate devices and panels and to conduct functional and systems tests), and low voltage master clock systems.

WORK EXCLUDED

Raceway systems are not covered (excluding Ladder-Rack for the purpose of the above listed systems). Chases and/or nipples (not to exceed 10 feet) may be installed on open wiring systems.

Energy management systems.

SCADA (Supervisory Control and Data Acquisition) when not intrinsic to the above listed systems (in the scope).

ELEC0076A	01/01/2000		
		Rates	Fringes
GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, THURSTON	COUNTIES		
ELECTRICIANS		26.20	8.47+3%
CABLE SPLICERS		28.82	8.47+3%

ELEC0076D	06/01/2000		
		Rates	Fringes
GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE AND THURSTON	COUNTIES		
SOUND AND COMMUNICATIONS			
TECHNICIAN		18.59	5.24

SCOPE OF WORK

Includes the installation, testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems

SCADA (Supervisory control/data acquisition

PCM (Pulse code modulation)

Inventory control systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Digital data systems
Broadband & baseband and carriers
Point of sale systems
VSAT data systems
Data communication systems
RF and remote control systems
Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems

Background-Foreground Music
Intercom and Telephone Interconnect Systems
Sound and Musical Entertainment Systems
Nurse Call Systems
Radio Page Systems
School Intercom and Sound Systems
Burglar Alarm Systems
Low-Voltage Master Clock Systems
Multi-Media/Multiplex Systems
Telephone Systems
RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems

Television Monitoring and Surveillance Systems
Video Security Systems
Video Entertainment Systems
Video Educational Systems

Microwave Transmission Systems
CATV and CCTV

E. Security Systems

Perimeter Security Systems
Vibration Sensor Systems
Sonar/Infrared Monitoring Equipment
Access Control Systems
Card Access Systems

*Fire Alarm Systems

1. Fire Alarms-In Raceways
 - a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
 - b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.
2. Fire Alarms-Open Wire Systems
 - a. Open wire systems installed by the technician.

ELEC0112B 12/01/2000

	Rates	Fringes
KITTITAS COUNTY		
ELECTRICIANS	27.75	3%+6.93

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CABLE SPLICERS	29.14	3%+6.93
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ELEC0112G 06/01/2000		
	Rates	Fringes
KITTTITAS COUNTY		
COMMUNICATION & SOUND TECHNICIANS	19.00	4.80

SCOPE OF WORK

The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems

- SCADA (Supervisory control/data acquisition)
- PCM (Pulse code modulation)
- Inventory control systems
- Digital data systems

- Broadband & baseband and carriers
- Point of sale systems
- VSAT data systems
- Data communication systems
- RF and remote control systems
- Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems

- Background-Foreground Music
- Intercom and Telephone Interconnect Systems
- Sound and Musical Entertainment Systems
- Nurse Call Systems
- Radio Page Systems
- School Intercom and Sound Systems
- Burglar Alarm Systems
- Low-Voltage Master Clock Systems
- Multi-Media/Multiplex Systems
- Telephone Systems
- RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems

- Television Monitoring and Surveillance Systems
- Video Security Systems
- Video Entertainment Systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Video Educational Systems
 Microwave Transmission Systems
 CATV and CCTV

- E. Security Systems
 - Perimeter Security Systems
 - Vibration Sensor Systems
 - Sonar/Infrared Monitoring Equipment
 - Access Control Systems
 - Card Access Systems

*Fire Alarm Systems

- 1. Fire Alarms-In Raceways
 - a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
 - b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.
- 2. Fire Alarms-Open Wire Systems
 - a. Open wire systems installed by the technician.

ELEC0191A	12/01/2000		
		Rates	Fringes
CHELAN COUNTY			
ELECTRICIANS		25.66	3%+7.53
CABLE SPLICERS		28.23	3%+7.53

ELEC0191E	06/01/1999		
		Rates	Fringes
CHELAN AND SNOHOMISH COUNTIES			
SOUND AND COMMUNICATIONS			
TECHNICIANS		18.96	4.27

SCOPE OF WORK

The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

- A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems
 - SCADA (Supervisory control/data acquisition)
 - PCM (Pulse code modulation)
 - Inventory control systems
 - Digital data systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Broadband & baseband and carriers
 Point of sale systems
 VSAT data systems
 Data communication systems
 RF and remote control systems
 Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems

Background-Foreground Music
 Intercom and Telephone Interconnect Systems
 Sound and Musical Entertainment Systems
 Nurse Call Systems
 Radio Page Systems
 School Intercom and Sound Systems
 Burglar Alarm Systems
 Low-Voltage Master Clock Systems
 Multi-Media/Multiplex Systems
 Telephone Systems
 RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems

Television Monitoring and Surveillance Systems
 Video Security Systems
 Video Entertainment Systems
 Video Educational Systems
 Microwave Transmission Systems
 CATV and CCTV

E. Security Systems

Perimeter Security Systems
 Vibration Sensor Systems
 Sonar/Infrared Monitoring Equipment
 Access Control Systems
 Card Access Systems

*Fire Alarm Systems

1. Fire Alarms-In Raceways
 - a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
 - b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.
2. Fire Alarms-Open Wire Systems
 - a. Open wire systems installed by the technician.

 ELEC0191L 08/31/2000

	Rates	Fringes
SNOHOMISH COUNTY		
ELECTRICIANS	28.21	3%+7.23
CABLE SPLICERS	31.03	3%+7.23

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* ELEV0019B 07/01/2001

	Rates	Fringes
CHELAN, CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, KITTITAS, LEWIS, MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES		

ELEVATOR MECHANICS	31.675	7.295+a
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FOOTNOTE a: Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

ELEV0023B 04/01/2001

	Rates	Fringes
PACIFIC COUNTY		

ELEVATOR MECHANIC	31.845	7.195+a
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FOOTNOTE a: Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day, and New Years Day.

ENGI0302B 06/01/2001

	Rates	Fringes
CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, KITTITAS, MASON AND SNOHOMISH COUNTIES		

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 95% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

POWER EQUIPMENT OPERATORS:

Zone 1 (0-25 radius miles):

GROUP 1AAA	29.61	8.38
GROUP 1AA	29.11	8.38
GROUP 1A	28.61	8.38
GROUP 1	28.11	8.38
GROUP 2	27.67	8.38
GROUP 3	27.31	8.38
GROUP 4	25.21	8.38

Zone Differential (Add to Zone 1 rates):

Zone 2 (26-45 radius miles) - \$.70

Zone 3 (Over 45 radius miles) - \$1.00

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons, or 300 ft of boom (including jib with attachments)

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 1AA - Cranes 200 to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader-overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self propelled 45 yards and over; Slipform pavers; Transporters, all truck or track type

GROUP 2 - Barrier machine (zipper); Batch Plant Operaor-Concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-overhead, bridge type-20 tons through 44 tons; Chipper; Concrete Pump-truck mount with boom attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator,

shovel, backhoe-3 yards and under; Finishing Machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders-overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill, roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrade trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blaw knox-roadtec; Truck crane oiler/driver-100 tons and over; Truck Mount portable conveyor; Yo Yo Pay dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; A-frame crane over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loader-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler-asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrpers-concrete and carry-all; Service engineer-equipment; Trenching machines; Truck Crane Oiler/Driver under 100 tons; Tractors, backhoe 75 hp and under

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete finish mahine-laser screed; Cranes-A frame-10 tons and under; Elevator and Manlift-permanent or shaft type;

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Gradechecker, Stakehop; Forklifts under 3000 lbs. with attachments; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger, mechanical; Power plant; Pumps, water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and bridges whose total value is less than \$1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than \$1 million where no building is involved. Surfacing and paving included, but utilities excluded.
3. Marine projects (docks, wharfs, etc.) less than \$150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not

outfitted with protective clothing

H-2 Class "C" Suit - Base wage rate plus \$.25 per hour.

H-3 Class "B" Suit - Base wage rate plus \$.50 per hour.

H-4 Class "A" Suit - Base wage rate plus \$.75 per hour.

 ENGI0370I 06/01/2000

	Rates	Fringes
CHELAN (EAST OF THE 120TH MERIDIAN) COUNTY		

ZONE 1:

POWER EQUIPMENT OPERATORS:

GROUP 1A	20.18	5.77
GROUP 1	20.74	5.77
GROUP 2	21.06	5.77
GROUP 3	21.67	5.77
GROUP 4	21.83	5.77
GROUP 5	21.99	5.77
GROUP 6	22.27	5.77
GROUP 7	22.54	5.77
GROUP 8	23.64	5.77

ZONE DIFFERENTIAL (Add to Zone 1 rate): Zone 2 - \$2.00

Zone 1: Within 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho

Zone 2: Outside 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1A: Boat Operator; Crush Feeder; Oiler; Steam Cleaner

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Drillers Helper (assist driller in making drill rod connections, service drill engine and air compressor, repair drill rig and drill tools; drive drill support truck to and on the job site, remove drill cuttings from around bore hole and inspect drill rig while in operation); Fireman & Heat Tender; Grade Checker; Hydro-seeder, Mulcher, Nozzleman; Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog; Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber Stacker, hydra-lift & similar; Gin Trucks

(pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled); Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat; Boring Machine (earth); Boring Machine (rock under 8" bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginaw or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumor, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Tractor (to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pump-crete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond)(Operate drilling machine, drive or transport drill rig to and on job site and weld well casing);

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Equipment Serviceman, Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Planer Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8" bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe and Hoe Ram (under 3/4 yd.); Carrydeck & boom truck (under 25 tons); Cranes (25 tons & under), all attachments including clamshell, dragline; Derricks & Stifflegs (under 65 tons); Drilling Equipment (8" bit & over) (Robbins, reverse circulation & similar)(operates drill machine, drive or transport drill rig to and on job site and weld well casing); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operator(self-propelled); Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar)

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers) (Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (Motor Patrol & Attachments, Athey & Huber); Boom Cats (side); Cableway Controller (dispatcher); Clamshell Operator (under 3 yds.); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver; Cranes (over 25 tons including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Draglines (under 3 yds.); Drill Doctor; H.D.Mechanic; H.D. Welder; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.), Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Roller (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all rubber-tired; Screed Operator; Shovel (under 3 yds.); Tractors (D-6 & equivalent & over); Trenching Machines (7 ft. depth & over); Tug Boat Operator; Vactor Guzzler, super sucker

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds. & over); Blade (finish & bluetop), Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Clamshell Operator (3 yds. & over); Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragline; Derricks & Stifflegs (65 tons & over); Draglines (3 yds. & over); Elevating Belt (Holland type); Heavy Equipment Robotics Operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Ultra High Pressure Waterjet Cutting Tool System Operator (30,000 psi); Vacuum Blasting Machine Operator; Whirleys & Hammerheads, ALL

GROUP 8: Cranes (85 tons and over, and all climbing, overhead, rail and tower); Loaders (overhead and front-end, 10 yards and

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over); Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower)

180' to 250' \$.30 over scale

Over 250' \$.60 over scale

NOTE: In computing the length of the boom on Tower Cranes, they shall be measured from the base of the tower to the point of the boom.

HAZMAT: Anyone working on HAZMAT jobs, working with supplied air shall receive \$1.00 an hour above classification.

* ENGI0612B 06/01/2001

Rates Fringes
LEWIS, PIERCE, PACIFIC (portion lying north of a parallel line extending west from the northern boundary of Wahkaikum County to the sea) AND THURSTON COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

POWER EQUIPMENT OPERATORS:

Zone 1 (0-25 radius miles):

GROUP 1AAA	29.16	8.38
GROUP 1AA	29.11	8.38
GROUP 1A	28.61	8.38
GROUP 1	28.11	8.38
GROUP 2	27.67	8.38
GROUP 3	27.31	8.38
GROUP 4	25.21	8.38

Zone Differential (Add to Zone 1 rates):

Zone 2 (26-45 radius miles) = \$.70

Zone 3 (Over 45 radius miles) - \$1.00

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge

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type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader-overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self-propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox-Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler-asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and bridges whose total value is less than \$1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than \$1 million where no building is involved. Surfacing and paving included, but utilities excluded.

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3. Marine projects (docks, wharfs, etc.) less than \$150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing

H-2 Class "C" Suit - Base wage rate plus \$.25 per hour.

H-3 Class "B" Suit - Base wage rate plus \$.50 per hour.

H-4 Class "A" Suit - Base wage rate plus \$.75 per hour.

 ENGI0701H 01/01/2001

	Rates	Fringes
CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHAKIAKUM COUNTIES		

POWER EQUIPMENT OPERATORS (See Footnote A)

ZONE 1:

GROUP 1	28.21	8.20
GROUP 1A	29.62	8.20
GROUP 1B	31.03	8.20
GROUP 2	27.03	8.20
GROUP 3	26.31	8.20
GROUP 4	25.82	8.20
GROUP 5	25.25	8.20
GROUP 6	23.01	8.20

Zone Differential (add to Zone 1 rates):

Zone 2 - \$1.50

Zone 3 - 3.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK; AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or projects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive

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Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS
PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective
city hall of the above mentioned cities shall receive Zone I pay
for all classifications.

All jobs or projects located more than 30 miles and less than 50
miles from the respective city hall of the above mentioned cities
shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the
respective city hall of the above mentioned cities shall receive
Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three
units or more; CRANE: Helicopter Operator, when used in erecting
work; Whirley Operator, 90 ton and over; LATTICE BOOM CRANE:
Operator 200 tons through 299 tons, and/or over 200 feet boom;
HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199
tons with luffing or tower attachments; FLOATING EQUIPMENT:
Floating Crane, 150 ton but less than 250 ton

GROUP 1A: CRANE: Hydraulic Operator, 200 tons and over (with
luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200
tons through 299 tons, with over 200 feet boom; FLOATING
EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons
with over 200 feet boom; Operator 400 tons and over; FLOATING
EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill,
pavement profiler, operator, 6 foot lateral cut and over;
BLADE: Auto Grader or "Trimmer" (Grade Checker required);
Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over
120,000 lbs and above; Bulldozer operator, twin engine;
Bulldozer Operator, tandem, quadnine, D10, D11, and similar type);
Bulldozere Robotic Equipment (any type; CONCRETE: Batch Plant
and/or Wet Mix Operator, one and two drum; Automatic Concrete
Slip Form Paver Operator; Concrete Canal Line Operator;
Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25
tons and over; HYDRAULIC CRANE: Hydraulic crane Operator 50 tons
through 89 tons (with luffing or tower attachment); hydraulic
crane operator 90 tons through 199 tons (with luffing or tower
attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator;
Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through
199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher
Plant Operator; FLOATING EQUIPMENT: Floating Clamshell,
etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge)
Operator, 30 tons but less than 150 tons; LOADERS: Loader
Operator, 6 cu. yds. but less than 12 cu. yds.; Loader Operator,
12 cu. yds. and over; Loader 120,000 lbs. and above;

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REMOTE CONTROL: Remote controlled earth-moving equipment (no one operator shall operate more than two pieces of earth-moving equipment at one time); RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, BACKHOE, SKOOPER OPERATOR: Shovel, etc., 3 cu. yds., but less than 5 cu. yds.; Shovel, etc., 5 cu. yds. and over; TRENCH MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler required); Wheel Excavator, over 750 cu. yds. per hour (two Operators and at least one Grade Oiler required); Band Wagon (in conjunction with wheel excavator); UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote or otherwise; HYDRAULIC HOES EXCAVATOR: Excavator over 130,000 lbs.

GROUP 3: LATTICE BOOM CRANES: Lattice Boom Crane-50 through 89 tons (and less than 150 feet boom); FORKLIFT: Rock Hound Operator; HYDRAULIC HOES EXCAVATOR: excavator over 80,000 lbs. through 130,000 lbs.; LOADERS: Loader operator 60,000 and less than 120,000; RUBBER-TIRED SCRAPERS: Scraper Operator, with tandem scrapers; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell operators 3 cu. yds. but less than 5 cu yds.; Self Loading, paddle wheel, auger type, finish and/or 2 or more units; BULLDOZERS: Bulldozer operator over 70,000 lbs. up to and including 120,000

GROUP 4: ASPHALT: Blade Operator; Blade Operator, finish; Screed Operator; Asphalt Paver Operator (Screed man required); Diesel-Electric engineer, Plant; Roto-Mill, pavement profiler, operator, under six foot lateral cut; BLADE: Blade Operator, externally controlled by electronic, mechanical hydraulic means; Blade operator, multi-engine; BULLDOZERS: Bulldozer Operator over 20,000 lbs and more than 100 horse up to 70,000 lbs; Drill Cat Operator; Side-boom Operator; Cable-Plow Operator (any type); CLEARING: Log Skidders; Chippers; Incinerator; Stump Splitter (loader mounted or similar type); Stump Grinder (loader mounted or similar type); Tub Grinder; Land Clearing Machine (Track mounted forestry mowing & Grinding machine); Hydro Axe (loader mounted or similar type); COMPACTORS SELF PROPELLED: Compactor Operator, with blade; Compactor Operator, multi-engine; Compactor Operator, robotic; CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete Cooling Machine Operator; Concrete Paving Road Mixer; Concrete Breaker; Reinforced Tank Banding Machine (K-17 or similar types); Laser Screed; CRANE: Chicago boom and similar types; Lift Slab Machine Operator; Boom type lifting device, 5 ton capacity or less; Hoist Operator, two (2) drum; Hoist Operator, three (3) or more drums; Derrick Operator, under 100 ton; Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over; Cableway Operator up to twenty (25) ton; Bridge Crane Operator, Locomotive, Gantry, Overhead; Cherry Picker or similar type crane hoist five (5) ton capacity or less; Hydraulic Crane Operator, under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom Crane Operator, under 50 tons; CRUSHER: Generator Operator; Diesel-Electric Engineer; Grizzley Operator; DRILLING: Drill Doctor; Boring Machine Operator; Driller-Perussion, Diamond, Core, Cable, Rotary and similar type; Cat Drill (John Henry); Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Diesel-electric

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Engineer; Jack Operator, elevating barges, Barge Operator, self-unloading; Piledriver Operator (not crane type) (Deckhand required); Floating Clamshell, etc. Operator, under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type to yp to including 20,000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less than 60,000 lbs; Elevating Grader Operator by Tractor operator, Sierra, Euclid or similar types; PILEDRIVERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER

WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning Decontamination Machine Operator; Ultra High Pressure Water Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Flating Floating; Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; H.D. Welder; Machine Tool Operator; Combination H.D. Mechanic-Welder, when dispatched and/or when required to do both; Welder-Certified, when dispatched and/or required; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push-pull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, BACKHOE, SKOOPER OPERATOR: Diesel Electric Engineer; Stationay Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cy yds.; Grade-all Operator; Shovel, Dragline, Clamshell, Operator 3 cu yds, but less than 5 cu yds.

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type), 84; Roto-Mill, pavement profiler, ground man BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less; COMPRESSORS: Compressor Operator any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Beltcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and similar; Concrete Pump Operator; Grouting Machine Operator; Concrete mixer operator, single drum, under five (5) bag capacity; Concrete Mixer Operator, single drum, under 5 bag capacity and over; Cast place pipe laying machine; Maginnis Internal Full Slab Vibrator Operator; Concrete Finishing machine Operator, Clary, Johnson, Bidwell, Burgess

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bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms; Slip Form Pumps, power driven hydraulic lighting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churn Drill and Earth Boring Machine Operator; Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Fireman; FORKLIFT: Lull Hi-Lift Operator or similar type; Fork Lift, over 5 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type); Hydraulic Backhoe Operator track type up to and including WHEEL 20,000 lbs.; LOADERS: Loaders, rubber-tired type, less than 25,000 lbs; Elevating Grader Operator, Tractor Towed requiring Operator or Grader; OILERS: Service Oiler (Greaser); PIPELINE, SEWER WATER: Hydraulic Pipe Press Operator; Hydra Hammer or similar types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over

GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feeder; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT: Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (exclduing working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS: Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler-Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; PIPELINE SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman; Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman

FOOTNOTE A: HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a

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federally designated hazardous perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outline in the specific hazardous waste project site safety plan.

H 1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing.

H 2 Class "C" Suit Basic hourly wage rate plus \$1.00 per hour, fringes plus \$0.15.

H 3 Class "B" Suit Basic hourly wage rate plus \$1.50 per hour, fringes plus \$0.15

H 4 Class "A" Suite Basic hourly wage rate plus \$2.00

\
 \ per hour, fringes plus \$0.15

* IRON0086A 07/01/2001

	Rates	Fringes
IRONWORKERS	25.82	11.35

LABO0001I 06/01/2001

	Rates	Fringes
CHELAN AND KITTITAS COUNTIES		

LABORERS:

ZONE 1:

GROUP 1	14.46	5.80
GROUP 2	16.78	5.80
GROUP 3	18.50	5.80
GROUP 4	18.98	5.80
GROUP 5	19.34	5.80

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):

ZONE 2 - \$.70

ZONE 3 - \$1.00

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE,
 AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall

ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall

ZONE 3 - More than 45 radius miles from the respective city hall

CALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary of Wahkiakum County west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES

LABORERS:

ZONE 1:

GROUP 1	16.92	5.80
GROUP 2	19.24	5.80
GROUP 3	23.92	5.80
GROUP 4	24.40	5.80
GROUP 5	24.76	5.80

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ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):

ZONE 2 - \$.70

ZONE 3 - \$1.00

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT,
SEATTLE, KENT, TACOMA, OLYMPIA,
CENTRALIA, ABERDEEN, SHELTON, PT.
TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city
Hall

ZONE 2 - More than 25 but less than 45 radius miles from the
respective city hall

ZONE 3 - More than 45 radius miles from the respective city hall

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window
Washer/Cleaner (detail clean-up, such as but not limited to
cleaning floors, ceilings, walls, windows, etc., prior to final
acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer;
Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating
Screed; Asbestos Abatement Laborer; Ballast Regulator Machine;
Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement
Finisher Tender; Change House or Dry Shack; Chipping Gun (under
30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete
Form Stripper; Curing Laborer; Demolition (wrecking and moving
including charred material); Ditch Digger; Dump Person; Fine
Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout
Machine Tender; Grinders; Guardrail Erector; Hazardous Waste
Worker (Level C); Maintenance Person; Material Yard Person; Pot
Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer;
Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job
site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.);
Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete
Saw Operator; Drill Operator (hydraulic, diamond, aiartrac);
Faller and Bucker Chain Saw; Grade Checker and Transit Person;
Groutmen (pressure) including post tension beams; Hazardous Waste
Worker (Level B); High Scaler; Jackhammer; Laserbeam Operator;
Manhole Builder-Mudman; Mortarman and Hodcarrier; Nozzleman
(concrete pump, green cutter when using combination of high
pressure air and water on concrete and rock, sandblast, gunite,
shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe
Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert
type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power;
Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20'); Spreader
(concrete); Tamper and Similar electric, air and glas operated
tool; Timber Person-sewer (lagger shorer and cribber);

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Powderman; Re-Timberman;
Hazardous Waste Worker (Level A).

LABO0238I	06/01/2000		
		Rates	Fringes
CHELAN COUNTY			
HOD CARRIERS		20.79	4.76

LABO0335C	06/01/2001		
		Rates	Fringes
PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean)			
COUNTY			
ZONE 1:			
LABORERS:			
GROUP 1		22.27	6.75
GROUP 2		22.77	6.75
GROUP 3		23.15	6.75
GROUP 4		23.47	6.75
GROUP 5		20.12	6.75
GROUP 6		18.06	6.75
GROUP 7		15.36	6.75

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing-concrete; Demolition, Wrecking, and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Guard Rail, Median Rail, Reference Post, Guide Post, Right-of-way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or similar types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Laborer; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man-Crusher (aggregate when used)

GROUP 2: Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean up-nozzleman-Green cutter (concrete, rock, etc.); Concrete Laborer; Concrete Power Buggyman; Crusher Feeder; Demolition and

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Wrecking Charred Materials; Gunitite Nozzleman Tender; Gunitite or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Pipe Doping & Wrapping; Tool Operators (includes but not limited to: Dry pack machine, Jackhammer, Chipping guns, Paving breakers); Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bull gang (Underground)

GROUP 3: Asbestos Removal (structural removal only); Bit Grinder; Drill Doctor; Drill Operators, air tracks cat drills, wagon drills, rubber-mounted drills, and other similar types; Concrete Saw Operator; Gunitite Nozzleman; High scalers, strippers and drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (dry); Sewer Timberman; Track Liners; Anchor Machines; Ballast Regulators; Multiple Tampers; Power Jacks; Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timberman; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (Tunnel) applicable when assigned to move, set up, align laser beam; Miner-Tunnel; Motorman-dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping and Planting Laborers

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):

ZONE 2 - \$0.65
ZONE 3 - 1.15
ZONE 4 - 1.70
ZONE 5 - 2.75

ZONE DEFINITIONS

BASE POINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.

ZONE 5: More than 80 miles from the respective city hall.

PAIN0005A 03/01/2000

Rates

Fringes

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS,
MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES

PAINTERS	22.94	3.73
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PAIN0005C 06/10/2000

	Rates	Fringes
CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES		

DRYWALL FINSIHERS	25.50	7.82
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PAIN0005H 07/01/2000

	Rates	Fringes
CHELAN AND KITTITAS COUNTIES		

PAINTERS:

BRUSH, PAPERHANGER,
STEAM-CLEANING, STRIPING and
SPRAY

19.00	3.67
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TV, RADIO, ELECTRICAL
TRANSMISSION TOWERS

20.75	3.67
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PAIN0054G 09/01/1999

	Rates	Fringes
CHELAN AND KITTITAS COUNTIES		

GLAZIERS	16.32	3.17
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PAIN0054I 06/01/1999

	Rates	Fringes
CHELAN AND KITTITAS COUNTIES		

DRYWALL FINISHER (TAPER)	19.98	4.25
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PAIN0055M 01/01/2000

	Rates	Fringes
PACIFIC COUNTY		

DRYWALL FINSIHERS	24.00	7.60
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PAIN0055N 11/01/1999

	Rates	Fringes
PACIFIC COUNTY		

PAINTERS:

Brush & Roller
Spray and Sandblasting
High work - All work
60 ft. or higher

17.10	3.48
17.70	3.48
17.60	3.48

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

* PAIN0188A 07/01/2001

Rates Fringes
 CLALLAM, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SNOHOMISH
 AND THURSTON COUNTIES

GLAZIERS 28.73 6.48

* PAIN0188B 07/01/2001

Rates Fringes
 GRAYS HARBOR AND PACIFIC COUNTIES

GLAZIERS 14.58 4.69

PAIN1238A 06/01/2001

Rates Fringes
 CALLAM, GRAYS HARBOR, JEFFERSON, LEWIS, MASON, PACIFIC (NORTHERN
 PORTION), PIERCE AND THURSTON COUNTIES

SOFT FLOOR LAYERS 21.77 6.63

PAIN1238D 06/01/2001

Rates Fringes
 KING, KITSAP AND SNOHOMISH COUNTIES

SOFT FLOOR LAYERS 23.69 6.91

PLAS0072C 06/01/1999

Rates Fringes
 CHELAN AND KITTITAS COUNTIES

Zone 1:
 CEMENT MASONS 20.75 5.24

Zone Differential (Add to Zone 1
 rates): Zone 2 - \$2.00

BASE POINTS: Spokane, Pasco, Moses Lake, and Lewiston

Zone 1: 0 - 45 radius miles from the main post office
 Zone 2: 45 radius miles from the main post office

PLAS0082D 06/01/1999

Rates Fringes
 PACIFIC (South of a straight line made by extending the north
 boundary line of Wahkiakum County west to the Pacific
 Ocean) COUNTY

PLASTERERS 23.91 6.36

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

PLAS0528B 06/01/2001

	Rates	Fringes
CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum Count, west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES		

CEMENT MASONS	26.34	8.99
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PLUM0032A 06/01/1999

	Rates	Fringes
CHELAN AND KITTITAS (NORTHERN TIP) COUNTIES		

PLUMBERS AND PIPEFITTERS	23.47	8.67
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PLUM0032B 06/01/2001

	Rates	Fringes
CLALLAM, KING AND JEFFERSON COUNTIES		

PLUMBERS AND PIPEFITTERS	31.38	11.23
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PLUM0082D 06/01/2001

	Rates	Fringes
GRAYS HARBOR, LEWIS, MASON (EXCLUDING NE SECTION), PACIFIC, PIERCE AND THURSTON COUNTIES		

PLUMBERS AND PIPEFITTERS	24.57	14.72
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* PLUM0265A 06/01/2001

	Rates	Fringes
SNOHOMISH COUNTY		

PLUMBERS AND PIPEFITTERS:	28.37	10.24
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PLUM0598B 06/01/2001

	Rates	Fringes
KITTITAS (ALL BUT NORTHERN TIP)		

PLUMBERS AND PIPEFITTERS	28.85	11.55
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PLUM0631A 06/01/2001

	Rates	Fringes
MASON (NE SECTION), AND KITSAP COUNTIES		

PLUMBERS/PIPEFITTERS:
All new construction, additions,
and remodeling of commercial
building projects such as:
cocktail lounges and taverns,
professional buildings, medical

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON,
PACIFIC, PIERCE, SNOHOMISH AND THURSTON COUNTIES

SHEET METAL WORKERS	30.26	9.14
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SHEE0066M 06/01/2000		
	Rates	Fringes
KITTITAS COUNTY		
SHEET METAL WORKERS	25.43	7.30

TEAM0174B 06/01/1999		
	Rates	Fringes
CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES		

TRUCK DRIVERS:

GROUP 1:	23.05	8.21
GROUP 2:	22.47	8.21
GROUP 3:	20.43	8.21
GROUP 4:	16.68	8.21
GROUP 5:	22.22	8.21

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - "A-frame or Hydralift" trucks and Boom trucks or similar equipment when "A" frame or "Hydralift" and Boom truck or similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Tournotrailer, Cat DW series, Terra Cobra, Le Tourneau, Westinghouse, Athye Wagon, Eucid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards \$.15 per hour additional for each 10 yard increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site; Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghous, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material, Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed: (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor, Slurry

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small rubber-tired (when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch truck; Wrecker, tow truck and similar equipment

GROUP 3 - Flatbed: single rear axle; Pickup sweeper, Pickup Truck (Adjust upward by \$2.00 per hour for onsite work)

GROUP 4 - Escort or pilot driver

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:

LEVEL C: +\$.25 per hour - This level uses an air purifying respirator or additional protective clothing.

LEVEL B: +\$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."

LEVEL A: +\$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

ZONE DIFFERENTIAL

Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM	CENTRALIA	RAYMOND	OLYMPIA
EVERETT	SHELTON	ANACORTES	BELLEVUE
SEATTLE	PORT ANGELES	MT. VERNON	KENT
TACOMA	PORT TOWNSEND	ABERDEEN	BREMERTON

Zone A - 0 - 25 miles - Free Zone
 Zone B - 25 - 45 miles - \$.70 per hour
 Zone C - Over 45 miles - \$1.00 per hour

TEAM0760F 06/01/2000

	Rates	Fringes
CHELAN AND KITTITAS COUNTIES		

(ANYONE WORKING ON HAZMAT JOBS SEE FOOTNOTE A BELOW)

TRUCK DRIVERS:

GROUP 1	19.33	7.50
GROUP 2	21.97	7.50
GROUP 3	22.08	7.50
GROUP 4	22.41	7.50
GROUP 5	22.52	7.50
GROUP 6	22.68	7.50
GROUP 7	23.22	7.50

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

GROUP 8

23.64

7.50

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Escort Driver or Pilot Car; Employee Haul; Power Boat Hauling Employees or Material

GROUP 2: Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and under); Trailer Mounted Hydro Seeder and Mulcher; Leverperson (loading trucks at bunkers); Seeder & Mulcher; Stationary Fuel Operator; Tractor (small, rubber-tired, pulling trailer or similar equipment)

GROUP 3: Auto Crane (2000 lbs. capacity); Buggy Mobile & Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. & under); Flat Bed Truck with Hydraulic System; Fork Lift (3001-16,000 lbs.); Fuel Truck Driver; Steamcleaner & Washer; Power Operated Sweeper; Rubber-tired Tunnel Jumbo; Scissors Truck; Slurry Truck Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom and articulated end dump (3 yards to and including 6 yds.); Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

GROUP 4: A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom and articulated end dump (over 6 yds. to & including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8000 gallons)

GROUP 5: Dumpster (over 6 yds.); Lowboy (50 tons & under); Self-Loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds. to and including 10 yds.); Trucks, side, end, bottom and articulated end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled)(up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Lowboy (over 50 tons); Mechanic (Field); Transfer Truck and Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DW's & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater; Water Tank Truck (8,001-14,000 gallons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable operated trailer); Transit Mixers & Hauling Concrete (over 20 yds.); Truck, side, end, bottom and articulated end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons)

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Footnote A- Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:

LEVEL D: - \$.25 PER HOUR (This is the lowest level of protection.

No respirator is used and skin protection is minimal.

LEVEL C: - \$.50 PER HOUR (This level uses an air purifying respirator or additional protective clothing.

LEVEL B: - \$.75 PER HOUR (Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."

LEVEL A: - \$1.00 PER HOUR (this level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013
GENERAL DECISION WA010013 07/06/2001 WA13

Date: July 6, 2001
General Decision Number **WA010013**

Superseded General Decision No. WA000013

State: **Washington**

Construction Type:
BUILDING

County(ies):
YAKIMA

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/02/2001
1	04/20/2001
2	06/01/2001
3	07/06/2001

COUNTY(ies):
YAKIMA

ELEC0112J 06/01/2000

	Rates	Fringes
COMMUNICATIONS & SYSTEMS TECHNICIAN	19.00	4.80

SCOPE OF WORK

The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems

- SCADA (Supervisory control/data acquisition)
- PCM (Pulse code modulation)
- Inventory control systems
- Digital data systems
- Broadband & baseband and carriers
- Point of sale systems
- VSAT data systems
- Data communication systems

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

RF and remote control systems
 Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems

Background-Foreground Music
 Intercom and Telephone Interconnect Systems
 Sound and Musical Entertainment Systems
 Nurse Call Systems
 Radio Page Systems
 School Intercom and Sound Systems
 Burglar Alarm Systems
 Low-Voltage Master Clock Systems
 Multi-Media/Multiplex Systems
 Telephone Systems
 RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems

Television Monitoring and Surveillance Systems
 Video Security Systems
 Video Entertainment Systems
 Video Educational Systems
 Microwave Transmission Systems
 CATV and CCTV

E. Security Systems

Perimeter Security Systems
 Vibration Sensor Systems
 Sonar/Infrared Monitoring Equipment
 Access Control Systems
 Card Access Systems

*Fire Alarm Systems

1. Fire Alarms-In Raceways
 - a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
 - b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.
2. Fire Alarms-Open Wire Systems
 - a. Open wire systems installed by the technician.

 ELEC0112M 12/01/2000

	Rates	Fringes
ELECTRICIANS	27.75	3%+6.93
CABLE SPLICERS	29.14	3%+6.93

PLAS0072D 06/01/1999

	Rates	Fringes
ZONE 1:		
CEMENT MASONS	20.75	5.24

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Zone Differential (Add to Zone 1 rate): Zone 2: \$2.00

BASE POINTS: Spokane, Pasco, Moses Lake, Lewiston

Zone 1: 0 - 45 radius miles from the main post office
 Zone 2: Over 45 radius miles from the main post office

PLUM0598C 06/01/2001		
	Rates	Fringes
PLUMBERS AND STEAMFITTERS	28.85	11.55

* ROOF0189D 07/01/2001		
	Rates	Fringes
ROOFERS (Excluding waterproofing)	17.48	5.60

SHEE0066C 06/01/2000		
	Rates	Fringes
SHEET METAL WORKERS (Excluding structural iron work on metal building)	25.43	7.30

SUWA1001A 02/08/1990		
	Rates	Fringes
BRICKLAYERS	17.99	3.73
CARPENTERS	12.24	3.20
LABORERS	9.15	
PAINTERS	14.03	2.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

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ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

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U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

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END OF GENERAL DECISION

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

IRONWORKERS:

Structural, Reinforcing & Pre-Engineered Metal Bldg Erector	23.30	9.86
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PLAS0599G 06/01/2000	Rates	Fringes
CEMENT MASONS	20.25	8.50

PLUM0434F 06/01/2000	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC Work)	24.50	7.98

SFWI0669B 01/01/2001	Rates	Fringes
SPRINKLER FITTERS	27.04	6.00

SHEE1018A 06/01/2000	Rates	Fringes
SHEET METAL WORKERS (Including HVAC Work)	19.23	3%+7.62

SUWI1001A 07/15/1999	Rates	Fringes
CARPENTERS (Excluding Drywall Hanging Form Work, and Acoustical)	18.27	5.59

LABORERS: Unskilled	15.87	4.97
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PAINTERS: Brush & Roller	20.33	
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ROOFERS	15.21	
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POWER EQUIPMENT OPERATORS: Backhoe	17.98	5.79
Front-end Loader	21.47	7.60

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
14.3%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Alabama County of Calhoun.

(Fort Rucker, AL)

Montgomery, AL

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
29.9%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Barbour, Bullock, Butler, Coffee, Coosa, Covington, Crenshaw, Dale, Dallas, Geneva, Henry, Houston, Lowndes, Macon, Perry, Pike, and Tallapoosa, Alabama.

(Redstone Arsenal, AL)

Huntsville, AL

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
12.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Limestone, Madison, and Marshall, Alabama.

(Fort Richardson, AL)

Anchorage, AK SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
8.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: Anchorage, Alaska.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
15.1%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: Aleutian Islands Division, Angoon Division, Borrow-North Slope Division, Bethel Division, Bristol Bay Borough, Bristol Bay Division, Cordova McCarthy Division, Fairbanks Division, Haines Division, Juneau Division, Kenai-Cook Inlet Division, Ketchikan Division, Kobuk Division, Kodiak Division, Kwskokwim Division, Matanuska-Susitna Division, Nome Division, Outer Ketchikan Division, Prince of Wales Division, Seward Division, Sitka Division, Skagaway-Yakutat Division, Southeast Fairbanks Division, Upper Yukon Division, Valdez-Citina-Whittier Division, Wade Hampton Division, Wrangell-Petersburg Division, and Yukon-Koyukuk Division, Alaska.

(Fort Huachuca, AZ)
Area

Tuscon, AZ ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
27.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Cochise, Graham, Greenlee, and Santa Cruz, Arizona.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
19.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Apache, Coconino, Gila, Mohave, Navajo, Pinal, Yavapai, and Yuma, Arizona.

**(Fort Irwin, CA)
Area**

Los Angeles, CA SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
19.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Riverside and San Bernardino, California.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
28.9%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the County of Monterey, California.

(Sierra Army Depot, CA)

Redding, CA ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
6.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Lassen, Modoc, Plumas, Shasta, Siskiyou, and Tehama, California.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
10.9%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of El Paso and Teller, Colorado.

(Fort McNair – Walter Reed Army Medical Center, Washington, D.C.)

Washington D.C. SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
28.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Charles, Prince George and Montgomery, Maryland, the Counties of Arlington, Fairfax, Loudoun, Prince William, Alexandria, Fairfax City and Falls Church, Virginia, and the District of Columbia.

(Camp James E. Rudder, Eglin Air Force Base, FL)

Pensacola-Panama City, FL SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
18.3%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Escambia and Santa Rosa, Florida.

(Camp James E. Rudder, Eglin Air Force Base, FL)

Pensacola-Panama City, FL ECO

Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
15.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Gulf, Holmes, Okaloosa, Walton, and Washington, Florida.

(Camp Frank D. Merrill, GA)

Atlanta, GA ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
19.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Banks, Barrow, Bartow, Carroll, Clarke, Coweta, Dawson, Elbert, Fannin, Floyd, Franklin, Gilmer, Gordon, Greene, Habersham, Hall, Haralson, Hart, Heard, Jackson, Jasper, Lamar, Lumpkin, Madison, Morgan, Oconee, Oglethorpe, Pickens, Pike, Polk, Rabun, Spalding, Stephens, Towns, Union, Upson, and White, Georgia.

(Fort Benning, AL/GA)

Columbus, GA SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
29.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Alabama County of Russell, and the Counties of Chattahoochee and Columbus, Georgia.

(Fort Gordon, GA)
Area

Augusta, GA SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
27.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Columbia and Richmond, Georgia and the County of Aiken, South Carolina.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
32.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Burke, Emanuel, Glascock, Jefferson, Jenkins, Lincoln, McDuffie, Taliaferro, Warren, and Wilkes, Georgia and the Counties of Allendale, Barnberg, Barnwell, Edgefield, and McCormick, South Carolina.

(Fort McPherson, GA)
Area

Atlanta, GA SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
21.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Butts, Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Forsyth, Fulton, Winnett, Henry, Newton, Paulding, Rockdale, and Walton, Georgia.

(Fort Stewart, GA)

Savannah, GA

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
30.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Bryan, Chatham, and Effingham, Georgia.

(Fort Stewart, GA)

Savannah, GA

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
29.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Appling, Atkinson, Bacon, Bulloch, Candler, Coffee, Evans, Jeff Davis, Liberty, Long, McIntosh, Montgomery, Screven, Tattnall, Toombs, and Wayne, Georgia and the Counties of Beaufort, Hampton, and Jasper, South Carolina.

(Hunter Army Airfield, GA)

Savannah, GA

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
30.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Bryan, Chatham, and Effingham, Georgia.

(Tripler Army Medical Center – Fort Shafter – Fort Kamehameha, Schofield Barracks, HI)

Honolulu, HI SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
69.1%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the County of Honolulu, Hawaii.

(Kilauea Military Reservation – Pohakuloa Training Area, HI)

Honolulu, HI ECO

Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
70.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Hawaii, Kauai, Maui, and Kalowao, Hawaii.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
14.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Clinton, Madison, Monroe, and St. Clair, Illinois and the Counties of Franklin, Jefferson, St. Charles, St. Louis, and St. Louis City, Missouri.

**(Rock Island Arsenal, IL)
Area**

Davenport Rock Island Moline, IA-IL SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
4.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Henry and Rock Island, Illinois, and Scott, Idaho.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
3.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Carroll, Hancock, Henderson, Mercer, and Whiteside, Illinois, and Clinton, Des Moines, Henry, Lee, Louisa, Muscatine, and Clark, Idaho.

(Fort Leavenworth, KS)
Area

Kansas City, MO ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
10.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Anderson, Atchison, Brown, Doniphan, Franklin, Leavenworth, Linn, and Miami, Illinois and the Counties of Atchison, Bates, Benton, Caldwell, Carroll, Clinton, Daviss, Dekalb, Gentry, Grundy, Harrison, Henry, Holt, Johnson, Lafayette, Livingston, Mercer, Nodaway, Pettis, Saline, and Worth, Missouri.

(Fort Riley, KS)
Area

Topeka, KS ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
6.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Clay, Coffey, Geary, Jackson, Lyon, Marshall, Morris, Nemaha, Pottawatomie, Riley, Wabaunsee, and Washington, Kansas.

**(Blue Grass Ordnance Depot, KY)
AREA**

Lexington, KY ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
7.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Adair, Anderson, Bath, Boyle, Breathitt, Casey, Clay, Estill, Franklin, Garrard, Green, Harrison, Jackson, Knott, Lee, Leslie, Letcher, Lincoln, Madison, Magoffin, Menifee, Mercer, Montgomery, Morgan, Nicholas, Owsley, Perry, Powell, Pulaski, Rockcastle, Russell, Taylor, and Wolfe, Kentucky.

**(Fort Campbell, KY)
Area**

Nashville, TN SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
18.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the County of Christian, Kentucky and the County of Montgomery, Tennessee.

**(Fort Campbell, KY)
Area**

Nashville, TN ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
12.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Allen, Barren, Butler, Clinton, Cumberland, Edmonson, Logan, Metcalfe, Monroe, Simpson, Todd, Trigg, and Warren, Kentucky and the Counties of Bedford, Cannon, Clay, Coffee, DeKalb, Franklin, Giles, Hickman, Houston, Humphreys, Jackson, Lawrence, Lewis, Macon, Marshall, Maury, Moore, Overton, Perry, Pickett, Putnam, Smith, Stewart, Trousdale, Van Buren, Warren, Wayne, and White, Tennessee.

(Fort Knox, KY)
Area

Louisville, KY SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
11.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Clark and Floyd, Indiana, and the Kentucky Counties of Bullitt, Jefferson, and Oldham.

(Fort Knox, KY)
Area

Louisville, KY

ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
9.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Crawford, Harrison, Jefferson, Orange, Scott, and Washington, Indiana, and the Kentucky Counties of Breckinridge, Grayson, Hardin, Hart, Henry, Larue, Marion, Meade, Nelson, Shelby, Spencer, Trimble, and Washington.

(Fort Polk, LA)

Lake Charles, LA ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
17.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Parishes of Allen, Beauregard, Cameron, Jefferson Davis, and Vernon, Louisiana.

(Aberdeen Proving Ground – Edgewood Arsenal – Fort Meade, MD)

Baltimore, MD SMSA

Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
23.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Anne Arundel, Baltimore, Carroll, Harford, Howard, and Baltimore City, Maryland.

(Fort Detrick, MD)

Washington, D.C.-MD-VA ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
26.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Calvert, Frederick, St. Marys, Washington, Maryland, and the Virginia Counties of Clarke, Culpeper, Fauquier, Frederick, King George, Page, Rappahannock, Shenandoah, Spottsylvania, Stafford, Warren, Westmoreland, Fredericksburg, and Winchester, and the West Virginia Counties of Berkeley, Grant, Hampshire, Hardy, Jefferson, and Morgan.

(Detroit Arsenal – Selfridge Base, MI)

Detroit, MI SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade	Goals for female participation _____ for each trade
17.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne, Michigan.

(Fort Leonard Wood, MO)

Springfield, MO ECO AREA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
2.3%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Allen, Bourbon, Cherokee, Crawford, Labetta, Montgomery, Neosho, Witson, and Woodson, Kansas, and the Counties of Barry, Barton, Cedar, Dade, Dallas, Douglas, Hickory, Howell, Jasper, Laclede, Lawrence, McDonald, Newton, Oregon, Ozark, Polk, Pulaski, St. Clair, Shannon, Stone, Taney, Texas, Vernon, Webster, and Wright, Missouri, and the Counties of Craig and Ottawa, Oklahoma.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
12.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Counties of Johnson and Wayandotte, Kansas, and the Counties of Cass, Clay, Jackson, Platte, and Ray, Missouri.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
12.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Jersey County of Hudson.

(Fort Monmouth, NJ)

New York, NY

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
9.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Jersey County of Monmouth.

(Picatinny Arsenal, NJ)

New York, NY

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
17.3%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Jersey Counties of Essex, Morris, Somerset, and Union.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
17.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Jersey Counties of Hunterdon, Ocean, and Sussex, and the New York Counties of Orange, Sullivan, and Ulster, and the Pennsylvania County of Pike.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
17.3%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Jersey Counties of Burlington, Camden, and Gloucester, and the Pennsylvania Counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia.

(White Sands Missile Range, NM)

El Paso, TX

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
<u>49%</u>	<u>6.9%</u>

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Mexico Counties of Chaves, Dona Ana, Eddy, Grant, Hidalgo, Luna, Otero, and Sierra; and the Texas Counties of Brewster, Culberson, Hudspeth, Jeff Davis, and Presidio.

(White Sands Missile Range, NM)

Albuquerque, NM

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
<u>45.9%</u>	<u>6.9%</u>

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New Mexico Counties of Catron, Colfax, De Baca, Guadalupe, Lincoln, Los Alamos, McKinley, Mora, Rio Arriba, San Juan, San Miguel, Santa Fe, Socorro, Taos, Torrance, and Valencia.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
2.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New York Counties of Cayuga, Cortland, Franklin, Jefferson, Lewis, and St. Lawrence.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	
Electricians.....	9.0 to 10.2
Asbestos workers.....	22.8 to 28.0
Roofers.....	6.3 to 7.5
Cement masons.....	23.0 to 27.0
Plasterers.....	15.8 to 18.0
Boilermakers.....	13.0 to 15.5
Metal lathers.....	24.6 to 25.8
Operating engineers.....	25.6 to 26.0
Iron Workers (struct).....	25.9 to 32.0
All Others.....	16.4 to 17.5
Bricklayers.....	13.4 to 15.5
Carpenters.....	27.6 to 32.0
Iron workers (ornamental).....	22.4 to 23.0
Glaziers.....	16.0 to 20.0
Teamsters.....	22.0 to 22.5
Steam fitters.....	12.2 to 13.5
Painters.....	28.6 to 26.0
Plumbers.....	12.0 to 14.5
Elevator constructors.....	5.5 to 6.5

Goals for female participation
for each trade

6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-01-R-0013

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New York Counties of Bronx, Kings, New York, Queens, and Richmond.

(Seneca Army Depot, NY)

Rochester, NY

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
5.9%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New York Counties of Genesee, Seneca, and Yates.

**(Watervliet Arsenal, NY)
Area**

Albany – Schenectady - Troy, NY

SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
3.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New York Counties of Albany, Montgomery, Rensselaer, Saratoga, and Schenectady.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
17.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the New York Counties of Orange, Sullivan, and Ulster, the New Jersey Counties of Hunterdon, Ocean, and Sussex, and the Pennsylvania County of Pike.

(Fort Bragg, NC)
Area

Fayetteville, NC SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
26.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the North Carolina County of Cumberland.

(Fort Bragg, NC)

Fayetteville, NC ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
33.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the North Carolina Counties of Bladen, Hoke, Richmond, Robeson, Sampson, and Scotland.

(Fort Bragg, NC)

Greensboro – Winston Salem – High Point, NC ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
15.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the North Carolina Counties of Alleghany, Ashe, Caswell, Davie, Montgomery, Moore, Rockingham, Surry, Watauga, and Wilkes.

(Fort Sill, OK)

Lawton, OK

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
14.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Oklahoma County of Comanche.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
26.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Oregon Counties of Baker, Gilliam, Grant, Morrow, Umatilla, Union, Wallows, and Wheeler, and the Washington County of Walla Walla.

(Carlisle Barracks, PA)

Harrisburg, PA

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade _____	Goals for female participation _____ for each trade _____
6.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Pennsylvania Counties of Cumberland, Dauphin, and Perry.

(Fort Indiantown – Letterkenny Army Depot, PA)

Harrisburg – York - Lancaster, PA

ECO Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
3.1%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Pennsylvania Counties of Franklin, Fulton, Huntingdon, Juniata, Lebanon, and Mifflin.

(New Cumberland Army Depot, PA)

Lancaster, PA

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
2.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Pennsylvania Counties of Adams and York.

(Tobyhanna Army Depot, PA)
Area

Scranton – Wilkes – Barre, PA

SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Pennsylvania Counties of Lackawanna, Luzerne, and Monroe.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____for each trade_____	Goals for female participation _____for each trade_____
23.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the South Carolina Counties of Lexington and Richland.

(Fort Bliss, TX)
Area

El Paso, TX SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
57.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the County of El Paso, Texas.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____for each trade_____	Goals for female participation _____for each trade_____
16.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Texas Counties of Bell and Coryell.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
47.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Texas Counties of Bexar, Comal, and Guadalupe.

(Arlington – Fort Belvoir – Pentagon – Fort Meyer, VA)

Washington, DC – MD – VA SMSA

Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
26.0%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the District of Columbia and the Maryland Counties of Charles, Montgomery, and Prince Georges, and the Virginia Counties of Arlington, Fairfax, Loudoun, Prince William, Alexandria, Fairfax City, and Falls Church.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation _____ for each trade	Goals for female participation _____ for each trade
27.9 %	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Virginia Counties of Albemarle, Amelia, Brunswick, Buckingham, Caroline, Charlotte, Cumberland, Essex, Fluvanna, Greene, Greensville, Halifax, King and Queen, King William, Lancaster, Louisa, Lunenburg, Madison, Mecklenburg, Northumberland, Nottoway, Orange, Prince Edward, Richmond, Sussex, Charlottesville, Emporia, and South Boston.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
30.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Virginia Counties of Dinwiddie, Prince George, Colonial Heights, Hopewell and Petersburg.

(Fort Eustis – Fort Monroe, VA)

Norfolk – Virginia Beach – Newport News, VA SMSA

Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
27.1%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Virginia Counties of Gloucester, James City, York, Hampton, Newport News and Williamsburg.

**(Fort Story, VA)
Area**

Norfolk – Virginia Beach – Portsmouth, VA-NC

SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
26.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the North Carolina County of Currituck and the Virginia Counties of Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach.

(Fort Lewis, WA)

Tacoma, WA

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
6.2 %	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Washington County of Pierce.

(Yakima Firing Center, WA)
Area

Yakima, WA SMSA

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
9.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Washington County of Yakima.

(Fort McCoy, WI)
Area

La Crosse, WI ECO

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Michigan Counties of Houston and Winona and the Wisconsin Counties of Buffalo, Jackson, Juneau, Monroe, Trempealeau, and Vernon.

(Fort Buchanan, PR)

Puerto Rico

SMSA Area

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (APR 1984) (FAR 52.222-23D) (DEVIATION)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for minority participation for each trade</u>	<u>Goals for female participation for each trade</u>
49.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs Office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the--

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is: the Island of Puerto Rico.

SECTION 01454

CONTRACTOR QUALITY CONTROL
10/2000

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(1994a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, a generic site Quality Control Plan (CQC) proposed to implement the requirements of the Contract Clause entitled "Inspection of Construction." For each Task Order, not later than 10 days after receipt of its notice to proceed, the Contractor shall

furnish a supplement to the CQC Plan of the task order's specific requirements. The plan shall identify personnel, procedures, control, instructions, test records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan for each task order shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same

trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of any task order, and prior to acceptance by the Government of the task order's CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. **For Education, Registration and Work Experience requirements see Volume 1, Section C, paragraph C.3.8.6 Contractor Quality Control (CQC) System Manager. (Am#1)** In addition to having experience in building construction, the Quality Control Manager will have experience in construction and remodeling of Medical Facilities. The CQC System Manager shall be assigned no other duties. **The CQC System Manager's**

representative at any task order site may have duties as project superintendent in addition to quality control unless required by a task order for the representative to have no other duties; and shall be on the site at all times during construction. Provide alternates for the CQC System Manager and for the CQC System Manager's representative at any task order site. These individuals shall be identified in the plan to serve in the event of the System Manager's and the CQC System Manager's Task Order Representative's absence. The requirements for the alternates shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

3.4.3.1 CQC Staff

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts and work crews involved with the construction. Except as required for specialized CQC personnel, these personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities.

3.4.3.2 Specialized CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization, **when required by the statement of work for each Task Order**, specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, civil, structural, environmental, architectural, **hospital equipment, and hospital planning and life safety/OSHA.** **These personnel shall have experience in construction and remodeling of Medical Facilities.** These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

Experience Matrix

Area & Qualifications

a. Civil

Graduate Civil Engineer with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience

b. Mechanical

Graduate Mechanical Engineer with 2 yrs experience or person with 5 yrs related experience

c. Electrical

Graduate Electrical Engineer with 2 yrs related experience or person with 5 yrs related experience

d. Structural

Graduate Structural Engineer with 2 yrs experience or person with 5 yrs related experience

e. Architectural

Graduate Architect with 2 yrs experience or person with 5 yrs related experience

f. Environmental

Graduate Environmental Engineer with 3 yrs experience

g. Hospital Equipment

Graduate Mechanical and/or Electrical Engineer with 2 yrs experience in hospital design and equipment or person with 5 yrs related experience

h. Hospital Planning and Life Safety/OSHA

Graduate Architect with 2 yrs experience in design of medical facilities or person with 5 yrs related experience

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This class is mandatory for the Contractor's quality control manager. Certificates issued upon successful completion are valid for five years. This course is periodically offered at the Fort Worth District, Corps of Engineers Office, Federal Building, Room 1A03, 819 Taylor Street, Fort Worth, Texas. Attendees must be fluent in the English language (able to read and write) at the high school level.

Registration is required; call (817) 978-9998 or (817) 978-3870 for times and reservations. There is no charge for the course; however the Contractor will pay for travel and per diem costs.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERIES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the task order drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved. (Only coded A or B shop drawing submittals will be considered "as approved." Submittals other than those coded A or B required to be resubmitted will delay the preparatory phase meeting until they have been resubmitted and approved.)
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 72 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if : the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.

- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$2,000 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Government-contract laboratory designated by the Medcom Office.

Coordination for each specific test, exact delivery location, and dates will be made through the Medcom Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Contract Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager and the CQC staff shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be

prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 12 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

- a. Minimum construction quality control report and the required preparatory and initial inspection documentation.
- b. All tests of piping systems or portions thereof shall be recorded on the "Piping System Test Report."
- c. Built-up, Modified bitumen, Elastomeric single-ply roofing operations, including materials used, shall be reported on "CONTRACTOR'S INSPECTOR ROOFING CHECK LIST AND TEST REPORT."
- d. Maintain current records of drilled pier construction and furnish to the Contracting Officer on a weekly basis detailed reports recorded on SWF Form 1175-J, "Construction Record Drilled Piers."
- e. When operation and maintenance instructions for equipment are furnished to Government representatives by the Contractor, the Contractor's representative shall record on a form similar to that attached hereto the applicable data, including the name, organization, and signature of each person attending the instructions.
- f. All tests on engine-generator sets shall be recorded on "Appendix A (FWDR form 415-1-170)" and "Appendix B (Frequency Control & Voltage Regulation)" forms.

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

SAMPLE FORMS

Sample QC forms follow this page.

(Sample of typical Contractor Quality Control Report)

CONTRACTOR'S NAME
(Address)

DAILY CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract
No.: _____

Description and Location of work:

WEATHER: (Clear) (P. Cloudy) (Cloudy);
Temperature: _____ Min. _____ Max;
Rainfall _____ inches.

Contractor/Subcontractors and Area of Responsibility with Labor Count for Each

- a. _____
- b. _____
- c. _____
- d. _____

Equipment Data: (Indicate items of construction equipment, other than hand tools, at the job site, and whether or not used.)

1. Work Performed Today: (Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above. If no work is performed, report the reason.)

2. Results of Surveillance: (Include satisfactory work completed, or deficiencies with action to be taken.)

a. Preparatory Inspection:

b. Initial Inspection:

c. Follow-up Inspections:

3. Test Required by Plans and/or Specifications performed and Results of Tests:

4. Verbal Instructions Received: (List any instructions given by Government personnel on construction deficiencies, retesting required, etc., with action to be taken.)

5. Remarks: (Cover any conflicts in plans, specifications, or instructions or any delay to the job.)

6. Results of Safety Inspection: (Include safety violations and corrective actions taken.)

Contractor's Inspector

CONTRACTOR'S VERIFICATION: The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Contractor's Chief of Quality Control

NOTE:

DO NOT LEAVE REPORT ITEMS BLANK

Items 1. through 6. must be reported every day. If there is no other report on an item, enter the work "none" in the reporting space. Reports with items left blank will be returned as incomplete.

Page 2

PREPARATORY PHASE CHECKLIST

Contract No. _____ Date: _____

Definable Feature: _____ Spec Section: _____

Gov't Rep Notified _____ Hours in Advance Yes _____ No _____

I. Personnel Present:

Name	Position	Company/Government
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		

(List additional personnel on reverse side)

II. Submittals

1. Review submittals and/or submittal log 4288.
Have all submittals been approved? Yes _____ No _____

If no, what items have not been submitted?

- a. _____
- b. _____
- c. _____

2. Are all materials on hand? Yes _____ No _____

If no, what items are missing?

- a. _____
- b. _____
- c. _____

3. Check approved submittals against delivered materials. (This should be done as material arrives.)

Comments _____

III. Material storage

Are materials stored properly? Yes _____ No _____

If No, what action is taken? _____

IV. Specifications

1. Review each paragraph of specifications.

2. Discuss procedure for accomplishing the work.

3. Clarify any differences.

V. Preliminary Work and Permits

Ensure preliminary work is correct and permits are on file.

If not, what action is taken? _____

VI. Testing

1. Identify test to be performed, frequency, and by whom.

2. When required?

3. Where required?

4. Reviewing Testing Plan.

5. Have test facilities been approved?

VII. Safety

1. Review applicable portion of EM 385-1-1.

2. Activity Hazard Analysis approved? Yes _____ No _____

VIII. Corps of Engineers comments during meeting.

CQC REP

PPC Page 3

INITIAL PHASE CHECKLIST

Contract No. _____ Date: _____

Definable Feature: _____

Gov't Rep Notified _____ Hours in Advance Yes _____ No _____

I. Personnel Present:

	Name	Position	Company/Government
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

(List additional personnel on reverse side)

IC Page 1

II.

Identify full compliance with procedures identified at preparatory.
Coordinate plans, specifications, and submittals.

Comments

III. Preliminary Work. Ensure preliminary work is complete and correct.
If not, what action is taken?

IV. Establish Level of Workmanship.

1. Where is work located? _____

2. Is a sample panel required? Yes _____ No _____

3. Will the initial work be considered as a sample?

Yes _____ No _____

(If yes, maintain in present condition as long as possible.)

V. Resolve any differences.

Comments

VI. Check Safety

Review job conditions using EM 385-1-1 and job hazard analysis.

Comments _____

CQC REP

IC Page 3

PIPING SYSTEM TEST REPORT

STRUCTURE OR BUILDING _____

CONTRACT NO. _____

DESCRIPTION OF SYSTEM OR PART OF SYSTEM TESTED: _____

DESCRIPTION OF TEST: _____

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TESTS FOR CONTRACTOR:

NAME _____

TITLE _____

SIGNATURE _____

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED SYSTEM HAS BEEN TESTED AS
INDICATED ABOVE AND FOUND TO BE ENTIRELY SATISFACTORY AS REQUIRED IN
THE CONTRACT SPECIFICATIONS.

SIGNATURE OF INSPECTOR _____

DATE _____

REMARKS: _____

CONTRACTOR'S INSPECTOR ROOFING CHECK LIST AND TEST REPORT
(For each day of roofing operations)

Date _____ Weather _____

Contract No. _____

All data required to be taken from labels on container:

1. Type of bitumen used with underlayment or insulation and area covered _____

2. Type of bitumen used with base sheet and area covered _____

3. Type of bitumen used for mopping 4-ply _____

4. Type of bitumen used for flood coat or surfacing gravel _____

5. Type of thickness of insulation or underlayment used _____

6. Type of base sheet used _____

7. Type of felt used _____

8. Source of surface gravel and condition, wet, dry, clean _____

9. Roofing sample(s), location and weight _____

10. Bitumen sample furnished to the Government, quantity and type _____

11. Bitumen temperature checks, type of asphalt, time taken, maximum
temperature specified _____

12. Are brooms being used? Yes _____ No _____

13. Bituminous cement used, type and usage _____

14. Area covered _____

Contractor's Approved Authorized
Representative

Quality Control Inspector

JOB ORDER CONTRACT JOC TECHNICAL SPECIFICATIONS VOLUME III

FOR:

**MEDCOM SUPPORT TEAM
FORT WORTH**

(UPB localized to Fort Lewis – WA)



FINAL (REVISION 001)

JULY 2001

PREPARED BY:



U.S. COST INCORPORATED
WWW.USCOST.COM

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DIVISION 01 GENERAL CONDITIONS

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SECTION 01200 WARRANTY OF CONSTRUCTION ZERO ACCIDENTS INDEX

1.0 WARRANTY OF CONSTRUCTION (APR 1984):

1.1 In Addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph 1.10 below, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workman-ship performed by the Contractor or any subcontractor or supplier at any tier.

1.2 This Warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

1.3 The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of-

1.3.1 The Contractor's failure to conform to contract requirements; or

1.3.2 Any defect of equipment, material, workmanship, or design furnished.

1.4 The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

1.5 The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

1.6 If the Contractor fails to remedy any failure, defect, or damage within a time as specified in paragraph: WARRANTY SERVICE CALLS after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

1.7 With Respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

1.7.1 Obtain all warranties that would be given in normal commercial practice;

1.7.2 Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer, and

1.7.3 Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

1.8 In the Event the Contractor's warranty under paragraph 1.2 above has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

1.9 Unless a Defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.



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1.10 This Warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

1.11 Defects in Design or manufacture of equipment specified by the Government on a "brand name and model" basis, shall not be included in this warranty. In this event, the Contractor shall require any subcontractors, manufacturers, or suppliers thereof to execute their warranties, in writing, directly to the Government. (Based on FAR 52.246-21)

2.0 WARRANTY SERVICE CALLS: The Contractor shall furnish to the Contracting Officer the names of local service representatives and/or Contractors that are available for warranty service calls and who will respond to a call within the time periods as follows: 4 hours for heating, air-conditioning, refrigeration, air supply and distribution, and critical electrical service systems and food service equipment, and 24 hours for all other systems. The names, addresses, and telephone numbers for day, night, weekend, and holiday service responses shall be furnished to the Contracting Officer and also posted at a conspicuous location in each mechanical and electrical room or close to the unit.

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DIVISION 02 SITE WORK

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SECTION 02012 STANDARD PENETRATION TESTS

1.0 DESCRIPTION OF WORK: This specification covers core drilling and borings for subsurface investigation of soils.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION:

3.1 Auger Borings: ASTM D 1452.

3.2 Soil Samples: ASTM D 1586, ASTM D 1587.

3.3 Rock Cores: ASTM D 2113, Size BX and NX.

3.4 Bearing Capacity: ASTM D 1194.

3.5 Soils Classification: ASTM D 2487, D 2488, MIL-STD-619.

3.6 Boring Logs: Boring report shall include, but not be limited to, a boring location plan locating and numbering boring and boring logs. Log of borings shall have boring number; date of start and finish of boring; rig type, job number and name; sample number, depth, and type; depth of strata changes, soil description and classification, surface elevation, depth of boring, and depth of water table.



SECTION 02075 CONCRETE CORE DRILLING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of equipment and labor for core drilling of existing concrete. Procedures shall be in accordance with the equipment manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: (Section not used)

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Equipment shall be of shot-drill or diamond-drill type and shall be acceptable to the Contracting Officer. Shot drilling shall be used on horizontal surfaces only.

3.1.2 Location and Size of Cores shall be as directed by the Contracting Officer.

3.2 Core Drilling:

3.2.1 Drilling shall be performed in a neat manner providing a smooth, clean hole perpendicular to the surface.

3.2.2 Equipment shall be rigidly affixed to the surface to prevent drifting or misalignment of the hole.

3.2.3 Work shall be planned and executed so that dust and rubble are held to a minimum.

3.2.4 Surrounding Surfaces, Material, and Equipment shall be protected from damage from dust, water, and flying debris.

3.3 Test Samples:

3.3.1 Where Cores from Drilling are to be used for testing of existing concrete, the resulting core shall meet the requirements of ASTM C 42.

3.3.2 Test Cores shall be taken at locations as directed by the Contracting Officer.

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SECTION 02080 ASBESTOS REMOVAL AND DISPOSAL

1.0 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. References to these publications in the text will be by basic designation only. State and Local laws and regulations shall also apply.

1.1 U.S. Government Code of Federal Regulations (CFR):

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1926 Safety and Health Regulations for Construction

40 CFR 61 National Emission Standards for Hazardous Air Pollutants, Subpart A General Provisions

40 CFR 61 National Emission Standards for Hazardous Air Pollutants, Subpart M National Emission Standard for Asbestos

40 CFR 241 Guidelines for the Land Disposal of Solid Wastes

40 CFR 257 Criteria for Classification of Solid Waste Disposal Facilities and Practices

1.2 American National Standards Institute (ANSI) Publications:

Z9.2 Fundamentals Governing the Design and Operation of Local Exhaust Systems

Z88.2 Practices for Respiratory Protection

1.3 National Institute of Occupational Safety and Health (NIOSH):

Manual of Analytical Methods, 2nd Ed., Vol. 1, Physical and Chemical Analysis Methods (P&CAM):

Method 239 Asbestos Fibers in Air

Method 7400 Fibers (N1, 3rd Ed., Vol. 1)

1.4 Underwriters' Laboratories, Inc., (UL):

586 Test Performance of High Efficiency, Particulate, Air Filter Units

2.0 GENERAL REQUIREMENTS: This specification covers the removal and disposal of asbestos materials performed under this contract.

2.1 Work Required: Asbestos containing materials (ACM) present within and upon the structures, materials, and equipment to be altered, demolished, or repaired shall be removed and disposed of prior to demolition, alteration, or repair of the structures, materials, and equipment involved.



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2.1.1 Locations: Asbestos containing materials shall be removed from the structures, materials, and equipment to be demolished, altered, or repaired, and from all other site locations where directed. Asbestos materials to be removed shall be as identified in the appropriate "Asbestos Sampling Report" provided by the Government or as shown on the drawings or written descriptions which form a part of the construction documents. This shall not relieve the Contractor from the responsibility of notifying the Contracting Officer or his representative of the discovery of suspected additional asbestos during the course of contract performance. Upon notification by the Contractor of suspected additional ACM, the Contracting Officer shall be responsible for the verification of existence and extent of additional work. Should the suspected material prove not to be ACM, the Contracting Officer shall so notify the Contractor.

2.1.2 Debris: All debris located within the project limits for asbestos removal and disposal work shall be considered as containing, or having been contaminated with asbestos, and shall be treated, handled, removed and disposed of in accordance with applicable regulations. Any miscellaneous debris located outside of the requested work area which is determined to contain asbestos shall also be disposed of in accordance with the applicable regulations.

2.1.3 Structures, Materials, and Equipment Surfaces: Interior building surfaces, including supporting structure surfaces or equipment shall be considered as contaminated with asbestos containing dust. Surfaces shall be cleaned in accordance with the regulations prior to demolition, alteration, or repair of the structures, materials, and equipment.

3.0 CONTRACTOR COMPLIANCE AND RESPONSIBILITY:

3.1 Compliance: The Contractor shall perform asbestos removal and disposal operations in compliance with all Federal, State, and Local laws, regulations, standards, codes and these specifications, governing asbestos removal and disposal. Any other work required in conjunction with such removal and disposal shall also comply with all Federal, State, and Local laws, regulations, codes, and these specifications. In the event of a conflict between the requirements of the regulations and the requirements contained in these specifications, the more stringent requirements shall govern.

3.2 Responsibility: It shall be the responsibility of the Contractor to visit and investigate the site; review all applicable drawings and specifications; to review all applicable and available "Asbestos Sampling Reports"; to assess the actual amount of asbestos present; and become thoroughly familiar with conditions, and the relative difficulty thereof, which are present and will affect a complete asbestos removal and disposal operation.

3.2.1 The Contractor is responsible for supplying all labor, material, equipment, services, insurances, and all incidentals which are necessary or required to perform the work in accordance with the applicable regulations and these specifications.

3.2.2 The Contractor shall have a Certified Industrial Hygienist (CIH) or his representative at the job site throughout all phases of the work.

4.0 GOVERNMENT RESPONSIBILITY:

4.1 Asbestos Sampling Report: When available, the Contracting Officer or his representative shall provide the Contractor with an Asbestos Sampling Report based on samples taken and analyzed at a testing laboratory. This report shall constitute a representation of what is believed to be a complete identification of the asbestos containing material associated with a facility or site, and be definitive to the degree that the Contractor may use the report to determine initial project requirements. While the report should identify all known asbestos at the facility or site, it is not a certification of total scope identification. The Contractor

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shall remain responsible for notification to the Contracting Officer of any additional suspected asbestos containing materials discovered during the execution of the Contract.

4.2 Monitoring: The Government may employ a Certified Industrial Hygienist (independent of that required to be employed by the Contractor) to monitor air quality, project procedures, and to help ensure the Contractor is in compliance with applicable Federal, State, and Local regulations.

5.0 **CONTRACTOR QUALIFICATIONS AND CERTIFICATION:** Unless otherwise stated, at least five (5) days prior to the start of any asbestos removal work, the Contractor shall provide the following submittals to the Contracting Officer or his representative:

5.1 Certifications: That the principals of the firm actually performing the work and all employees involved in asbestos removal and disposal operations are familiar with the following:

- a. The U.S. Environmental Protection Agency's Regulations for Asbestos--40 CFR 61, Subpart M.
- b. The U.S. Department of Labor OSHA Asbestos Regulations--29 CFR 1910 and 29 CFR 1926.
- c. State and local regulations pertaining to asbestos removal, abatement, hauling, and disposal.

The Contractor shall also certify that all employees who are involved in asbestos work have received the information and training required by 29 CFR 1926.58(k) (3) and that the Contractor has complied with all other State and Local requirements.

5.2 Licenses: Evidence shall be submitted that the Contractor is licensed to perform asbestos removal projects in the jurisdiction in which the project is located.

5.3 Notifications: Prior to starting any asbestos removal work, the Contractor shall attend a pre-construction meeting. The time and place of the meeting shall be designated by the Contracting Officer. At that meeting the Contractor shall provide a detailed written account(s) of the following:

- a. Proposed work schedule for all operations involving asbestos.
- b. Overview of site preparation plans and the proposed project containment strategy. A complete detailed asbestos removal plan shall be submitted at least three (3) days prior to start of asbestos removal work.
- c. Submit for approval of the Contracting Officer the name, address, and telephone number of laboratories which will perform the test analysis throughout the project. The laboratories shall have participated in at least six (6) rounds of the EPA asbestos bulk sample quality assurance program and currently be proficient in the AIHA Administrated PAT program for air samples.
- d. The name of the Certified Industrial Hygienist (CIH) to be assigned to the project by the Contractor. The CIH shall meet the qualification requirements of a "Competent Person" as stated in 29 CFR 1926.58(b).

5.4 Asbestos Inventory: Prior to any work at the site, the Contractor shall conduct a space-by-space inspection with the Contracting Officer or his designated representative and prepare a written inventory of all existing areas where asbestos has been identified as being present (using the installation supplied asbestos sampling report as a basis). This document will be signed and certified as to apparent accuracy by



both parties. All areas and materials previously described as containing asbestos shall be treated as such, unless the Contractor provides analytical evidence satisfactory to the Contracting Officer that specific portions of the material are not asbestos, or asbestos contaminated.

5.5 Asbestos Removal Plan: At least 3 days prior to the start of asbestos removal work, the Contractor shall submit for approval a complete detailed asbestos removal plan in accordance with Paragraph 5.3(b) above. The plan shall contain the following elements:

5.5.1 Project Containment Strategy: The plan shall be prepared, signed and sealed, including certification number and date by the Contractor's CIH. The plan shall include a sketch and shop drawings showing the location, size, and details of asbestos control of work areas; the location and details, including layout, of the decontamination area as described further in Paragraph 10.0 "DECONTAMINATION ENCLOSURE SYSTEMS"; location of local exhaust equipment and methods and materials to be used to prevent asbestos fiber contamination of the work site and environment. The plan will address all phases of the work including, but not limited to:

- a. Preparation of the work area.
- b. Storage of materials and equipment at the site.
- c. Temporary utilities.
- d. Engineering controls and work practices used to achieve compliance with exposure levels, such as negative air systems, containment barriers, use of removal encapsulants, wet methods, or other methods or combination of methods allowable under 29 CFR 1926.58(g). **DRY REMOVAL METHODS WILL NOT BE ALLOWED.**
- e. Order of removal.
- f. Decontamination procedures to be used for personnel, work area, and equipment.
- g. Waste disposal.
- h. Air monitoring procedures.
- i. Final decontamination and cleanup.
- j. Procedures for dealing with heat stress.
- k. Emergency procedures.
- l. Notification and permits required.

Prior to starting work, the Contractor, the Contractor's CIH, and the Contracting Officer shall meet to discuss plan details, work procedures, and safety precautions.

5.5.2 Work Schedule: This schedule will include all operations involving asbestos.

5.5.3 Equipment List: Shall include the brand name, model, capacity, performance characteristics (as applicable), quantities, and any other pertinent information for all equipment and materials to be used in all asbestos removal operations performed on this project. Shall include, but not be limited to the following:

- a. Respirators and cartridges.

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- b. Vacuums and vacuum equipment.
- c. Protective clothing and other personnel protection equipment.
- d. Trucks used to haul waste.
- e. Containment and disposal of waste materials.
- f. Air sampling pumps.
- g. Wetting agents.
- h. Pressure differential air monitoring devices.

Manufacturers' certificates shall be submitted that all respiratory protection devices and equipment utilized on the site are approved by NIOSH. Provide manufacturer's certificate of HEPA filtration capabilities for all cartridges and filters.

5.6 Asbestos Safety Plan: The Contractor shall submit for approval a detailed safety plan for all phases of the asbestos abatement operation at least three (3) days prior to the start of removal operations. This plan shall include an "Accident Prevention Plan" and shall include, but not be limited to the following elements:

5.6.1 General Safety Procedures:

5.6.2 Respirator Program: This program shall be in accordance with 29 CFR 1926.58(h) and 29 CFR 1910.134(b), (d), (e), and (f) and State and Local regulations.

5.6.3 Medical Surveillance Program: The program shall be in accordance with 29 CFR 1926.58(m), 1926.58(n), and 1910.20.

5.6.4 Emergency Procedures: Emergency procedures shall be in written form and prominently posted in the clean change area and equipment room of the personnel decontamination area. All persons entering the work area shall read and sign the procedures to acknowledge receipt and understanding of the work site layout, location of emergency exits and emergency procedures.

5.7 Asbestos Waste Disposal Plan: This plan will include, but not be limited to the following:

a. Name, location, and telephone number of the landfill used. A copy of the landfill's issued license, and a signed agreement that the landfill will accept the asbestos waste, shall be provided to the Contracting Officer or his representative.

b. Name, address, and telephone number of any waste subcontractors used and the subcontractor's landfill. Provide copies of licenses and signed agreements as in paragraph 5.7(a) above.

c. Should rented equipment be used in removal areas, or to transport asbestos waste materials, a copy of the written notification provided to the rental company informing them of the nature of the use to which the rental equipment will be put shall be included along with the rental company's acknowledgement and agreement.



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5.8 Notifications and Permits: It shall be the Contractor's responsibility to secure all permits required and pay any necessary fees to carry out this asbestos removal project.

5.8.1 Permits: The Contractor shall submit copies of the following:

a. All permits required by Federal, State, and Local Government Agencies for the type of asbestos removal undertaken.

b. All permits required by the Federal, State, and Local authorities for asbestos waste hauling and dumping.

5.8.2 Notifications: The Contractor shall make the following notifications:

5.8.2.1 In accordance with 40 CFR 61.146, at least ten (10) days prior to commencement of demolition work, written notices, with copies, of intent to demolish friable asbestos materials shall be sent to:

a. National Emissions Standard for Air Pollution (NESHAPS) Coordinator at the governing EPA Regional Office.

b. The State asbestos regulatory office.

c. Local regulatory office.

d. Other required notifications.

6.0 **PUBLIC WARNINGS AND POSTED SAFETY INFORMATION:** In addition to the warning signs required by 29 CFR 1926.58(k), the Contractor shall post the following at the work site:

a. "DANGER--ASBESTOS HAZARD, AUTHORIZED PERSONNEL ONLY", signs will be posted at all entrances to each building or area in which work will take place. Additional public notices required by State and/or Local governments will also be posted on the structures and at work areas as necessary.

b. U.S. Department of Labor - OSHA Poster Number 3038 will be hung in a place where it will be clearly visible to personnel each day.

c. A copy of the U.S. Environmental Protection Agency Regulations for Asbestos, 40 CFR 61, Subpart M, and a copy of U.S. Department of Labor--OSHA Asbestos Regulations, 29 CFR 1926.58.

d. A list of all scheduled air sampling tests to be completed each day. This list will include the type of sample to be taken, the approximate time it will be taken, and the total amount of air which is to be taken through the filter cassette.

e. A list of telephone numbers of the local hospital and/or emergency squad, the local police department, the local fire department, a representative of the Contracting Officer who can be reached 24 hours a day, the Contractor's corporate headquarters, and any further professional consultants directly involved in the project.

7.0 **PERSONNEL PROTECTION:** To protect all personnel, authorized visitors, and others in or around the asbestos removal site during the course of this project, the Contractor shall comply with all of the requirements of 29 CFR 1926.58 and the following requirements:

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7.1 Certified Industrial Hygienist (CIH): The Contractor's Certified Industrial Hygienist (CIH) or his representative shall be present on the job site throughout all phases of the removal project to supervise, monitor, and document all aspects of the project's health and safety provisions. The Contractor's CIH shall maintain a daily log showing the results of all air sampling tests done throughout each phase of the project; shall stop work inside the work area, or asbestos control area, if measured airborne fiber levels exceed the "action" level of 0.1 FCC outside the work area as defined by 29 CFR 1926.58(b); shall be responsible for maintaining the records required by the medical surveillance program, and collect all samples for the air monitoring program.

7.2 Medical Surveillance: Medical surveillance will be implemented in accordance with the Contractor's submitted Plan, and as a minimum shall comply with the requirements of 29 CFR 1926.58(m) and (n).

7.3 Respirators: The Contractor shall provide appropriate respirators as required for use in accordance with the Contractor's submitted plan and as a minimum shall conform to 29 CFR 1926.58. Fit testing shall be in accordance with 29 CFR 1926.58(h) (4) and Appendix C referenced therein.

7.4 Protective Equipment: The Contractor shall provide an adequate supply of respirators and protective clothing to all employees, authorized visitors, and personnel at the site in accordance with 29 CFR 1926.58(i).

8.0 **MATERIALS AND EQUIPMENT**: Prior to the start of the asbestos removal and disposal work, the Contractor shall have at the site sufficient quantities of all the materials and equipment needed to complete the project in the proper manner, in accordance with 29 CFR 1926.58(g) and Appendices F and G to 29 CFR 1926.58.

9.0 **AIR MONITORING AND ANALYSIS**: Monitoring of airborne concentrations of asbestos fiber shall be done in accordance with 29 CFR 1926.58. The Contracting Officer shall retain the option to perform independent monitoring. One (1) day prior to beginning onsite demolition or construction work, the Contractor shall have the area monitored and establish the background concentrations for each work area. At least three general area air samples in each asbestos removal work area shall be taken.

9.1 Sampling Equipment: The Contractor shall use the following sample collection equipment:

a. High-volume, oil-less, vane-driven pumps with a calibrated air flow of at least 10 liters per minute. The air flow shall be calibrated while the pump is attached to the sampling train.

b. Low-volume, battery powered, body-attachable, portable personnel pumps with a calibrated flow of at least 2 liters per minute and a self-contained power pack capable of sustaining this calibrated flow for at least two hours. This pump unit shall also be equipped with an automatic flow control unit which will maintain a 2-liter per minute flow even as filter resistance increases due to trapped debris.

c. Standard filter cassettes will be utilized in accordance with 29 CFR 1926.58 Appendices A and B.

d. A portable flow calibrator capable of calibration to within +2 percent over a temperature range of -20 degrees C to +60 degrees C and a flow range to 50 liters per minute.

9.2 Type of Air Sampling: Three types of air samples shall be collected by the Contractor.

9.2.1 **Area Samples**: These shall be collected with a high-volume pump and filter cassette. They shall be collected at a single, specific spot, or station. A minimum of 2,000 liters of air shall be passed through



the filter for each station sample outside the work area. Minimum collection amounts inside the work area shall be determined by filter loading conditions and consultation between the Contractor and the Government, but where possible, shall be sufficient to yield between 100 and 1,300 fibers per square millimeter on the membrane filter.

9.2.2 **Personnel Samples:** These shall be collected with a 2-liter per minute pump and a filter cassette. The cassette shall be attached to the pump with a length of plastic tubing. The cassette will be pinned, clamped, or otherwise securely attached on the forward part of the shoulder of a worker in an acceptable manner. The cassette's exposed filter surface shall be positioned so that it points downward. The pump shall remain attached to the body of the worker and shall run for ten minutes to two hours, adjusted for filter load and working conditions, to produce a filter fiber density of 100 to 1,300 fibers per square millimeter in accordance with 29 CFR 1926.58, Appendix B.

9.2.3 **Dust Samples:** Shall be collected with a 2-liter per minute portable pump equipped with a filter cassette and an extra length of tube extending from the filter end of the cassette. This tube from the forward end of the cassette shall be used in a manner similar to a small vacuum cleaner hose. The hose shall be placed on at least ten spots of visible dust or in areas such as room corners, locker tops, and similar locations where asbestos containing dust is most likely to accumulate. Filters from cassettes used for collecting dust samples shall be analyzed as bulk samples rather than air samples.

9.3 **Sampling Procedures:** The Contractor shall utilize a CIH or a person working under the direct supervision of a CIH to collect all samples. Sampling shall be done in accordance with 29 CFR 1926.58, Appendices A and B.

9.3.1 **Final Air and Dust Samples:** The final air and dust samples will be analyzed using Transmission Electron Microscopy (TEM) methods to determine if asbestos contamination has been reduced to 0.01 FCC or the adjoining environmental concentration, whichever is less.

9.4 **Sample Record Maintenance:** The Contractor shall keep comprehensive records concerning the testing, monitoring, and analysis of air conditions in and around the work area throughout every phase of asbestos removal work.

9.4.1 **Pumps:** The Contractor shall keep records on all air pumps used on this project. "Air pumps" will include high-volume pumps and low-volume personnel pumps. The records shall show:

- a. The manufacturer, model type, and serial number of each item.
- b. The date on which the pump was flow calibrated.
- c. The manufacturer, model type, and serial number of the flow calibrator used to calibrate the pump.
- d. The rate of flow registered by the calibrating instrument for the pump.
- e. The name of the person who performed the calibration.

9.4.2 **Dust Sample Collection:** A hand drawn map marked with X's to show the collection points for dust samples shall accompany each dust sample filter cassette. Each X shall also have a brief written description to further describe the collection point, for instance, "top of pipes".

9.5 **Laboratory Analysis:** The following analytical methods shall be employed where required.

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9.5.1 TEM: The TEM laboratory shall provide written reports on the samples it processes using TEM analysis.

10.0 DECONTAMINATION ENCLOSURE SYSTEMS: Where required by the type of removal procedures utilized, the Contractor shall build suitable framing for the decontamination enclosures. Shop drawings shall be submitted for approval by the Contracting Officer or his representative. Shop drawings shall be submitted as part of the "Asbestos Removal Plan" required by Paragraph 5.5 above, and in accordance with any Contract Clause(s). Adequate descriptions of any portable pre-fab units, if utilized, must be submitted for review and approval by the Contracting Officer or his representative before start of construction. Submittals shall include, but not be limited to, a floor plan layout showing dimensions, materials, sizes, thicknesses, plumbing, and electrical outlets. In all cases access between contaminated and uncontaminated rooms or areas shall be through an airlock. In all cases access between any two rooms within the decontamination enclosure systems shall be through a curtained doorway. The Contractor shall perform maintenance of the enclosure system in accordance with the approved Asbestos Removal Plan.

11.0 DECONTAMINATION PROCEDURES:

11.1 Personnel Decontamination Procedures: The Contractor shall ensure that the personnel decontamination procedures are done in accordance with all Federal, State, and Local laws and regulations.

11.2 Equipment Decontamination Procedures: All tools, furnishings, apparatus, fixtures, pieces of equipment, containers of supplies, exterior surfaces of bags or containers containing ACM, and any other item moved out of the sealed work area, or glove-bag, shall be thoroughly decontaminated.

11.2.1 Items removed from the sealed work area shall be HEPA vacuumed, damp wiped, showered thoroughly, wrapped and sealed in multiple layers of polyethylene sheeting. The item shall then be passed into the washroom, where it shall be damp wiped and/or HEPA vacuumed and then placed in the shower and thoroughly scrubbed as necessary. Electrical items which can be damaged by water shall be wrapped and sealed in at least two layers of 6-mil polyethylene sheeting before they are passed into the holding area.

11.2.2 All the Contractor's tools shall be removed from the work site in 6-mil plastic bags or sealed wraps or appropriate containers. Brooms, long scrapers, shovels, and similar implements shall have their working ends bagged. Each bag shall be secured to the handle with tape. Tubs of scrapers, wire brushes, and similar implements shall be completely bagged and sealed prior to their removal from the work area. Coils of hose and electrical wire shall be bagged and sealed prior to removal from the work area. Scaffolding and ladders shall be wrapped in polyethylene. The Contractor shall be responsible for ultimate disposition of contaminated tools and ensure they will be either disposed of or cleaned so as to meet State, Federal, and Local regulations.

12.0 ASBESTOS REMOVAL PROCEDURE OPTIONS: The Contractor shall determine the most efficient manner in which to carry out the asbestos removal from the work areas in conformance with this specification. The Contractor shall select from options available and in conformance with 29 CFR 1926.58. The selected options or combinations of options selected to comply with the regulations shall be detailed in the Contractor's Asbestos Removal Plan, including, but not limited to details of construction, materials used, equipment required, work practices to be used, etc. Wet engineering control methods or use of removal encapsulants shall be used to comply with the regulations in conjunction with the selected removal procedures.

12.1 Methods: The following methods shall be used for asbestos removal, as applicable, in accordance with 29 CFR 1926.58.



12.1.1 Removal intact using polyethylene sheeting, glove bags, or liquid encapsulating agents approved by the Contracting Officer.

12.1.2 A containment barrier with a negative air system shall be used when asbestos insulation or material is stripped, cut, or otherwise removed from piping, duct, walls, or other surfaces and areas of building interiors without use of methods stated in 12.1.1 above.

12.1.3 In areas where establishment of a containment barrier is not practical, the Contractor shall use removal methods, engineering controls, and work practices which will prevent visible emissions and will prevent exceeding asbestos exposure levels in accordance with 29 CFR 1926.58 and 40 CFR 61. Where an enclosure or containment barrier is not provided, the Contractor shall provide a roped off perimeter around the work area where asbestos removal procedures are being performed. Perimeters shall be appropriately marked with warning signs and/or ribbons in accordance with Paragraph 6.0 "PUBLIC WARNINGS AND POSTED SAFETY INFORMATION". All other requirements for asbestos control areas shall be maintained. The perimeter shall be a minimum of twenty (20) feet from the perimeter of the work, or a greater distance as determined by the Contractor's Certified Industrial Hygienist, in order to maintain acceptable asbestos levels in adjacent areas. The Contracting Officer may require that the perimeter distance be expanded to more than twenty (20) feet should air monitoring results show such expansion is warranted. Personnel and area monitoring of airborne fibers shall be conducted during the work shift at the downwind limits of the asbestos work area, at a frequency recommended by the Contractor's CIH, but at intervals no greater than four (4) hours. Should the lesser concentration value of either the action level or twice the background level of airborne asbestos fibers monitored at the designated limited be exceeded, personnel in adjacent areas shall be evacuated. If after checking, adjacent areas are found to be contaminated, then the areas shall be cleaned, inspected for asbestos dust or residue and the fiber concentration of the air in the area checked, as for final cleanup. After cleanup the fiber concentration shall be less than 0.01 FCC of air, or not greater than the reference background, whichever is less. Personnel decontamination facilities shall be provided as appropriate for removal of contaminated clothing, decontamination of personnel equipment, showering, and donning of clean clothing.

12.2 Encapsulation:

12.2.1 Liquid Removal Encapsulants: Shall be stored, handled, and prepared in accordance with the manufacturer's recommendations. Liquid encapsulants shall be penetrating type encapsulant and shall be applied to asbestos-bearing surfaces with airless spray equipment.

12.2.2 Polyethylene Sheeting: Used for wrapping asbestos-contaminated items prior to disposal. Shall be 6-mil in thickness. The asbestos-contaminated items shall be wrapped in two separate layers of polyethylene sheeting, with the seams and other openings of each layer completely and effectively sealed with duct tape.

12.3 Glove Bag Technique: Removal of asbestos using glove bags shall be done using methods and techniques in accordance with 29 CFR 1926.58, Appendix G. Glove bags shall be constructed of 6-mil polyethylene plastic, with two inward projecting longsleeves, rubber gloves, one inward projecting water wand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove bag shall be constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers during the removal process.

12.4 Containment Barrier and Negative Air System: In situations where intact removal or glove bag techniques are not applicable for removing asbestos from buildings, the Contractor shall erect a containment barrier around the work area and equip the work area with a negative air system. The Contractor shall not remove or strip any asbestos insulation unless this activity is done in a negative air area.

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12.4.1 The containment barrier shall consist of temporary partitions made from lumber and covered on both sides with 4-mil polyethylene, and/or 6-mil polyethylene attached to existing walls. All vents, ducts, grills, and other openings capable of passing air shall be sealed airtight. An opening in the ceiling, walls, or floors which constitute the containment barrier for the work area shall be sealed in this manner.

12.4.2 The negative air system units shall each meet the following minimum requirements:

a. Deliver its rated volume of air with a clean first stage filter, an intermediate filter, and a primary HEPA filter in place.

b. The HEPA filter must be certified capable of removing particles of 0.3 microns at a minimum efficiency of 99.97 percent.

c. Under typical asbestos removal conditions, it must continue to deliver no less than 70 percent of rated capacity when the HEPA filter is 70 percent full or measures 2.5 inches of static pressure differential on a magnehelic gauge.

d. Must have a magnehelic gauge to monitor and display readouts of the unit's air pressure difference across the filters.

e. Must provide a means for the operator to easily interpret the magnehelic gauge readings in terms of cubic feet of air per minute moving through the machine at any given moment.

f. Must have an electronic mechanism which automatically shuts the machine off in the event of a filter breach or absence of a filter.

g. Must have an audible horn which sounds an alarm when the machine has shut itself off.

h. Must have an automatic safety mechanism which prevents a workman from improperly inserting the main HEPA filter.

i. Must be ducted through the containment barrier walls to the outside of the work area. When possible, the duct will exhaust into the outside air; otherwise, it will exhaust into the area of the building beyond the containment barrier where no person not appropriately protected shall be admitted. The Unit shall never be exhausted into the work area.

12.4.3 The Contractor shall provide enough negative air system units to change all the air within the containment barrier at least once every 15 minutes. To compute the minimum number of units required, the Contractor shall divide the total cubic footage of the work space by the documented air moving capacity of the filter units. The air moving capacity of any particular kind of HEPA filtration unit shall be measured in cubic feet of air per minute (CFM). The machine's air moving capacity will be that number of CFM it can move when working under a filter load equivalent to 2 inches of static pressure. The Contractor shall compute the total cubic footage of all air space inside the containment barrier. This computation will be recorded and available to the Contracting Officer upon request.

12.5 Asbestos Removal:

12.5.1 All asbestos removal will be in accordance with the Contractor's approved Asbestos Removal Plan. Prior to commencing intact removal procedures, glove bag procedures, construction of a containment barrier and negative air system, or establishment of a perimeter barrier system around a work area, personnel wearing the appropriate protective clothing and respirator as determined by the pre-work air tests, shall enter the work area and begin wetting all asbestos bearing surfaces. All unattached debris shall



be collected, contained, and cleaned and disposed of in the required manner for asbestos- contaminated materials.

12.5.2 Upon completion of the initial debris cleanup, intact removal, glove bag, containment barrier and/or perimeter barrier procedures shall be initiated.

12.5.3 Unless asbestos-bearing surfaces are encapsulated prior to removal, or removed by other means, they shall be wetted with amended water at such intervals as to prevent the asbestos-bearing surface from drying out. At the start of each new work day, the work shall begin with a thorough wetting of the work area. When wetting is conducted inside a containment barrier and negative air system, the wetting shall begin at points most distant from the negative air system unit intake openings and proceed toward the intake openings. The spray equipment used to apply the amended water shall be capable of producing a "mist" application to the the asbestos-bearing surface to reduce the release of fiber. The asbestos-bearing material shall be saturated sufficiently to wet the substrate without causing excess dripping.

12.5.4 In order to maintain asbestos concentrations at a minimum, the saturated, or encapsulated, or otherwise enclosed asbestos must be removed in manageable sections. Asbestos-bearing waste shall not be dropped from a height in excess of 15 feet. For heights up to 50 feet, the Contractor shall provide chutes or scaffolding to intercept the drop.

12.5.5 The Contractor shall place asbestos waste in approved containers, and apply caution labels on the containers in accordance with 29 CFR 1926.58(k) (2) if not already preprinted on the containers. The Contractor shall clean external surfaces of the filled containers thoroughly by wet sponging in the designated area. The containers shall then be moved to the designated area. The containers shall then be moved to the washroom, thoroughly wet-cleaned, and then moved to the holding area pending removal. Uncontaminated personnel shall not enter the washroom or work area; contaminated personnel shall not exit through the equipment decontamination enclosure system.

12.5.6 Containers (bags or drums) shall be sealed when full. Double bagging of wet material, due to its weight, may be necessary and shall be done if single bagging is not adequate. Bags shall not be overfilled. They should be securely sealed to prevent accidental opening and leakage by tying the tops of bags in an overhand knot, or by taping in gooseneck fashion. Do not seal bags with wire or cord. Bags shall be placed in drums for staging and transportation to the approved sanitary landfill. Bags shall be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops.

12.5.7 Large components removed intact may be wrapped in two (2) layers of 6-mil polyethylene sheeting secured with tape for transport to the landfill.

12.5.8 Asbestos containing waste with sharp-edged components, such as nails, screws, metal lath, or tin sheeting, will tear the polyethylene bags and sheeting and shall be placed into drums for disposal.

12.5.9 After completion of all asbestos stripping and removal work, surfaces from which asbestos containing materials have been removed shall be wet brushed, wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue.

12.5.10 After the gross amounts of asbestos have been removed from every surface, and/or encapsulated materials have been removed, all remaining visible accumulations of asbestos remaining on floors shall be collected using shovels, dust pans, rubber squeegees, rubber dustpans, and HEPA vacuum cleaners as appropriate to maintain the integrity of the containment barrier as used.

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12.5.11 When all coverings have been removed, personnel shall use HEPA vacuum cleaners to vacuum every surface. Particular attention shall be paid to those surfaces or locations which could harbor accumulations of residual asbestos dust.

13.0 FINAL CLEANUP: When all visible asbestos has been removed from the work area, the final cleanup phase shall begin. All outer perimeter seals shall remain in place during final cleanup. Protective clothing and respirators shall remain in use. All normal decontamination procedures shall continue to be followed. Containment barriers and negative air systems established inside of buildings shall remain in full operation.

13.1 Personnel shall use buckets of water to which a grease-cutting detergent has been added for washing the exposed surfaces.

13.2 Paper Wiping Cloths shall be wetted in the buckets and then wiped across all spaces of the work area. The wiping cloths shall not be rinsed and reused. Instead, when dirty, they shall be discarded in a debris bag which the personnel shall keep available for this purpose.

13.3 Wiping Down shall continue until final TEM analysis of air samples documents that the area is cleaned. The area shall be considered clean when the asbestos level does not exceed 0.01 FCC.

13.4 No Seals shall be removed until the Contracting Officer has approved such removal.

13.5 Where Perimeter Barrier Methods are used for cleanup of vacant concrete slabs, Final Cleanup procedures shall be carried out in accordance with the Contractor's Asbestos Removal Plan. Asbestos levels after Final Cleanup is complete shall not exceed 0.01 FCC, or the adjacent environmental concentration, whichever is less, to be acceptable.

14.0 DISPOSAL: All materials contaminated with asbestos shall be disposed of in accordance with the Contractor's Waste Disposal Plan (Reference Paragraph 5.7 above).

15.0 PROJECT DOCUMENTATION: The Contractor shall maintain and shall have available for inspection at the job site, the following:

15.1 A Daily Narrative Log kept by the Contractor's CIH or his designee. This log shall document the major events which occur each day. This log shall provide a comprehensive description of conditions in and around the job site. It shall include the names of all persons who visit the job site and all persons who enter the sealed or restricted work areas. It shall contain the details of all accidents, emergencies, breakdowns of equipment, and any material, procedural or safety difficulties. It shall contain details such as the number of persons on the job, the time they entered the work area and the time they left, and the nature of the work-in-progress. Each day's entries shall be signed and dated by the person who made them.

15.2 A Daily Air Monitoring Log which records all required items outlined in Paragraph 9.0, "AIR MONITORING AND ANALYSIS", subparagraph 9.4, "Sample Record Maintenance".

15.3 Work Schedules and Progress Charts amended on a daily basis.

15.4 Upon Completion of the Work at each structure, slab, or work area, the Contractor shall prepare a report and submit it to the Contracting Officer. The report shall contain:

- a. A summary of all work that was done.
- b. A brief description of how the work was accomplished.



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- c. A description of any problem areas encountered during the work.
- d. A copy of the narrative log maintained at the job site throughout the work.
- e. A copy of the air monitoring log maintained at the job site throughout the work.

16.0 **QUALITY CONTROL:** The Contractor shall establish and maintain a quality control system for all operations performed under this Section to assure compliance with contract requirements and pertinent Federal, State and Local laws, rules and regulations as cited throughout the text of this Section. The Contractor shall maintain records of his quality control for all operations performed, including, but not limited to, the following:

- a. Qualifications of Contractor and Personnel.
- b. Required Notifications and Permits.
- c. Public Warnings and Safety Information.
- d. Containment Barriers, Coverings, and Airlocks.
- e. Personnel Protection.
- f. Decontamination Procedures.
- g. Collecting and Testing of Samples.
- h. Project Documentation.
- i. Asbestos Removal Procedures.
- j. Final Cleanup.
- k. Completion of Work Reports.
- l. Special Conditions.
- m. Disposal Site.
- n. Observance of Safety Regulations.

16.1 **Records:** Copies of all records of inspection, testing, monitoring, or related items, as well as records of any corrective actions taken, shall be furnished to the Contracting Officer in accordance with Federal, State, and Local regulations, and as otherwise directed.

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SECTION 02110 CLEARING AND GRUBBING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of labor and equipment for clearing and grubbing.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION:

3.1 Clearing: Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Clearing shall also include the removal and disposal of structures that obstruct, encroach upon, or otherwise obstruct the work.

3.2 Grubbing: Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.3 Tree Removal shall include the felling of trees and the removal of stumps and roots.

3.4 Disposal of Materials: All felled timber, logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be in compliance with all federal, state, and local regulations.



SECTION 02114 LEAD-BASED PAINT (LBP) REMOVAL AND DISPOSAL

PART 1 - GENERAL

1.1 SCOPE

The work covered by this section includes furnishing all plant, labor, equipment, materials, and transportation necessary for the proper and safe collection, handling, and packaging of Lead-Based Paint (LBP) waste generated by this project, through the preparation of surfaces for repainting or debris resulting from demolition of fascia, soffit, and gutters.

1.1.1 The LBP-related work for this project includes the removal and proper disposal of paint chips that contains more than 0.5 percent lead in the dry film, and small demolition debris that is coated with lead-based paint that contains more than 0.5 percent lead in the dry film.

1.1.2 The Contractor shall coordinate collection, storage, testing, and disposal of the LBP waste with Directorate of Installation Support (DIS), Environmental Division.

1.1.3 The contractor is required to provide notification to the occupants of quarters involved in This contract in accordance with 40 CFR 745.80. The contractor shall distribute EPA pamphlet "Protect Your Family From Lead in Your Home" and obtain required acknowledgement -certifications statements at the same time notices to occupants are given as specified elsewhere in this contract. The contractor shall provide the government with copies of the acknowledgement - certification forms, indicating on the form the contract number and the street address. This will not relieve the contractor of his legal requirement to keep these forms for his own records for a period of 3 years. It is the contractor's responsibility to obtain adequate copies of the EPA pamphlet.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

Title 29, Code of Federal Regulations, U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) Standards

Part 1026.59 Hazard Communication

Part 1926.62 Lead

Title 49, Code of Federal Regulations, U.S. Department of Transportation (DOT) Standards

Part 171 Hazardous Substances

Part 172 Hazardous Materials Tables and Subparts B & C Hazardous Materials Communications Regulations

Title 40, Code of Federal Regulations, U.S. Environmental Protection Agency (EPA) Protection of Environment

Parts 240 to 280 Resource Conservation and Recovery Act

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Part 745, Subpart L Lead-Bases Paint Activities

US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HUD-1539-LBP Guidelines for the Evaluation and Control of Lead-Based Paint Hazards
in Housing

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARDS

ANSI Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation
of Local Exhaust Systems

ENGINEERING MANUALS (EM)

EM 385-1-1 (1992) U. S. Army Corps of Engineers Safety and Health Requirements Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) PUBLICATIONS

NFPA 701 (1996) Methods of Fire Tests for Flame-Resistant Textiles and Film

UNDERWRITERS LABORATORIES INC. (UL) PUBLICATION

UL 586 (1996) High-Efficiency, Particulate, Air Filter Units

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with STATEMENT OF WORK, SW-3:

SD-08 - Statements

1.3.1 Lead-Based Paint Chips/Debris Generation Collection, Handling, and Packaging Plan. This plan shall address:

1.3.1.1 Communication of the lead-based paint hazards associated with this project to Contractor's employees per OSHA 1026.59 Hazard Communication.

1.3.1.2 Worker protection measures. Contractor shall ensure worker protection measures conform to OSHA 1926.62 Lead.

1.3.1.3 Procedures to segregate, contain, and collect paint chips and painted debris generated during performance of the work. Other construction/demolition debris shall not be mixed with paint chips/painted debris.

1.3.1.4 Plans for handling, containerization and proper disposal of paint chips and painted debris.

1.3.2 List of Materials

The Contractor shall submit for approval, a certified list of materials or manufacturer's descriptive literature for all major materials proposed for use in the work specified herein.



1.3.3 List Of Equipment

The Contractor shall submit a certified list or manufacturer's descriptive literature for all LBP removal, cleaning, personal protective, and air monitoring equipment proposed for use in the work specified herein. The list of equipment shall include certification that the Contractor's vacuums and other filtering equipment meet the requirements of ANSI Z9.2 and UL 586.

1.3.4 Proof of Disposal

The Contractor shall be responsible for the proper handling, packaging, shipment and disposal of all non-hazardous waste generated by this project. The Contractor shall pay for all disposal of non-hazardous waste. The Contractor shall provide a certificate of disposal record for each shipment of non-hazardous waste generated by this project to the DPW Environmental Division, in accordance with 40 CFR Part 268, Resource Conservation and Recovery Act.

1.3.4.1 Non-hazardous waste can be disposed in a demolition landfill permitted for the material, a sanitary landfill, or any other legal facility willing to accept the material. The Contractor shall provide the DIS Environmental Division with a Waste Shipment Record (WSR) signed by a responsible official at the receiving facility within 45 days of initial shipment, in accordance with 40 CFR Part 262, Resource Conservation and Recovery Act.

1.3.4.2 According to EPA guidance, architectural members coated with LBP from residential units may be disposed of in a sanitary or construction/demolition landfill willing to accept the waste. This household exemption does NOT apply to concentrated lead waste, such as chips, dust, sludges or stripping waste. These wastes must be handled as hazardous waste. This exemption applies only to family residences, apartments, barracks, and guest quarters.

1.4 HAZARDOUS WASTE

The Contractor shall be responsible for the proper handling and packaging for disposal of all non-hazardous waste generated by this project. The Government will furnish services for disposal of the Hazardous Waste.

1.4.1 The Government has determined that LBP paint chips and small painted debris are hazardous waste. The Contractor shall properly segregate, collect, label, package and store all generated hazardous waste. The Contractor shall inform the Government Quality Assurance Representative of the types and numbers of containers the Contractor shall use to accomplish this project.

1.4.2

The Designer shall choose among the following three options for handling and packaging of all hazardous waste generated by this project. Selection shall be based on the estimated amount of waste to be generated by the project and the time period over which waste will be generated on the job. The bid form shall include a bid line item for the cost of disposal through the DRMO contractor. In addition, provide the Environmental office with the following information: number of roll-offs needed, size of roll-off needed, building number or Housing subdivision name, generator's name, locations of placed roll-offs, type of waste placed in roll-off, quantities of generated waste estimates, duration of each project (number of months), starting and ending date of each project, and project number. She needs to prepare paperwork to order the dumpsters so you need to give her this info at the same time you send the plans and specs to DOC. On SAF jobs, let here know the status of funding so she knows when funds are received and can send the order in.

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This option should be used when only a small amount of waste is to be generated. The current disposal cost paid to the DRMO contractor is \$.69 per pound. Include a 15% contingency in your estimate of the weight of the waste to insure that enough current year funds are allocated to pay for disposal.

(Option 1) The Contractor shall place all LBP paint chips/small paint debris into properly labeled 55 gallon drums and ship each drum when full to the Government for disposal, up to a maximum of 20 drums for the entire contract. Only one drum is permitted at the job site at a time. The job site shall be treated as a Satellite Accumulation Point. Therefore, the Contractor shall NOT write an accumulation start date on the side of each drum. When each drum is full, the Contractor shall coordinate with the DPW Contract Inspector and ship the drum to the Government's designated less than 90-Day Storage Facility on Post. Waste materials shall be packaged for transportation, in accordance with Department of Transportation (DOT) Regulations found in 49 CFR Parts 171, 172 and 173. The Contractor shall supply Department of Transportation 1A1 or 1A2, 55 gallon steel drums for waste storage. These drums shall be open top in good condition without dents or rust and have the package markings labeled on the side of the drum. The Contractor shall not place any liquid Hazardous Waste in drums containing LBP paint chips/small paint debris. The Contractor shall inspect each drum of Hazardous Waste daily and ensure that the lid on each drum of Hazardous Waste is closed and secured except when the Contractor is placing Hazardous Waste into the drum. The Contractor shall label each drum with the following words "LBP Paint Chips" and "Hazardous Waste" on the side of each drum using a minimum of two-inch high letters. The Contractor shall maintain a log of LBP paint chip/small painted debris waste drums generated during the project. The log shall include name of project, contractor name, container number and description of contents. A copy of the completed log shall be provided to the Government Quality Assurance Representative at the conclusion of the project.

Use this option when there will be a large volume of waste generated but in small amounts over a long period of time. Again, the cost per pound is \$.69 and include a 15% contingency to insure adequate funding.

(Option 2) The Contractor shall place all LBP paint chips/small paint debris into properly labeled 55-gallon drums. Only 1 drum is permitted at the job site at a time. The job site shall be treated as a Satellite Accumulation Point. Therefore, the Contractor shall NOT write an accumulation start date on the side of the drums while they are being filled. Waste materials shall be packaged for transportation, in accordance with Department of Transportation (DOT) Regulations found in 49 CFR Parts 171, 172 and 173. The Contractor shall supply Department of Transportation 1A1 or 1A2, 55 gallon steel drums for waste storage. These drums shall be open top in good condition without dents or rust and have the package markings labeled on the side of the drum. The Contractor shall not place any liquid Hazardous Waste in drums containing LBP paint chips/small paint debris. The Contractor shall inspect each drum of Hazardous Waste daily and ensure that the lid on each drum of Hazardous Waste is closed and secured except when the Contractor is placing Hazardous Waste into the drum. The Contractor shall label each drum with the following words "LBP Paint Chips" and "Hazardous Waste" on the side of each drum using a minimum of two-inch high letters. When each drum is full, they shall be moved to a Contractor provided, approved staging area for the purpose of accumulating up to 50 full drums per approved staging area. The Contractor shall coordinate and receive approval for placement of the staging area(s) from the Government Quality Assurance Representative and Environmental Division. This staging area(s) shall become a Less-than-90-Day Storage Facility. The Contractor shall inspect the staging area(s) weekly and log each inspection. The Contractor's log shall include time, date, and signature of person making inspection, accumulation start date of each drum and condition of Less-than-90-Day Storage Facility at time of inspection. The Contractor shall provide a copy of this log weekly to DPW Contract Inspector. The DPW Environmental Division shall also inspect each staging area(s) or Less-than-90-Day Storage Facility weekly. The Contractor shall prepare all drums in each staging area for one shipment. The Contractor shall coordinate with the Government Quality Assurance Representative and Environmental Division to arrange shipment



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for disposal of the full drums. The Government will provide services for pickup at the staging area(s) and disposal. A DPW Environmental Division representative must be present during the shipment of any Hazardous Waste.

Use this option when a large amount of waste will be generated over a short period of time so as to justify the rental fee. Since there is an additional rental fee beyond the first month. You should insure that the Dumpster will be full within a month, otherwise it may be cheaper to use option 2. Note that we pay a lower rental fee if we can allow 30 days for delivery of the Dumpster. However, only use this if you know you can allow for that long a lead-time in the ordering. The schedule for most jobs may not allow for that. In addition to the rental rates you also pay the \$.69 per pound disposal charge.

Rental rates are:

1st month for a 20 CY Dumpster with 5-day ordering lead-time: \$625

1st month for a 30 CY Dumpster with 5-day ordering lead-time: \$950

1st month for a 20 CY Dumpster with a 30-day ordering lead-time: \$450

1st month for a 30 CY Dumpster with a 30-day ordering lead-time: \$245

Monthly rent after the first month for a 20 CY Dumpster: \$95

Monthly rent after the first month for a 30 CY Dumpster: \$150

(Option 3) The Contractor shall place all LBP lead paint chips/small paint debris into plastic bags and then place the bags into Government furnished 20 or 30 CY Hazardous Waste Roll-ons/Roll-off dumpsters when full. One bag shall be filled at a time. Bags shall be kept closed when waste is not being placed in them. Full bags shall not be accumulated on the job site. If bags are placed in a drum while being filled, the drum shall be kept closed and secured when waste is not being placed in it. If a drum is used, the Contractor shall supply Department of Transportation 1A1 or 1A2, 55 gallon steel drums for that purpose. The drum shall be open top in good condition without dents or rust and have the package markings labeled on the side of the drum. The Contractor shall inspect each drum of Hazardous Waste daily. The Contractor shall label the drum with the following words "LBP Paint Chips" and "Hazardous Waste" on the side of the drum using a minimum of two-inch high letters. The job site shall be treated as a Satellite Accumulation Point. Therefore, the Contractor shall NOT write an accumulation start date on the side of the drum. The Contractor shall place only LBP lead paint chips/small paint debris into the Hazardous Waste Roll-ons/Roll-offs. The Contractor shall not place any liquid Hazardous Waste in large Hazardous Waste Roll-ons/Roll-off. No drums or containers of any size will be placed in Hazardous Waste Roll-ons/Roll-off. The Contractor shall fill the Roll-on/Roll-offs as completely and tightly as possible. The Contractor shall secure the tarp to fully cover each Roll-on/Roll-off after each addition of Hazardous Waste into the Roll-on/Roll-off. The Contract Inspector shall coordinate with the Government Quality Assurance Representative in the ordering, placement and pickup of each Roll-on/Roll-off. The Contractor shall notify the Government 10 calendar days in advance of the need for another Roll-on/Roll-off. Each Hazardous Waste Roll-ons/Roll-offs shall become a Less-than-90-Day-Storage-Facility, in accordance with 40 CFR Part 262, Resource Conservation and Recovery Act. The Contractor shall inspect each Hazardous Waste Roll-ons/Roll-offs area weekly and log each inspection. The Contractor log shall include time, date, and signature of person making inspection, accumulation start date of each Roll-on/Roll-off and condition of Less-than-90-Day Storage Facility at time of inspection. The Contractor shall provide a weekly copy of this log to Government Quality Assurance Representative. The DPW Environmental Division will also be inspecting the Roll-on/Roll-offs on a weekly basis.

1.4.3 The Contractor shall analytically test LBP paint chips/small painted debris generated by this project. The Contractor shall pay analytical testing and disposal costs. The Contractor shall present DPW Contract Inspector with a copy of the analytical test results prior to the project beginning.

1.5 WORKER SAFETY AND PROTECTION

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Worker safety and protection is the responsibility of the Contractor. The Contractor shall ensure that his workers are trained and protected IAW applicable OSHA Standard 29 CFR 1926.62 requirements.

1.6 BUILDING PROTECTION

The Contractor shall protect Government employees, occupants, building furnishings, equipment, and other surfaces from the effects of the work.

PART 2 - PRODUCTS

2.1 MATERIALS

Materials furnished under this section shall be standard products of manufacturers regularly engaged in the production of the items, and the most current design, which conforms to the requirements specified.

2.2 LEAD-BASED PAINT (LBP) MATERIALS HANDLING AND EQUIPMENT

Materials and equipment used to wet, remove; seal, handle, and dispose of LBP materials shall conform to the following:

2.2.1 Power Equipment

All power equipment shall conform to OSHA Standards. Equipment guarding shall be present and in good working order IAW EM 385-1-1. The Contractor shall ensure that employees and building occupants are not exposed to equipment noise levels greater than 84 dBA without being provided approved ear protection. All equipment shall be rated intrinsically safe for Class I, Division 1, Groups A, B, C, and D areas.

2.2.3 Vacuum and Exhaust Equipment

All vacuum and exhaust equipment shall have high HEPA filters, which conform to ANSI Z9.2. HEPA filters shall be capable of effectively capturing 99.97 percent of LBP materials. No bypass devices will be permitted. Provisions shall be made to empty the debris collecting hoppers safely without causing visible emissions of particulates.

2.3 WORKER PROTECTIVE CLOTHING AND EQUIPMENT

Selection and use of appropriate protective clothing and equipment is the responsibility of the Contractor. Clothing and equipment shall comply with applicable OSHA Standard 29 CFR 1926.62.

PART 3 - EXECUTION (Not Applicable)

WORK PRACTICES. All work should be undertaken in such a manner as to minimize the generation of dust and to control that which is generated. This is especially important for residential housing, but is also applicable to other buildings. Work in residential housing should be conducted in accordance with the HUD Guidelines. These guidelines provide guidance on dust control, clean up, clearance, work practices, and levels of risk. Work areas shall be cleaned up sufficiently to pass visual and/or dust wipe clearance. These work practices will reduce the risk of lead poisoning of any children or pregnant women in the area.



SECTION 02210 SITE GRADING

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing of labor and equipment for site grading.

2.0 **PRODUCTS:** Borrow material shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor. The source of borrow material shall be the Contractor's responsibility.

3.0 **EXECUTION:**

3.1 **Topsoil** shall be removed without contamination with subsoil and stockpiled convenient to areas for later application or at locations designated. Topsoil shall be removed to full depth and shall be stored separate from other excavated materials and piled free of roots, stones, and other undesirable materials.

3.2 **Excavation:** After all stripping has been completed, excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades designated. Satisfactory excavation material shall be transported to and placed in fill areas within the limits of the work. All unsatisfactory material and surplus material shall be disposed of in areas approved for surplus material storage.

3.3 **Preparation of Ground Surface for Fill:** All vegetation, such as roots, brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish, and other unsatisfactory material within the area upon which fill is to be placed shall be stripped or otherwise removed before the fill is started. Sloped ground surfaces steeper than one vertical to four horizontal on which fill is to be placed shall be plowed, stepped, or broken up as directed, in such manner that the fill material will bond with the existing surface.

3.4 **Fills and Embankments:** The completed fill shall conform to the shape of the typical sections indicated or shall meet the requirements of the particular case. Fill shall be satisfactory material and shall be reasonably free from roots, other organic material, trash, and stones having a maximum diameter greater than 6 inches. No frozen material will be permitted in the fill. Stones having a dimension greater than 4 inches shall not be permitted in the upper 6 inches of fill or embankment.

3.5 **Finished Excavation, Fills, and Embankments:** All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes.

3.6 **Placing Topsoil:** On areas to receive topsoil, the compacted subgrade soil shall be scarified to a 2-inch depth for bonding of topsoil with subsoil. Topsoil then shall be spread evenly and graded to the elevations and slopes shown. Topsoil shall not be spread when frozen or excessively wet or dry.

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SECTION 02211 ROCK REMOVAL

1.0 DESCRIPTION OF WORK: This specification covers removal of rock. Operating procedures shall be in accordance with the equipment manufacturer's recommendations. Demolition and removal of material shall be as required to support the work.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Review The Site for existing features, such as buildings or utilities, that will require protection or other coordination of the work.

3.1.2 Clear The Area and excavate as required to provide access to the rock to be removed.

3.1.3 Provide Bracing, Shoring, Etc., as required to safely execute the work.

3.1.4 Provide Dewatering as required.

3.2 Installation:

3.2.1 Remove Rock to the lines required or designated.

3.2.2 Haul Excavated Materials to the area designated.



SECTION 02215 FINISH GRADING FOR STRUCTURES AND SLABS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of labor and equipment for finish grading for structures and slabs.

2.0 PRODUCTS: Borrow material shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor. The source of approved borrow material shall be the Contractor's responsibility.

3.0 EXECUTION:

3.1 Topsoil shall be removed without contamination with subsoil and stockpiled convenient to areas for later application or at locations specified.

3.2 Excavation shall be performed to the required lines and grades. Satisfactory excavation material shall be transported to and placed in fill areas within the limits of the work. All unsatisfactory material and surplus material shall be disposed of in areas approved for surplus material storage.

3.3 Fills and Embankments: The completed fill shall meet the requirements of the particular case. Fill shall be satisfactory material. No frozen material will be permitted in the fill. Stones having a dimension greater than 4 inches shall not be permitted in the upper 6 inches of fill or embankment.

3.4 Compaction Requirements: Satisfactory material shall be placed in horizontal layers not exceeding 8 inches in loose depth and compacted to 95 percent maximum density in conformity with ASTM D 1556.

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SECTION 02220 SITE EXCAVATION AND FILL

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of material for site excavation and fill.

2.0 **PRODUCTS:** Satisfactory materials shall consist of cohesionless materials classified by ASTM D 2487 as GW, GP, GM, SM, and SW. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

3.0 **EXECUTION:**

3.1 **Excavation:** The Contractor shall perform excavation of every type of material encountered within the limits of the project, to the required lines, grades, and elevations. Satisfactory excavated materials shall be placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials. Additionally required material for fill or embankments shall be excavated from approved borrow areas.

3.2 **Ditches, Gutters, and Channel Changes:** Excavation of ditches, gutters, and channel changes shall be to the required cross sections, grades, and elevations. Backfill shall be thoroughly compacted satisfactory material.

3.3 **Selection of Borrow Material:** Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from approved sources.

3.4 **Backfill:** Backfill adjacent to any and all types of structures shall be placed and compacted in such a manner as to prevent wedging action or eccentric loading upon or against any structure.

3.5 **Embankment:** Earth embankments shall be constructed from satisfactory materials free of organic or frozen material in the embankment and rocks with any dimension greater than 4 inches in the upper 8-inch layer. The material shall be placed in successive horizontal layers of loose material not more than 8 inches in depth.

3.6 **Compaction Requirements:** Satisfactory material shall be compacted to 90 percent maximum density in conformity with ASTM D 1556.



SECTION 02221 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for excavation, trenching, and backfilling for utilities systems.

2.0 PRODUCTS:

2.1 Satisfactory Materials: Satisfactory materials shall consist of any cohesionless materials classified by MIL-STD-619 as GM, GW, GP, SM, and SW. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

2.2 Select Granular Material: Select granular material shall consist of well-graded sand, gravel, crushed gravel, or crushed slag composed of hard, tough, and durable particles.

3.0 EXECUTION:

3.1 Excavation: During excavation, material satisfactory for backfilling shall be stockpiled at a sufficient distance from the banks of the trench to prevent slides or cave-ins. Excavated material not required or not satisfactory for backfill shall be removed from the site. Trenches shall be dewatered as required.

3.1.1 Trench Excavation: Trench walls below and above the top of the pipe shall be sloped or made vertical, depending on the type of pipe used and the soil conditions. Trench width below the top of the pipe shall not exceed 24 inches plus pipe outside diameter (OD) for pipes of less than 24-inch inside diameter and shall not exceed 36 inches plus pipe OD for larger sizes. The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Bell holes shall be excavated to the necessary size at each joint or coupling to eliminate point bearing. Stones of 3 inches or greater shall be removed to avoid point bearing.

3.1.2 Removal of Unyielding Material: Where unyielding material is encountered in the bottom of the trench, such material shall be removed 4 inches below the required grade and replaced with select materials and compacted.

3.1.3 Removal of Unstable Material: Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material placed in layers not to exceed a loose thickness at 6 inches and compacted.

3.1.4 Excavation for Appurtenances: Excavation for manholes, catch-basins, inlets, or similar structures shall be of sufficient size to permit the placement and removal of forms for the full length and width of structure footings and foundations.

3.2 Backfilling: Backfill material shall be placed in layers of 8 inches loose thickness unless otherwise specified. Each layer shall be compacted to at least 95 percent maximum density for cohesionless soils and 90 percent maximum density for cohesive soils under roadways, railroads, and airfields. Water fluting or jetting will not be permitted.

3.2.1 Sidewalks, Turfed or Seeded Areas, and Miscellaneous Areas: Backfill shall be deposited in layers of a maximum of 12 inch loose thickness and compacted to 85 percent maximum density for cohesive soils and 90 percent maximum density for cohesionless soils. Water flooding or jetting methods

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of compaction will be permitted for granular noncohesive backfill material. Water jetting will not be allowed to penetrate the initial backfill.

3.2.2 Trench Backfill: Trenches shall be backfilled to the grade required. The trench shall be backfilled to 2 feet above the top of pipe prior to performing the required pressure tests. The joints and couplings shall be left uncovered during any required pressure tests.

3.2.3 Displacement of Sewers: After other required tests have been performed and the trench backfill compacted to 2 feet above the top of the pipe, the pipe shall be inspected to determine whether significant displacement has occurred. If the interior of the pipe shows poor alignment or any other defects that would cause improper functioning of the system, the defects shall be remedied as directed.

3.3 Special Requirements: Special requirements for both excavation and backfill relating to the specific utilities are as follows:

3.3.1 Gas Distribution: Trenches shall be excavated to a depth that will provide not less than 18 inches of cover in rock excavation and not less than 24 inches of cover in other excavation.

3.3.2 Water Lines: Trenches shall be excavated to a depth that will provide a minimum cover required for frost protection, or from the indicated finished grade, whichever is lower, to the top of the pipe. For fire protection yard mains or piping, the depth of cover shall comply with NFPA No. 24.

3.3.3 Heat Distribution System: Trenches shall be excavated to a depth that will provide a minimum cover required for frost protection. Initial backfill material shall be free of stones larger than 1/4 inch in any dimension.

3.3.4 Electrical Distribution System: Direct burial cable and conduit or duct line shall have a minimum cover of 24 inches from the finished grade, unless otherwise required.



SECTION 02222 STRUCTURAL EXCAVATION

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing of labor and equipment for structural excavation.

2.0 **PRODUCTS:** (Section not used.)

3.0 **EXECUTION:**

3.1 **General:** The excavation shall include trenching for utility and foundation drainage systems to a point 5 feet beyond the building line of each building and structure. Unsatisfactory material shall be removed, and satisfactory material shall be placed and compacted.

3.2 **Drainage:** Excavation shall be performed so that the area of the site and the area immediately surrounding the site and affecting operations at the site will be continually and effectively drained.

3.3 **Utility and Drain Trenches:** Trenches for underground utilities systems and drain lines within 5 feet of the building or structure shall be excavated to the required alignments and depths. The bottoms of trenches shall be graded to secure the required slope and shall be tamped if necessary to provide a firm pipe bed.

3.4 **Borrow:** Where satisfactory materials are not available in sufficient quantity from required excavations, approved materials shall be obtained from approved sources.

3.5 **Excavated Materials:** Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required under this section or shall be separately stockpiled if it cannot be readily placed.

3.6 **Final Grade of Surfaces of Support Concrete:** Excavation to final grade shall not be made until just before concrete is to be placed. For pile foundations, the excavation shall be stopped at an elevation 6 to 12 inches above the bottom of the footing before driving piles. Rock shall be worked down to a satisfactory bed or sidewall.

3.7 **Filling and Subgrade Preparation:** Satisfactory materials free from roots, debris, or stones larger than 3 inches shall be used in bringing fills to the lines and grades indicated and for replacing unsatisfactory materials.

3.8 **Backfilling:** Backfilling shall not begin until construction below finish grade has been approved; underground utilities systems have been inspected, tested, and approved; forms have been removed; and the excavation has been cleaned of trash and debris. Backfill shall be brought to indicated finish grade and shall include backfill for outside grease interceptors and underground fuel tanks. Backfill shall not be placed in wet or frozen areas. Backfill shall not be placed against foundation walls prior to 7 days after completion of the walls. As far as practicable, backfill shall be brought up evenly on each side of the wall and sloped to drain away from the wall.



SECTION 02224 PIPE SLEEVES FOR UTILITY LINES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of pipe sleeves for utility lines. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Jack-Boring Operation: AREA-01.

2.2 Sleeve Materials:

2.2.1 Concrete Pipe: ASTM C 76.

2.2.2 Steel Pipe: ASTM A 53.

2.2.3 Corrugated Steel Pipe: ASTM A 760.

2.2.4 Ductile Iron Pipe: ASTM A 716.

3.0 EXECUTION:

3.1 Roads, Railroads and Airfields: At primary access road crossings, railroad crossings, and at airfield runways and taxiways where aircraft move under their own power, utility lines shall be encased in sleeves of rigid conduit for the length installed under such facilities. Sleeves shall extend a minimum of 5 feet beyond the toe of the slope on each side of the embankment.

3.2 Structures: Where utility lines are required to be installed within 3 feet of existing buildings or structural foundations, the lines shall be encased in sleeves of rigid conduit.

3.3 Clearance: A minimum clearance of at least 2 inches between the inner diameter of the sleeve and the maximum outside diameter of the sleeved pipe, including the joints, shall be provided.

3.4 Sand Bedding: Sand bedding shall be provided for the carrier pipe through the sleeve.



SECTION 02227 FIELD TESTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of labor and equipment for soils compaction testing.

2.0 PRODUCTS:

2.1 Cohesionless and Cohesive Materials: Cohesionless materials include materials classified in MIL-STD-619 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH.

2.2 Degree of Compaction: Degree of compaction required as expressed as a percentage of the maximum density obtained by the test procedure presented in MIL-STD-621, Method 100, compaction effort designation CE 55.

3.0 EXECUTION:

3.1 Compaction Requirements: Each layer shall be compacted to not less than the percentage of maximum density specified below:

	Percent CE 55 Maximum Density	
	Cohesive Material	Cohesionless Material

Fill, Embankment, and Backfill		
Under proposed structures, building slabs, steps, and paved areas.....	90	95
Under sidewalks and grassed areas.....	85	90
Subgrade		
Under building slabs, steps, and paved areas, top 12 inches.....	90	95
Under sidewalks, top 6 inches.....	85	90

3.2 Test Procedure: Field in-place density shall be determined in accordance with ASTM D 1556 or MIL-STD-621, Method 106 or current Standard.

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SECTION 02240 SOIL STABILIZATION - CRUSHED ROCK SUBGRADE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of materials and the preparation and production of a stabilized subgrade by adding granular material and/or fines to the native subgrade material.

2.0 PRODUCT: The crushed rock subgrade shall be a composite mixture of coarse aggregate and fine aggregate. Coarse aggregate shall consist of hard, durable particles or fragments of stone, gravel, or slag, or a combination of these. Materials that break up when alternately frozen and thawed, or when alternately wetted and dried are not suitable for stabilized material. Fine aggregate shall consist of natural or crushed sand. The composite mixture of coarse and fine aggregates should be free from vegetable matter and lumps or balls of clay.

Aggregate used shall meet the following gradation limits:

Coarse Aggregate

Retained on 1-1/2 inch sieve	0 percent
Retained on 3/4-inch sieve	0 - 15 percent
Retained on No. 4 sieve, minimum	10 percent
Retained on No. 8 sieve	25 - 70 percent

Fine Aggregate

Retained on No. 40 sieve	50 - 90 percent
Retained on No. 200 sieve	85 - 95 percent

3.0 EXECUTION: Scarify the subgrade to the depth required. Add granular material to the native material that will bring the composite mixture into compliance with subgrade material requirements. Add water and compact subgrade to required density.



SECTION 02243 SOIL STABILIZATION - HYDRATED LIME

1.0 **DESCRIPTION OF WORK:** This specification covers furnishing of materials and the preparation and production of a stabilized subgrade by the addition of hydrated lime to the native material.

2.0 **PRODUCTS:** Hydrated lime material requirements shall be as follows:

2.1 Available Lime Index as Calcium Hydroxide: 90 percent minimum.

2.2 Residue Retained on No. 30 Sieve: 1 percent maximum.

2.3 Residue Retained on No. 200 Sieve: 20 percent maximum.

3.0 **EXECUTION:**

3.1 Preparation: Scarify the subgrade to the depth required and pulverize the material until it is substantially free of lumps greater than 3 inches in diameter.

3.2 Installation: Lime shall be applied to the pulverized material as a slurry unless otherwise directed. Water shall be added as needed to provide a moisture content of not less than 20 percent. Surface-applied lime slurry shall be plowed and/or disced into the soil as necessary. The resulting mixture shall be aged for not less than 48 hours before compaction.

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SECTION 02250 SOIL STABILIZATION - VIBROFLOTATION

1.0 DESCRIPTION OF WORK: This specification covers the densification of sandy subsurfaces by the method of vibroflotation.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION: The vibroflotation process shall be applied only to areas of clean, granular soils, with not over 20 percent silt or 10 percent clay. Vibrators shall be water-jetted into the soil mass to the depth required. The vibrator shall be withdrawn in 1 foot increments as the saturated soil compacts laterally and at a rate of approximately 1 ft/min to a minimum relative density of 70 percent. As the surface crater forms, sand or crushed rock shall be added and compacted to the appropriate line and grade. The horizontal distance between successive treatments shall not exceed 5 feet, or as directed.



SECTION 02251 SOIL STERILIZATION

1.0 DESCRIPTION OF WORK: This specification covers soil sterilization. Products shall be as directed. Installation procedures shall be in accordance with the product manufacturer's recommendations.

2.0 PRODUCTS:

2.1 Weed Eradication and Soil Fumigation: Products approved by the Environmental Protection Agency.

2.2 Liquid and Dry Herbicides:

2.2.1 Bare Ground Herbicides: Bromacil powder mixture or an ammonium sulfamate spray.

2.2.2 Wetting Agents: As required.

2.3 Equipment: Equipment shall be appropriate to the application and approved before use by the Contracting Officer.

3.0 EXECUTION:

3.1 Soil: After the subgrade has been prepared, all areas to be surfaced shall be treated with a weed eradicator and soil fumigant only in the designated areas.

3.2 Wetting Agents: Wetting Agents may be used as an additive to improve the performance of weed and brush herbicides.

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SECTION 02270 SEDIMENT CONTROL

1.0 DESCRIPTION OF WORK: This specification covers the furnishing of materials and the installation of sediment control by means of a silt fence to control the drifting of silt, sand, dust, or earth.

2.0 PRODUCTS:

2.1 Silt Fence shall be composed of 100 percent spunbonded nylon with polyester netting and shall have the following minimum properties:

Weight	4.2 oz/yd ²	ASTM D 3776
Thickness	10 mils	ASTM D 1777
Grab Tensile	130 lbs.	ASTM D 1682
Elongation to Break	25%± 3%	ASTM D 1682
Mullen Burst	210 lbs.	
Water Flow Rate	470 gpm/ft ²	
Equip. Opn. Size	70 - 100	
Cord	1/8 in. Nylon Braid	

Strength Retention Ultraviolet Protection

Fabric Width Supplied in Widths to
Meet Local, State, D.O.T.,
and/or Federal Requirements

2.2 Fence Posts shall be steel T-posts or cured oak posts, spaced approximately 8 feet apart. Selection of the type of post used, as well as the distance between posts, shall be determined by the manufacturer of the fabric and approved by the Contracting Officer.

3.0 EXECUTION:

3.1 Installation: Installation procedures shall be as recommended by the manufacturer.

3.2 Reuse: Silt fence shall be of such quality that it may be removed and reused at other sites.



SECTION 02272 GABIONS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of gabions. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wire Cages shall be made of hexagonal twist mesh (3 1/2 inches x 4 1/2 inches) with heavily galvanized steel wire. Wire for wire cages shall be a minimum of 0.118 inch in diameter and shall be in conformance with ASTM A 510 and A 641.

2.2 Lacing Wire shall meet the same specifications as the wire used in the mesh, except that its diameter shall be a minimum of 0.0866 inch.

2.3 Fill Material shall consist of hard, durable, clean stone, 4 to 8 inches in size, or as approved.

3.0 EXECUTION:

3.1 Preparation: Before gabions are placed, the earth on which the gabions are to be placed shall be graded to be relatively smooth.

3.2 Installation:

3.2.1 Baskets shall be delivered in a collapsed form. Erect and lace together with lacing wire.

3.2.2 Install Fill Rock in mesh baskets with appropriate equipment. Manually adjust stone during the filling operation to prevent undue voids.

3.2.3 Hand Place Exposed Faces using selected stone to prevent gabions from bulging. Level the last lift of stone with the top of the gabion to properly close the lid to provide an even surface for the next course.

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SECTION 02274 RIPRAP

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of riprap. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Riprap: Stone used for dumped riprap shall be hard, durable, angular in shape, resistant to weathering and to water action, and free from overburden, spoil, shale, and organic material. Neither width nor thickness of a single stone should be less than one third its length. Rounded stone, boulders, shale, and stone with shale seams will not be acceptable. The minimum density of the riprap material shall be 162 pounds per cubic foot. Each load of riprap shall be reasonably well graded. Sand and rock dust exceeding 5 percent by weight of each load shall not be permitted.

2.2 Riprap Bedding: The riprap bedding blanket shall consist of well-graded gravel, crushed rock, sand, or a combination thereof with a maximum size of 6 inches. All material comprising the riprap bedding blanket shall be composed of tough, durable particles, reasonably free from thin, flat, and elongated pieces, and shall contain no organic matter nor soft, friable particles in excess quantities.

3.0 EXECUTION:

3.1 Preparation: Prepare earth slopes by grading and compacting.

3.2 Installation:

3.2.1 Riprap Bedding Blanket Layers shall be placed on the prepared slope or area to develop the full thickness. Each layer shall be placed in one operation, using methods that will not cause segregation of particle sizes within the bedding. The surface of the finished layer should be reasonably even and free from mounds or windrows.

3.2.2 Stone for Riprap shall be placed on the prepared slope or area in a manner that will produce a reasonably well-graded mass of stone with the minimum practicable percentage of voids. Riprap shall be placed to its full course in one operation and in such a manner as to avoid displacing the underlying material. The larger stones shall be well distributed and the entire mass of stone shall be well-graded. The result shall be a compact, uniform riprap layer.



SECTION 02275 SOIL - CEMENT SURFACING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of soil-cement surfacing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Soil: Use SP and SM soils as classified in ASTM D 2487. The soil aggregate shall contain not more than 55 percent material by dry weight passing the No. 4 sieve and not more than 25 percent material passing the No. 200 sieve. Clay lumps shall be removed.

2.2 Cement: ASTM C 150, Type I.

2.3 Curing Compound: ASTM C 309.

3.0 EXECUTION:

3.1 Place the Plant-Mixed Soil-Cement in uniform lifts and compact to the agreed-upon density as determined by ASTM D 558. The optimum moisture content shall be maintained.

3.2 Finish Soil-Cement Surface to the required lines, grades, and cross sections after compaction.

3.3 Construction Joints: If required, construction joints may be horizontal or vertical.

3.4 Curing: Temporary curing of surfaces to receive subsequent bonded lifts or coatings shall be by water fogging. Final curing shall be by application of a membrane maintained intact for 7 days.

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SECTION 02450 RAILROADS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for laying and repairing of railroad track. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations and the American Railway Engineering Association (AREA) publications. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Ballast: Chapter 1, Part 2, AREA-01.

2.2 Oil: ASTM D 402.

2.3 Ties: Wooden, Chapter 3, all parts AREA-01. Concrete, Chapter 10, Part 1, AREA-01.

2.4 Rails: New, Chapter 4, Parts 1 and 2, AREA-01. Relay, Chapter 4, Part 2 "Specifications for Steel Rails" Paragraph 14-Workmanship, AREA-01 Chapter 4.

2.5 Track Fastenings: Track fastening shall include, but not be limited to, bolts and nuts, lockwashers, spikes, rail anchors, tie plates, derails, turnout frogs, and joint bars. Track fastenings shall conform to Chapter 4, Parts 1 and 2 and Chapter 5, Parts 1, 2, and 7, AREA-01.

3.0 EXECUTION:

3.1 Track Removal:

3.1.1 Trackage shall be removed in a manner such as to cause a minimum amount of damage to roadbed.

3.1.2 All Materials Acceptable for Reuse shall, after inspection, be properly stored clear of the work area and separate from new materials.

3.2 Roadbed Preparation:

3.2.1 Damaged Areas in Existing Roadbeds shall be repaired to original condition.

3.2.2 New Roadbeds shall be prepared in accordance with Chapter 1, Part 1 of AREA-01.

3.2.3 Roadbed Surface, Grade, and Drainage shall be approved prior to any distribution of construction material. Ruts and depressions shall be filled and compacted prior to track laying.

3.3 Track Construction:

3.3.1 All Track Construction shall be in accordance with Chapter 5, Parts 4 and 5, of the AREA-01, and in accordance with the adjoining railroad owner/operator specifications and recommendations.

3.3.2 Where Railroads Pass Near Structures where explosives, ammunition, or explosive ingredients are stored, handled, manufactured, or processed, rails that are not electrically continuous and rail switches shall be bonded together by means of flexible copper cable or straps for a distance of at least 100 feet on each side of the structure, and the rails shall be grounded. Where overhead electrical lines in excess of 600 volts



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cross railroad tracks, the rails shall be grounded at points 150 feet on each side of the crossing and the rails bonded between the grounds. At points where the tracks come within 25 feet of structures provided with a grounded system, such grounds shall be interconnected to the nearest rail. The cable used for the interconnection shall be at least 3/4-inch diameter or the same size as the conductors used on the structure.

3.3.3 Crossties shall be spaced in accordance to the adjoining railroad owner/operator specifications, but in no case shall be less than 21 ties per 39 feet of rail or main tracks of 16 ties per 39 feet of rail on sidings and yards.

3.3.4 New Trackage Rail shall be sized in accordance with the adjoining railroad owner/operator requirements. The base of the rail and the surface of tie plates and ties shall be cleaned prior to laying. Only rail saws or track chisels shall be used to cut rail. All new holes shall be drilled or punched.

3.3.5 Existing Trackage Being Rebuilt shall be sized to match the original. Construction of rebuilt trackage shall conform to the same requirements as new construction.

3.3.6 Relayer Rails, in either new or rebuilt tracks, shall be matched to prevent lipped or uneven joints. Any mismatched ends shall be ground or built-up welded.

3.4 Track Maintenance: Track maintenance shall be performed in accordance with Chapter 5, Part 5 of AREA-01.



Section 02511 Portland Cement Concrete Overlays

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of Portland cement concrete overlays on previously paved areas. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Coarse Aggregate:

2.1.1 Composition: Coarse aggregate shall consist of gravel, crushed gravel, crushed stone, a combination thereof, or crushed blast-furnace slag.

2.1.2 Particle Shape: Particles of the coarse aggregate shall be generally spherical or cubical in shape. The quantity of flat and elongated particles in any size group shall not exceed 20 percent by weight as determined by ASTM D 3398.

2.1.3 Gradation: The maximum size of coarse aggregate shall be the lesser of 1/4 of the pavement thickness or 2 inches nominal size. Gradation limits are specified in ASTM C 136.

2.1.4 Deleterious Substances: The amount of deleterious substances in the coarse aggregate shall not exceed the limits, defined in ASTM C 117 and C 123.

2.2 Fine Aggregate shall consist of natural sand, manufactured sand, or a combination of natural and manufactured sand and shall be composed of clean, hard, durable particles. Particles of the fine aggregate shall be generally spherical or cubical in shape. Gradation limits are specified in ASTM C 136.

2.3 Portland Cement shall be Type I in compliance with ASTM C 150. 2.4 Air-Entraining Admixture shall be in compliance with ASTM C 260. Concrete mixtures shall have air content by volume of concrete of 4 to 7 percent based on measurements made immediately after discharge from the mixer.

2.5 Concrete Mixture shall have a nominal slump of 2 inches with a maximum of 3 inches and a 28-day flexural strength of not less than 650 psi.

2.6 Joint and Crack Sealing Materials: Joint filler, joint sealant, and crack sealant shall comply with the following:

2.6.1 Expansion Joint Fillers shall comply with ASTM D 1751 or D 1752 or shall be resin impregnated fiberboard in compliance with the physical requirements of ASTM D 1752.

2.6.2 Type I Sealant shall comply with Fed. Spec. SS-S-200, except that sealant may be furnished as a ready-mixed liquid.

2.6.3 Type II Sealant shall comply with Fed. Spec. SS-S-1401.

2.6.4 Type V Sealant shall comply with CE CRD-C-527 and may be either a single- or multiple-component material.



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2.7 Epoxy-Resin Materials: Materials used in epoxy-resin grout, mortar, and concrete shall comply with the following:

2.7.1 Epoxy-Resin Grout shall be a two-compound material formulated to comply with ASTM C 881.

2.7.2 Epoxy-Resin Concrete shall be composed of epoxy-resin binder and uniformly graded aggregate in compliance with ASTM C 144. The maximum size of aggregate shall be 3/8 or 1/2 inch.

2.8 Dowels shall be plain steel bars complying with ASTM A 499.

3.0 EXECUTION:

3.1 Preparation of Existing Surface: The Contractor shall raise and reset all structures such as manhole frames, valve boxes, drainage structures, etc. to meet the required grade. Bonding course shall be applied to the area prepared to receive overlay and shall be of epoxy-resin grout and Portland cement mortar.

3.2 Concrete Placement: Concrete shall be placed within 45 minutes from the time all ingredients are charged into the mixing drum.

3.3 Vibration: In the final phases of placing, surface vibrating equipment shall be used, and the duration of vibration shall not exceed 20 seconds.

3.4 Joints shall be saw cut and in alignment with underlying existing joints.

3.5 Finishing:

3.5.1 Transverse Finishing: Immediately after placement, concrete shall be accurately struck off and screeded to such elevation that when consolidated and finished, the surface of the pavement will be free from porous places and will be at the required grade. The finishing machine shall make at least two trips over each area of pavement to compact the concrete and produce a surface of uniform texture, true to grade.

3.5.2 Longitudinal Floating: After completion of the transverse finishing, the longitudinal mechanical float shall be operated to smooth and finish the pavement to grade.

3.5.3 Hand Finishing shall be with an approved strike and tamping template and a longitudinal float.

3.5.4 Straightedge Finishing: After the longitudinal floating is completed but while the concrete is still plastic, minor irregularities and score marks in the pavement surface shall be eliminated by means of long-handled wood floats and straightedges. The final finish shall be made with the straightedges, which shall be used to float the entire pavement surface.

3.5.5 Burlap Drag Finishing: When most of the water glaze or sheen has disappeared and before the concrete becomes nonplastic, drag the surface of the pavement in the direction of the concrete placement with a multiple-ply burlap drag.

3.5.6 Edging: After other finishing has been completed, the edges of slabs along the forms and at the joints shall be carefully finished with an edging tool to form a smooth rounded surface of the required radius.

3.6 Concrete Curing and Protection:

3.6.1 Concrete Curing Methods shall consist of mat method, impervious sheeting method, or liquid membrane curing method.

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3.6.2 Concrete Protection: Protect repaired areas against damage prior to final acceptance. Traffic shall be excluded from repaired areas.



Section 02512 Steel Reinforced Portland Cement Concrete Overlays

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel reinforced Portland cement concrete overlays on previously paved areas. Products shall match existing materials and/or shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Coarse Aggregate:

2.1.1 Composition: Coarse aggregate shall consist of gravel, crushed gravel, crushed stone, a combination thereof, or crushed blast-furnace slag. **2.1.2 Particle Shape:** Particles of the coarse aggregate shall be generally spherical or cubical in shape. The quantity of flat and elongated particles in any size group shall not exceed 20 percent by weight as determined by ASTM D 3398.

2.1.3 Gradation: The maximum size of coarse aggregate shall be the lesser of one-fourth of the pavement thickness or a nominal size of 2 inches. Gradation limits are specified in ASTM C 136.

2.1.4 Deleterious Substances: The amount of deleterious substances in the coarse aggregate shall not exceed the limits defined in ASTM C 117 and C 123.

2.2 Fine Aggregate shall consist of natural sand, manufactured sand, or a combination of natural and manufactured sand and shall be composed of clean, hard, durable particles. Particles of the fine aggregate shall be generally spherical or cubical in shape. Gradation limits are specified in ASTM C 136.

2.3 Portland Cement shall be Type I in compliance with ASTM C 150.

2.4 Air-Entraining Admixtures shall be in compliance with ASTM C 260. Concrete mixtures shall have air content by volume of concrete of 4 to 7 percent based on measurements made immediately after discharge from the mixer.

2.5 Concrete Mixture shall have a nominal slump of 2 inches with a maximum of 3 inches and a 28-day flexural strength of not less than 650 psi.

2.6 Joint and Crack Sealing Materials: Joint filler, joint sealant, and crack sealant shall comply with the following:

2.6.1 Expansion Joint Fillers shall comply with ASTM D 1751 or D 1752 or shall be resin impregnated fiberboard in compliance with the physical requirements of ASTM D 1752.

2.6.2 Type I Sealant shall comply with Fed. Spec. SS-S-200, except that sealant may be furnished as a ready-mixed liquid.

2.6.3 Type II Sealant shall comply with Fed. Spec. SS-S-1401.

2.6.4 Type V Sealant shall comply with CE CRD-C-527 and may be either a single- or multiple-component material.

2.7 Epoxy-Resin Materials: Materials used in epoxy-resin grout, mortar, and concrete shall comply with the following:

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2.7.1 Epoxy-Resin Grout shall be a two-compound material formulated to comply with Fed. Spec. MMM-A-001993.

2.7.2 Epoxy-Resin Concrete shall be composed of epoxy-resin binder and uniformly graded aggregate in compliance with ASTM C 144. The maximum size of aggregate shall be 3/8 inch or 1/2 inch.

2.8 Steel Reinforcement: All reinforcement shall be free from loose flaky rust, loose scale, oil, grease, mud, or other coatings that might reduce bond. Bar mats shall comply with ASTM A 184. Welded steel wire fabric shall comply with ASTM A 185. Tie bars shall be deformed bars in compliance with ASTM A 615, A 616, or A 617. Dowels shall be plain steel bars complying with ASTM A 499.

3.0 EXECUTION:

3.1 Preparation of Existing Surface: The Contractor shall raise and reset all structures such as manhole frames, valve boxes, drainage structures, etc., to meet the required grade. Bonding course shall be applied to the area prepared to receive overlay and shall be of epoxy-resin grout and Portland cement mortar.

3.2 Reinforcement Steel shall be installed by the strike-off method wherein the concrete is deposited on the subgrade and struck to the indicated elevation of the steel. The reinforcement shall be laid upon the prestruck surface.

3.3 Concrete Placement: Concrete shall be placed within 45 minutes from the time all ingredients are charged into the mixing drum.

3.4 Vibration: In the final phases of placing, surface vibrating equipment shall be used, and the duration of vibration shall not exceed 20 seconds.

3.5 Joints shall be saw cut and in alignment with underlying existing joints.

3.6 Finishing:

3.6.1 Transverse Finishing: Immediately after placement, the concrete shall be accurately struck off and screeded to such elevation that when consolidated and finished, the surface of the pavement will be free from porous places and will be at the required grade. The finishing machine shall make at least two trips over each area of pavement to compact the concrete and produce a surface of uniform texture, true to grade.

3.6.2 Longitudinal Floating: After completion of the transverse finishing, the longitudinal mechanical float shall be operated to smooth and finish the pavement to grade.

3.6.3 Hand Finishing shall be done with an approved strike and tamping template and a longitudinal float.

3.6.4 Straightedge Finishing: After the longitudinal floating is completed but while the concrete is still plastic, minor irregularities and score marks in the pavement surface shall be eliminated by means of longhandled wood floats and straightedges. The final finish shall be made with the straightedges, which shall be used to float the entire pavement surface.

3.6.5 Burlap Drag Finishing: When most of the water glaze or sheen has disappeared and before the concrete becomes nonplastic, the surface of the pavement shall be dragged in the direction of the concrete placement with a multiple-ply burlap drag.



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3.6.6 Edging: After other finishing has been completed, the edges of slabs along the forms and at the joints, where indicated or directed, shall be carefully finished with an edging tool to form a smooth rounded surface of the required radius.

3.7 Concrete Curing and Protection:

3.7.1 Concrete Curing Methods shall consist of mat method, impervious sheeting method, or liquid membrane curing method.

3.7.2 Concrete Protection: Repaired areas shall be protected against damage prior to final acceptance. Traffic shall be excluded from repaired areas.



Section 02513 Fibrous Reinforced Portland Cement Concrete Overlays

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fibrous reinforced Portland cement concrete overlays on previously paved areas. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Coarse Aggregate:

2.1.1 Composition: Coarse aggregate shall consist of gravel, crushed gravel, crushed stone, a combination thereof, or crushed blast-furnace slag.

2.1.2 Particle Shape: Particles of the coarse aggregate shall be generally spherical or cubical in shape. The quantity of flat and elongated particles in any size group shall not exceed 20 percent by weight as determined by ASTM D 3398.

2.1.3 Gradation: The maximum size of coarse aggregate shall be the lesser of one-fourth of the pavement thickness or 2-inch nominal size. Gradation limits are specified in ASTM C 136.

2.1.4 Deleterious Substances: The amount of deleterious substances in the coarse aggregate shall not exceed the limits defined in ASTM C 117 and C 123.

2.2 Fine Aggregate shall consist of natural sand, manufactured sand, or a combination of natural and manufactured sand and shall be composed of clean, hard, durable particles. Particles of the fine aggregate shall be generally spherical or cubical in shape. Gradation limits are specified in ASTM C 136.

2.3 Portland Cement shall be Type I in compliance with ASTM C 150.

2.4 Air-Entraining Admixture shall be in compliance with ASTM C 260. Concrete mixtures shall have air content by volume of concrete of 4 to 7 percent based on measurements made immediately after discharge from the mixer.

2.5 Concrete Mixture shall have a nominal slump of 2 inches with a maximum of 3 inches and a 28-day flexural strength of not less than 650 psi.

2.6 Joint and Crack Sealing Materials: Joint filler, joint sealant, and crack sealant shall comply with the following:

2.6.1 Expansion Joint Fillers shall comply with ASTM D 1751 or D 1752 and shall be resin impregnated fiberboard in compliance with the physical requirements of ASTM D 1752.

2.6.2 Type I Sealant shall comply with Fed. Spec. SS-S-200, except that sealant may be furnished as a ready-mixed liquid.

2.6.3 Type II Sealant shall comply with Fed. Spec. SS-S-1401.

2.6.4 Type V Sealant shall comply with CE CRD-C-527 and may be either a single- or multiple-component material.



2.7 Epoxy-Resin Materials: Materials used in epoxy-resin grout, mortar, and concrete shall comply with the following:

2.7.1 Epoxy-Resin Grout shall be a two-compound material formulated to comply with ASTM C 881.

2.7.2 Epoxy-Resin Concrete shall be composed of epoxy-resin binder and uniformly graded aggregate in compliance with ASTM C 144. The maximum size of aggregate shall be 3/8 inch or 1/2 inch.

2.8 Steel Fibers: The fibers shall be made from low carbon steel. The following sizes of steel are acceptable: 0.010-inch x 0.022-inch flat steel fiber, 0.010-inch x 0.50-inch round steel fiber, 0.016-inch x 1.0-inch round steel fiber, and 0.016-inch x 0.75-inch round steel fiber with 0.010-inch x 0.020-inch flat section along the length of the fiber and 2.5-inch x 0.025-inch round steel fibers.

3.0 EXECUTION:

3.1 Preparation of Existing Surface: The Contractor shall raise and reset all structures such as manhole frames, valve boxes, drainage structures, etc., to meet the required grade. Bonding course shall be applied to the area prepared to receive overlay and shall be of epoxy-resin grout and Portland cement mortar.

3.2 Batching: Fibers and aggregate shall be blended prior to charging the mixer. The introduction of cement, water, and additives shall be matched with the rate of flow of the fiber-aggregate mixture to assure uniform mix.

3.3 Concrete Placement: Concrete shall be placed within 45 minutes from the time all ingredients are charged into the mixing drum.

3.4 Vibration: In the final phases of placing, surface vibrating equipment shall be used and the duration of vibration shall not exceed 20 seconds.

3.5 Joints shall be saw cut and in alignment with underlying existing joints.

3.6 Finishing:

3.6.1 Transverse Finishing: Immediately after placement, the concrete shall be accurately struck off and screeded to such an elevation that, when consolidated and finished, the surface of the pavement will be free from porous places and will be at the required grade. The finishing machine shall make at least two trips over each area of pavement to compact the concrete and produce a surface of uniform texture, true to grade.

3.6.2 Longitudinal Floating: After completion of the transverse finishing, the longitudinal mechanical float shall be operated to smooth and finish the pavement to grade.

3.6.3 Hand Finishing shall be done with an approved strike and tamping template and a longitudinal float.

3.6.4 Straightedge Finishing: After the longitudinal floating is completed but while the concrete is still plastic, minor irregularities and score marks in the pavement surface shall be eliminated by means of long-handled wood floats and straightedges. The final finish shall be made with the straightedges, which shall be used to float the entire pavement surface.

3.6.5 Broom Finishing: Burlap drag finishing will not be allowed as this brings the steel fibers to the surface. Finishing shall be accomplished using a stiff broom.

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3.6.6 Edging: After other finishing has been completed, the edges of slabs along the forms and at the joints, where indicated or directed, shall be carefully finished with an edging tool to form a smooth rounded surface of the required radius.

3.7 Concrete Curing and Protection:

3.7.1 Concrete Curing Methods shall consist of mat method, impervious sheeting method, or liquid membrane curing method.

3.7.2 Concrete Protection: Repaired areas shall be protected against damage prior to final acceptance. Traffic shall be excluded from repaired areas.



SECTION 02514 ASPHALTIC CONCRETE OVERLAYS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of asphaltic concrete overlays. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Cement: The asphalt cement shall comply with ASTM D 946 penetration grade 85-100 requirements and shall show a negative spot test when tested in compliance with AASHTO T 102.

2.2 Mineral Aggregates: Shall comply with ASTM D 3515 for 3/4-inch maximum aggregate mix.

2.3 Test Properties: The bituminous mixture shall meet the following requirements when tested in compliance with MIL-STD 620.

Stability minimum, lb.....	500
Flow maximum, 1/100-in. units.....	20
Voids total mix, %.....	3-5
Voids filled with bitumen, %.....	75-85

3.0 EXECUTION:

3.1 Preparation of Existing Surface: The Contractor shall raise and reset all structures such as manhole frames, valve boxes, drainage structures, etc., to meet the required grade. An asphalt tack coat shall be applied to all contact surfaces in advance of the asphalt concrete overlay placement. The asphalt tack shall be placed at an asphalt residue coverage rate of 0.05 gal/sq yd.

3.2 Installation:

3.2.1 Joints: Longitudinal joints of the overlay shall be offset at least 1 foot from existing joints. Transverse joints shall be offset at least 2 feet from existing transverse joints.

3.2.2 All Asphalt Concrete Mixture and Pavement that are contaminated, damaged, or defective shall be removed and replaced by the Contractor. Skin patching of rolled pavement will not be permitted.

3.2.3 Compaction of Mixture: The asphalt concrete mixture shall be rolled until a density of not less than 95 percent and not more than 100 percent of laboratory compacted specimen is obtained.

3.2.4 Surface Smoothness: After final rolling, the pavement surface shall not vary in excess of 1/8 inch from a 10-foot straightedge laid on the surface.



SECTION 02515 CRUSHED STONE PAVING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of crushed stone paving. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aggregates: Aggregates shall consist of natural gravel, crushed stone or slag, crushed gravel, angular sand, or other approved materials. Aggregates shall be durable, sound, and free from foreign material, including objectionable coatings, lumps and balls of clay, and organic matter.

2.1.1 Coarse aggregates, consisting of angular fragments of uniform density and quality, shall have a percentage of wear not to exceed 50 percent after 500 revolutions when tested in accordance with ASTM C 131. The amount of flat and elongated particles (length to width greater than 3 to 1) shall not exceed 30 percent.

2.1.2 Crushed gravel shall be manufactured from gravel particles 50 percent of which by weight are retained on the maximum site gradation sieve specified.

2.1.3 Crushed stone shall contain at least 50 percent by weight of crushed pieces having two or more freshly fractured faces for each range of sizes.

2.1.4 Slag shall be an air-cooled blast-furnace product having a dry weight of not less than 65 pcf.

2.2 Binder Material shall consist of screenings, angular sand, or other finely divided mineral matter processed or naturally combined with the coarse aggregate.

2.3 Gradation Requirements specified in the following table shall apply to the completed aggregate surface. The table shows permissible gradings for granular material used in aggregate surface roads and airfields. Sieves shall conform to ASTM E 11.

Gradation for Aggregate Surface Courses

Sieve Designation	No. 1	No. 2	No. 3	No. 4
25.0 mm 1 in.	100	100	100	100
9.5 mm 3/8 in.	50-85	60-100	--	--
4.7 mm No. 4	35-65	50-85	55-100	70-100
2.0 mm No. 10	25-50	40-70	40-100	55-100
0.425 mm No. 40	15-30	24-45	20-50	30-70
0.075 mm No. 200	8-15	8-15	8-15	8-15

2.4 Liquid Limit and Plasticity Index: The portion of the completed aggregate surface course passing the No. 40 sieve shall have a maximum liquid limit of 35 and a plasticity index of 4 to 9.



3.0 EXECUTION:

3.1 Preparation: The previously constructed layer or base shall be cleaned of loose and foreign matter. Adequate drainage shall be provided. Ruts or soft spots shall be corrected. For cohesionless underlying materials, the surface shall be stabilized with aggregate prior to placement of the stabilized-aggregate course.

3.2 Installation:

3.2.1 Mixing and Placing: Materials shall be mixed in such a manner as to obtain a uniform stabilized-aggregate material and a uniform optimum water content for compaction. Mixing and placing procedures shall produce true grades, minimize segregation and degradation, optimize water content, and ensure a satisfactory base course.

3.2.2 Compaction: Each layer of stabilized-aggregate paving shall be compacted. Water content shall be maintained at optimum. Areas inaccessible to the rollers shall be compacted with mechanical tampers and shall be shaped and finished by hand methods.

3.2.3 Layer Thickness: No layer shall be in excess of 8 inches nor less than 3 inches in compacted thickness.

3.2.4 Proof Rolling: Materials in paving or underlying materials that produce unsatisfactory results by rolling shall be removed and replaced with satisfactory materials and recompact.

3.2.5 Edges of Paving: Approved materials shall be placed along edges of stabilized-aggregate paving course in such quantities as will compact to thickness of the course being constructed, allowing at least a 1-foot width of the shoulder to be rolled and compacted simultaneously with rolling and compacting of each layer of the paving course.

3.2.6 Finishing: Finished surface shall be of uniform grade and texture.

3.2.7 Thickness Control: Compacted thickness of the stabilized paving course shall be within 1/2 inch of the thickness required.



SECTION 02520 PORTLAND CEMENT CONCRETE SIDEWALKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of Portland cement concrete (PCC) sidewalks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Ready-Mixed Concrete: Ready-mixed concrete shall comply with ASTM C 94, Alternate No. 2. The concrete shall have a slump of not more than three inches. The concrete shall attain a minimum compressive strength of 2,500 psi at seven days.

2.2 Aggregates: ASTM C 33.

2.3 Reinforcement Steel: Wire mesh reinforcement shall comply with ASTM A 184.

2.4 Expansion Joint Fillers: Expansion joint fillers shall comply with ASTM D 1751 or D 1752 or shall be resin impregnated fiberboard complying with ASTM D 1752.

2.5 Joint Sealers: CE CRD-C-527.

3.0 EXECUTION:

3.1 Reinforcement Steel: Fasten reinforcement steel accurately and securely in place with suitable supports and ties before the concrete is placed.

3.2 Concrete Conveying: Convey concrete to construction areas by methods that will prevent segregation.

3.3 Concrete Placing: Moisten the subgrade just before the concrete is placed. Place concrete in one layer of such thickness that when compacted and finished the sidewalk will be of the required thickness.

3.4 Edge and Joint Finishing: Carefully finish all slab edges, including those at formed joints, with an edger having a radius of 1/8 inch.

3.5 Contraction Joints: Divide the concrete surface into rectangular areas by means of contraction joints spaced at not more than five feet on center.

3.6 Expansion Joints: Form expansion joints about structures and features that project through or into the sidewalk pavement. Fill expansion joints with joint filler of the type, thickness, and width to match existing or as directed by the Contracting Officer. Place the joint filler with the top edge 1/4 inch below the surface. Remove concrete over the joint filler.

3.7 Joint Sealing: At the end of the curing period, carefully clean and seal expansion joints.

3.8 Portland Cement Concrete Curing: Cure new concrete by protection against loss of moisture and rapid temperature changes for a period of not less than 7 days.



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3.9 Backfilling: After curing, remove debris adjoining the sidewalk, backfill, grade, and compact to conform to the surrounding area.

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SECTION 02521 ASPHALT CONCRETE SIDEWALKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of asphalt concrete sidewalks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphaltic Concrete:

2.1.1 Hot-Mixed, Hot-Laid Bituminous Paving Mixtures: ASTM D 3515.

2.1.2 Plant-Mixed, Stockpiled Asphalt Cold Mixes: Asphalt Institute Manual MS-14.

2.2 Bituminous Prime: ASTM D 2027, Grades MC-30 or MC-70; ASTM D 2028, Grade RC-70; or ASTM D 2026, Grade SC-70.

2.3 Base Course: ASTM D 2940.

2.4 Bituminous Tack Coat: ASTM D 977, Grades RS-1, MS-1 or SS-1h; ASTM D 2027, Grade MC-30; ASTM D 2028, Grade RC-70; ASTM D 2026, Grade SC-70; or ASTM D 2397, Grades CRS-1 or CSS-1.

2.5 Seal Coat: ASTM D 2027, Grade MC-250 or MC-800; or D 2028, Grade RC-250 or RC-800.

2.6 Slurry Coat Mixture shall be comprised of 70 percent sand or fine aggregate, 10 percent water, and 20 percent liquid or emulsified asphalt.

2.6.1 Fine Aggregate: ASTM D 1073, Grade 2.

2.6.2 Emulsified Asphalt: ASTM D 977, Grades SS-1 or SS-1h.

3.0 EXECUTION:

3.1 Application Temperatures: Application temperatures for all asphalt materials shall comply with provisions of the Asphalt Institute publications and the applicable ASTMs.

3.2 Subgrade: Construct the subgrade or walkway replacement true to grade and compact as required.

3.3 Base Course:

3.3.1 Placing: Spread the base course material evenly upon the prepared subgrade, in a layer of such depth that when compacted the layer will be uniform and of the thickness required.

3.3.2 Compaction: Immediately following the spreading of the material, compact the base course with equipment to a density as required.

3.4 Surface Course:



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3.4.1 Placing: Apply prime coat, and allow it to cure. The placing of the mixture shall be continuous. Paint all contact surfaces of previously constructed sidewalk with a tack coat of rapid-setting liquid asphalt just before the fresh mixture is placed.

3.4.2 Forms: Set forms with the upper edge true to line and hold grade rigidly in place by stakes placed on the outside of the forms and set flush with the top edge of the forms.

3.4.3 Compaction: Immediately following the placement of the asphalt concrete mixture, compact the surface course with equipment to a density as required.

3.4.4 Backfilling: After removing the forms and debris, backfill the exposed or excavated area adjoining the sidewalk with granular material, grade, and compact to conform to the surrounding area.

3.5 Patching:

3.5.1 For Repair Operations Involving Raveling, Heaving, Spalling, and Alligating: Cut asphalt concrete paving back to solid material, making cut area rectangular with vertical sides. Remove deteriorated pavement including base material if required. Replace base course, compact, and tack coat the base material and the vertical surfaces of cut area. Fill area with new asphalt concrete and compact level with existing walkway. Dust patched area with sand or mineral dust.

3.5.2 Pothole Repair: Cut rectangular hole around pothole back to solid pavement leaving straight, vertical edges. Remove loose material and water to firm base. Fill holes and compact to within 3 inches of the surface in layers not exceeding 6 inches with either base material or asphalt mixture. Apply tack coat to base material and vertical edges. On the surface layer, fill with asphalt mixture and mound to such height that when compacted the mix will be level with surrounding walkway surface. Dust patched area with sand or mineral dust.

3.5.3 Low Spot or Depression Repair: Determine limits of depression with straightedge, and mark outline with crayon. Apply tack coat, 0.05 to 0.15 gallon per square yard, to the cleaned area, and allow to cure. Spread area with asphalt concrete mix and feather edge by raking and manipulation of the material. Roll and compact area to surrounding walkway level. Recheck with straightedge. Apply a sand seal to the patched area to prevent entrance of water.

3.5.4 Polished Aggregate Repair: Clean and dry area thoroughly. Apply tack coat at a rate of 0.05 to 0.15 gallon per square yard; overlay area with new asphalt concrete mix to a minimum 1-1/2 inch thickness and feather to adjoining walkway surfaces. Roll with pneumatic or steel rollers.

3.5.5 Damaged Edging Repair: Remove damaged or deteriorated edging materials and replace.

3.5.6 Prime Coat: Prime new base course with MC-70 liquid asphalt at a rate of 0.20 to 0.30 gallon per square yard. Take care to apply no more asphalt than will penetrate into the base course during curing. Blot excess prime with sand before the surfacing material is applied.

3.5.7 Tack Coat: Surfaces and cut edges of existing asphalt concrete shall be given a tack coat of MC-70 liquid asphalt at a rate of 0.05 to 0.15 gallon per square yard. After application of the tack coat, allow time for the material to cure before surfacing and patching material is placed.

3.5.8 Seal Coat Spray Application: Walkway surfaces that are to be sealed shall receive a liquid asphalt coat applied at a rate of 0.15 to 0.20 gallon per square yard, along with a fine aggregate at a rate of 15 to 20 pounds per square yard.

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3.6 Crack Repair: Fill cracks with liquid asphalt, sand asphalt emulsion water mixture, or slurry seal. After thorough cleaning, work the mixture into cracks by broom or squeegee. Cracks 1/8 to 1/2 inch width shall be slurry sealed and filled with liquid asphalt. Dust repaired cracks with fine aggregate or mineral dust to prevent cracking. Final thickness of the slurry seal shall be 1/8 inch minimum.



Section 02522 Miscellaneous Sidewalks

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gravel, masonry, and wood sidewalks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aggregate shall comply with the following:

2.1.1 Surface Course Aggregates shall be well-graded, crushed stone, 3/4- to 1-1/4 inch size, consisting of clean, sound, durable particles.

2.1.2 Masonry Grout Aggregate: ASTM C 404, Size 2.

2.2 Base Course: Base course material shall be a granular, dense-graded, high-quality compactible material.

2.3 Ready-Mixed Concrete: Ready-mixed concrete shall comply with ASTM C 94. The concrete shall attain a minimum compressive strength of 2,500 psi at 28 days.

2.4 Portland Cement Concrete: Cement shall comply with ASTM C 150.

2.5 Joint Filler: Masonry joint filler shall be Portland cement concrete mix with cement complying with ASTM C 150.

2.6 Masonry Units: Color and texture shall match the existing as nearly as is practicable.

2.7 Wood and Preservatives: Footboards and supports shall be 1-1/2 inch thick Number 1 dense Douglas fir or yellow pine lumber, pressure-treated with chromated copper arsenate (CCA) preservative complying with AWP A P5. Retention shall be a minimum of 0.25 pounds per cubic foot.

3.0 EXECUTION:

3.1 Base Course Repair: Remove material in soft spots to such depth required to provide a firm foundation for surface materials and fill with granular material of a quality that will compact when moistened. Roll or tamp this material to obtain the proper density.

3.2 Surface Repair:

3.2.1 Aggregate Walkways: Spread the surface material evenly on the base course in a layer of such depth that when compacted, the layer will be uniform with a minimum thickness of 4 inches.

3.2.2 Joint Filling: Completely remove and clean the joint of all loose joint material, dirt, clay, or other foreign matter. Fill the joint flush with concrete to provide a uniform surface.

3.2.3 Wood Walkways: Secure wood members with galvanized nails, screws, bolts, or other approved fasteners to ensure tight joints.

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3.2.4 Masonry Walkways: New or salvaged masonry units will be placed on a 3/4-inch mortar setting bed with mortar joints matching the existing walkway. Place the setting bed on a fresh 3-inch thick Portland cement concrete slab.



SECTION 02523 PRECAST SIDEWALKS AND PAVERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of precast sidewalks and pavers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Precast Concrete Patio Blocks: Natural or colored, 2 inches thick.

2.2 Exposed Aggregate or Granite: ASTM C 615 and National Building Granite Quarries Association, Inc.

2.2.1 Exposed Limestone: Limestone (Oolitic), ASTM C 568, Category II.

2.2.2 Exposed White Tumblestone Aggregate: As directed.

2.3 Stone Pavers:

2.3.1 Bluestone Flagging Paver: Irregular cut, 1 inch thick.

2.3.2 White Marble, Crushed Stone: ASTM C 503 and Marble Institute of America (MIA), 3 inches thick.

2.3.3 Bluestone, Crushed Stone: 3 inches thick.

2.3.4 Natural Cleft Slate: ASTM C 629, 3/4-inch irregular cut, 1/2-inch random rectangular cut, or 1/4-inch random rectangular butted joints.

2.4 Granite Blocks: Blocks shall be 3 to 5 inches thick and comply with requirements of ASTM C 615 and National Building Granite Quarries Association, Inc. Sizes shall be 3- 1/2 inches square; 4 to 12 inches by 3 to 5 inches; and 6 to 15 inches by 3 to 6 inches.

2.5 Mortar and Grout:

2.5.1 Portland Cement: ASTM C 150 and the staining requirements of ASTM C 91.

2.5.2 Masonry Cement: ASTM C 91, non-staining.

2.5.3 Hydrated Lime: ASTM C 207, Type S.

2.5.4 Sand: ASTM C 144.

2.5.4.1 White Pointing Mortar: Natural white sand or ground white stone.

2.5.4.2 Colored Pointing Mortar: Marble, granite, or sound stone.

3.0 EXECUTION:

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3.1 Preparation:

3.1.1 Clean Stone or Concrete Block with clear water.

3.1.2 Ferrous Metal: Apply a heavy coat of bituminous paint on metal surfaces in contact with block.

3.2 Installation:

3.2.1 Expansion Joints: Install continuous strips of preformed joint filler.

3.2.2 Clean Subbase and saturate with clean water.

3.2.3 Slush Coat: Apply 1/16-inch thick slush coat of cement grout over concrete subbase about 15 minutes prior to placing setting bed.

3.2.4 Setting Bed: Mix one 94-pound bag of cement to 3 cu ft of sand. Use only enough water to produce a moist surface when setting bed is ready for setting of stone. Spread and screed to a uniform thickness.

3.2.5 Set Stone or Concrete Block before initial set of cement bed occurs. Wet stone or block thoroughly before setting. Apply a thin layer of neat cement paste 1/32-inch to 1/16-inch thick to setting bed, or bottom of stone or block.

3.2.6 Grout Joints as soon as possible after initial set of setting bed and tool slightly concave. Use grout mix of one bag Portland cement to 2 cu ft sand. Cure grout by maintaining in a moist condition for 7 days. Do not permit traffic on surface during setting of units or for at least 24 hours after final grouting of joints.



Section 02525 Concrete Curbs And Gutters

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of concrete curbs and gutters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Curing Materials:

2.1.1 Burlap: AASHTO M 182 having a weight of 14 ounces or more per square yard when dry.

2.1.2 Impervious Sheeting: ASTM C 171.

2.1.3 Liquid Membrane Curing Compound: ASTM C 309. Compound shall be free of paraffin or petroleum.

2.2 Joint Materials:

2.2.1 Expansion Joint Fillers: ASTM D 1751 or ASTM D 1752.

2.2.2 Joint Sealers: CE CRD-C-527.

2.3 Concrete: Concrete shall have a minimum compressive strength of 3,000 psi. The maximum size of aggregate shall be 1-1/2 inches. Concrete shall have a slump of not more than 3 inches and an air content by volume of concrete of 3 to 6 percent.

2.4 Forms: Curb and gutter forms shall be of wood or steel. The outside forms shall have a height equal to the full depth of the curb or gutter. The inside form of curb shall have batter and shall be securely fastened to and supported by the outside form. Wood forms shall be surfaced plank, 2-inch nominal thickness, straight and free from warp, twist, loose knots, splits, or other defects. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Radius bends may be formed with 3/4-inch plywood. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Form ends shall be interlocked and self-aligning. Forms shall include flexible forms for radius forming, corner forms, form spreaders, and fillers.

3.0 EXECUTION:

3.1 Preparation: The subgrade shall be constructed to grade and cross section. The subgrade shall be of materials equal in bearing quality to the subgrade under the adjacent pavement and shall be compacted. The subgrade shall be maintained in a smooth, compacted condition, in conformity with the required section and established grade until the concrete is placed. The subgrade shall be in a moist condition when concrete is placed.

3.2 Installation:

3.2.1 Form Setting: Forms for curbs shall be carefully set to alignment and grade and to conform to the dimensions of the curb. Clamps, spreaders, and braces shall be used where required to ensure rigidity in the forms.

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3.2.2 Concrete Placement and Finishing: Concrete shall be placed in layers not to exceed 6 inches. Concrete shall be thoroughly consolidated. The edges of the gutter and top of the curb shall be rounded with an edging tool to a radius of 1/2 inch, and the surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform in texture. Floated surfaces shall then be brushed with longitudinal strokes. Immediately after removing the front curb form, the face of the curb shall be rubbed. The surface shall be brushed in the same manner as the gutter and curb top. The top surface of gutter and entrance shall be finished to grade with a wood float. Expansion joints and contraction joints shall be constructed at right angles to the line of curb and gutter. Contraction joints shall be constructed by means of 1/8-inch thick separators, of a section conforming to the cross section of the curb and gutter. Contraction joints shall match joints in abutting Portland cement concrete pavement. At other pavements, construction joints shall be placed at not less than 5 feet nor greater than 15 feet apart. Expansion joints shall be formed by means of preformed expansion joint filler material cut and shaped to the cross section of curb and gutter. Expansion joints shall be provided in curb at the end of all returns. Expansion joints shall match expansion joints of abutting Portland cement concrete pavement. At other pavements, expansion joints at least 1/2 inch in width shall be provided at intervals not exceeding 45 feet. Exposed concrete surfaces shall be cured for not less than 7 days.

3.2.3 Backfilling: After curing, debris shall be removed, and the area adjoining the concrete shall be backfilled, graded, and compacted.

3.2.4 Sealing Joints: Expansion joints and the top 1-inch depth of contraction joints shall be sealed with joint sealer. The joint opening shall be thoroughly cleaned before the sealing material is placed. Excess material on exposed surfaces of the concrete shall be removed immediately and exposed concrete surfaces cleaned.



Section 02570 Portland Cement Concrete

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of Portland cement concrete (PCC) pavements. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Ready-Mixed Concrete shall comply with ASTM C 94, Alternative No. 2. The concrete shall have a slump of not more than three inches. The concrete shall attain a minimum compressive strength of 2,500 psi at seven days.

2.2 Aggregates shall comply with ASTM C 33.

2.3 Air Entraining Admixtures shall comply with ASTM C 260.

2.4 Concrete Curing Materials shall comply with one of the following:

2.4.1 Burlap: AASHTO M182.

2.4.2 White, Opaque Polyethylene-Coated Burlap: ASTM C 171.

2.4.3 White, Opaque Polyethylene Sheeting: ASTM C 171.

2.4.4 White Waterproof Paper: ASTM C 171.

2.4.5 Liquid Membrane Curing Compound: ASTM C 309.

3.0 EXECUTION: (Not used.)



SECTION 02575 BRIDGE DECK ASPHALT CONCRETE WEARING SURFACES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of bridge deck asphalt concrete wearing surfaces. Products shall match those existing and/or as shall be directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. The standard specification for highway construction for the state in which the project is located shall be considered the standard for material, equipment, details, and construction methods as supplemented hereafter.

2.0 PRODUCTS:

2.1 Aggregate:

2.1.1 Coarse Aggregate for Bituminous Mixtures: ASTM D 692.

2.1.2 Fine Aggregate for Bituminous Mixtures: ASTM D 1073.

2.1.3 Mineral Filler for Bituminous Mixtures: ASTM D 242.

2.2 Bituminous Materials:

2.2.1 Asphalt Cement: ASTM D 946, penetration grade 85-100.

2.2.2 Anionic Emulsified Asphalt: ASTM D 977, SS-1 or SS-1h.

2.2.3 Rapid Curing Type Liquid Asphalt: ASTM D 2028, RC-70 and RC-250.

2.2.4 Medium Curing Type Liquid Asphalt: ASTM D 2027, MC-30, MC-70, and MC 800.

2.2.5 Coal-Tar Pitch: Specific gravity shall be 1.20 to 1.27 at 77 degrees.

2.2.6 Coal-Tar Pitch Emulsion: ASTM D 3320.

2.2.7 Fiberglass Fabric: ASTM D 1668, Type II or III.

2.3 Asphalt Mixture:

2.3.1 Asphalt Seal Coat: RC-70 or MC-70 with following aggregate:

Sieve Size	Percent Passing (Wt.)
1/2-in.	100
3/8-in.	94-100
No. 4	15-45
No. 16	0-4

2.3.2 Asphalt Slurry Seal: SS-1 or SS-1h with following aggregate:



Sieve Size	Percent Passing (Wt.)
No. 8	100
No. 16	65-90
No. 30	40-60
No. 50	25-42
No. 100	15-30
No. 200	10-20

Mix shall contain not less than 15 percent asphalt emulsion nor more than 10 percent water by weight.

2.3.3 Asphalt Patch Mix: RC 250 or MC 800 with the following aggregate.

Sieve Size	Percent Passing (Wt.)
3/4-in.	100
1/2-in.	85-100
No. 4	65-80
No. 8	50-65
No. 16	37-52
No. 30	25-40
No. 50	18-30
No. 100	10-20
No. 200	3-10

Liquid asphalt shall not be less than 5 percent by weight.

2.3.4 Coal-Tar Emulsion Slurry: The slurry shall not have more than 10 percent water or 5 pounds of aggregate per gallon of coal-tar emulsion. Aggregate shall have the following gradation:

Sieve Size	Percent Passing (Wt.)
No. 10	100
No. 16	30-65
No. 30	0-5

2.3.5 Asphalt-Sand Seal Protection Mix: Asphalt cement penetration shall be grade 85-100 with the following aggregate.

Sieve Size	Percent Passing (Wt.)
3/8-in.	100
No. 4	97-100
No. 10	80-95
No. 40	50-70
No. 80	25-40
No. 200	8-10

3.0 EXECUTION:

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3.1 Preparation:

3.1.1 Traffic Control: When traffic is maintained on bridge under repair or is directed over a temporary run-around, furnish, erect, and maintain all barricades, flags, torches, lights, guardrails, temporary pavement markings, and traffic control signs required for the protection of the public and for the direction of traffic. Number, type, color, size, and placement of all traffic control devices and the use of a flagman shall comply with USDOT FHA MUTCD "Traffic Controls for Highway Construction and Maintenance Operations." All traffic control devices in advance of the construction limits shall also be the responsibility of the Contractor.

3.1.2 Removal of Damaged or Deteriorated Materials:

3.1.2.1 Cleaning for Crack Filling and Slurry Seals: The area shall be swept with stiff bristle brooms and blown clean. Cracks shall be cleaned to the maximum depth possible and made free from any dirt, stones, or other foreign matter.

3.1.2.2 Removal of Deteriorated Material for Patching: Areas to be patched shall extend a minimum of 1 foot into sound surfacing around the perimeter. Saw cut to minimum 3/4 inch deep along all edges of areas delineated to be patched. Remove loose and unsound material completely to the support structure.

3.1.2.3 Preparation for Waterproofing Structural Deck: Remove existing asphalt wearing course and membrane completely to the support structure. Surface shall be smooth and free from projections that might damage the waterproofing membrane.

3.2 Maintenance and Repair Methods:

3.2.1 Filling and Sealing Cracks: Fill the cracks to within 1/8 inch of the surface with asphalt emulsion slurry. Allow the slurry to cure completely before sealing. Seal cracks with liquid asphalt RC-70. The surface of the sealant shall be sprinkled with dry sand to prevent tracking.

3.2.2 Seal Coating: Spray asphalt emulsion seal coat uniformly over the repair area at the rate of 0.15 to 0.25 gallon per square yard after all cracks in the repair area are filled. Immediately following the application of the asphalt emulsion, spread seal coat aggregate uniformly over the treated surface at the rate of 15 to 25 pounds per square yard. Compact by rolling the entire surface. Upon the completion of the work, no loose aggregate shall be allowed to remain on the surface. Allow the sealed area to cure thoroughly before opening to traffic.

3.2.3 Slurry Seal Coating: Where cracks exceed 1 inch in depth or 1/2 inch in width, or both, they shall be filled with the slurry mixture and allowed to cure before placing the slurry seal. Place slurry mixture evenly over area to be sealed. Final thickness of the slurry seal shall be between 1/16 inch and 1/8 inch. Where two applications of the slurry seal are required, allow the initial application to cure before placing the succeeding application.

3.2.4 Patching Asphalt Concrete Surface:

3.2.4.1 Prime Coat: Prime the entire area of patch, including vertical faces, with liquid asphalt RC-70.

3.2.4.2 Placing and Compacting Asphalt Patch Mix: Place sufficient material in the patch area to ensure that the patch surface will not be below that of the adjacent material after compaction. Where the thickness of the finished compacted patch is greater than 3 inches, spread and compact the mixture in 2 or more layers.



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3.2.5 Waterproofing Structural Deck: The waterproofing membrane system shall consist of a penetrating primer, a built-up coal-tar pitch emulsion membrane with 2 plies of coated glass fabric, and a 1/2-inch asphalt-sand seal protection layer.



SECTION 02576 CRACK SEALING OF ASPHALT CONCRETE PAVEMENTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for crack sealing of asphalt concrete pavements. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Liquid Asphalt shall comply with ASTM D 2027, Grade MC-250.

2.2 Emulsified Asphalt shall comply with ASTM D 977, Grade MS-2.

2.3 Sealing Compound shall comply with CE-CRD-C527.

2.4 Fine Aggregate shall be natural sand or crusher dust and have a maximum size of not more than 1/8 inch and be free of clay or organic matter.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 All Cracks to be sealed shall be cleaned of dirt and debris.

3.1.2 Crack Cleaning Equipment shall consist of a portable air compressor with hose and nozzles for directing air directly into cracks and stiff bristle brooms.

3.1.3 Heating Equipment for Liquid Asphalt shall be mobile and shall be equipped with an agitating device for stirring material during heating, a thermometer, regulating equipment for heat control, and a gravity-type draw-off valve.

3.1.4 Heating Equipment for Sealing Compound: Unless otherwise required by the manufacturer's recommendations, the equipment shall be mobile and shall consist of double-boiler, agitator-type kettles with oil medium in the outer space for heat transfer. The applicator unit shall be so designed that the sealant will circulate through the delivery hose and return to the inner kettle when not sealing cracks.

3.1.5 Application Equipment shall have a spout or nozzle of such size that the sealing material will be placed in the cracks without entrapping air in cracks or spreading material on adjacent pavement surface.

3.2 Installation:

3.2.1 Sealing Compound: All cracks 1/8 inch wide and wider shall be sealed. The application temperature for sealing compound shall comply with Fed. Spec. SS-S-1401. Cracks 1/2 inch wide and wider shall be filled with a slurry of fine sand and an emulsified asphalt or liquid asphalt. After the slurry has cured, cracks shall be sealed with liquid asphalt or emulsified asphalt and lightly sanded.

3.2.2 Liquid and Emulsified Asphalt Sealer: The temperature shall be varied so that it flows freely into cracks and completely fills cracks without entrapping air. Cracks shall be free of moisture before filling and shall be filled slightly above the pavement surface. When excess sealer has been removed, the sealer shall be covered with fine sand.



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3.2.3 Traffic Control: Traffic will not be permitted over sealed cracks until the sealer has cooled so that it is not picked up by vehicle tires. The Contractor will be responsible for all barricades and flagmen necessary to control traffic.



SECTION 02577 PATCHING OF ASPHALT CONCRETE PAVEMENTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for patching of asphalt concrete pavements. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphaltic Concrete:

2.1.1 Hot-Mixed, Hot-Mixed Asphaltic Concrete and Emulsified Asphalt shall comply with requirements of ASTM D 3515.

2.1.2 Plant-Mixed, Stockpiled Asphalt Cold Mixes shall comply with the requirements of Asphalt Institute Specification PM-2.

2.2 Bituminous Prime: Bituminous prime shall comply with ASTM D 2027.

2.3 Base Course: Base course material shall comply with local highway department specification for dense-graded, high-quality material.

2.4 Bituminous Tack Coat: Bituminous tack coat shall comply with ASTM D 2027.

3.0 EXECUTION:

3.1 Preparation of Areas for Patching:

3.1.1 Pot Holes: Trim the perimeter of each hole to a vertical face and back to well-compacted material. Remove material to a depth that provides a uniform well-compacted bottom surface. Remove all loose material resulting from trimming or otherwise existing in the hole. Areas to be repaired are to be dry before repair is started.

3.1.2 Alligator-Cracked and Rutted Areas: The pavement shall be sawed or cut with pavement breakers to a smooth vertical face 1 foot outside of the alligator-cracked areas. Unsatisfactory material shall be removed in a manner not to disturb the sides of the excavated area.

3.1.3 Slippage Areas: Saw a rectangular area around the slippage area that overlaps into the well-bonded material by at least 1 foot. The depth of the saw cut shall be equal to the thickness of the layer of material that is slipping. The surface where slipping is occurring shall be broomed clean and all loose material removed.

3.2 Installation:

3.2.1 Application Temperatures: Application temperatures for all asphalt material shall comply with provisions of the Asphalt Institute Publications and the applicable ASTM.

3.2.2 Base Course: Place base course material in layers not exceeding a compacted thickness of 6 inches. After placing, compact each layer by mechanical compactors to a density of not less than the density of the corresponding layer of the adjacent pavement structure.



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3.2.3 Prime Coat: Prime base course with MC-70 liquid asphalt at a rate of 0.20 to 0.30 gallon per sq. yd. Bolt excess prime with sand before the surfacing material is applied.

3.2.4 Tack Coat: Give the edges of existing asphaltic concrete or surfaces of Portland cement concrete and asphaltic concrete a tack coat of MC-70 liquid asphalt at a rate of 0.05 to 0.15 gallon per sq. yd. Allow the material to cure before placing the surfacing material.

3.2.5 Hot-Mixed Asphaltic Concrete: Place the material in layers not exceeding 2-1/2 inches in thickness and compact to a density equal to the density of the adjacent asphaltic concrete.

3.2.6 Stockpiled Cold Mixes: The compacted thickness of each layer of material shall not exceed 2 inches. Before compaction, the material shall be allowed to aerate, if necessary, until the proper amount of cohesion has developed to obtain adequate compaction. When more than one layer is used, each layer shall be thoroughly cured before the succeeding layer is placed.



SECTION 02578 SPRAY APPLICATIONS, SEAL COATS AND SURFACE TREATMENTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the spray applications, seal coats, and surface treatments of asphalt concrete pavements. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Bituminous Material: Bituminous material shall be liquid asphalt complying with ASTM D 2028, Grade RC-250, or tar complying with ASTM D 490, Grade RT-6.

2.2 Aggregate: Aggregates shall consist of crushed stone, crushed gravel, or crushed slag. The moisture content of the aggregate shall be such that the aggregate will be readily coated with the bituminous material. Aggregate gradations shall be in compliance with ASTM C 136.

2.3 Construction Equipment:

2.3.1 Bituminous Distributor shall be designed and equipped to distribute the bituminous material uniformly at even heat on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gal/sq yd with a pressure range of from 25 to 75 lb/sq in. and with an allowable variation from any specified rate not exceeding 5 percent.

2.3.2 Single-Pass Surface Treatment Machine shall be capable of distributing the bituminous material and aggregates uniformly in controlled amounts in a single-pass operation over the surface to be sealed.

2.3.3 Heating Equipment for Storage Tanks shall consist of steam coils, hot oil coils, or electrical coils. If steam or hot oil coils are used, the coils must be so designed and maintained that the bituminous material cannot become contaminated.

2.3.4 Power Rollers shall be the self-propelled tandem and three-wheel type rollers, weighing not less than 5 tons and shall be suitable for rolling bituminous pavements.

2.3.5 Self-Propelled Pneumatic-Tired Rollers shall have a total compacting width of not less than 60 inches. The gross weight shall be adjustable within the ranges of 200 to 350 lb/in. of compacting width.

2.3.6 Spreading Equipment: Aggregate spreading equipment shall be adjustable and capable of spreading aggregate at controlled amounts per square yard.

2.3.7 Drags: Broom drags shall consist of brooms mounted on a frame, designed to spread fine aggregate uniformly over the surface of a bituminous pavement. Towing equipment shall have pneumatic tires.

2.3.8 Brooms and Blowers shall be of the power type and shall be suitable for cleaning surfaces of bituminous pavements.

3.0 EXECUTION:

3.1 Preparation of Surface:



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3.1.1 Immediately Before Application of the Spray, all loose material, dirt, clay, or other objectionable material are to be removed from the surface with a power broom or blower supplemented with hand brooms. Correct all deficient areas such as pot holes, depressions, and excessive cracking.

3.1.2 Application of Bituminous Material: Immediately following the preparation of the surface, apply the bituminous material uniformly over the entire surface to be treated. All spots missed by the distributor shall be properly treated with bituminous material.

3.1.3 Application Temperature: Application temperatures for all materials shall comply with provisions of the Asphalt Institute Publications and the applicable ASTMs.

3.2 Installation:

3.2.1 Spreading Aggregate: Application of seal aggregate shall immediately follow the application of bituminous material, and in no case shall the time to application exceed 15 minutes.

3.2.2 Brooming and Rolling: Begin the rolling operations immediately following the application of cover aggregate. Rolling shall be accomplished with pneumatic-tired rollers; steel-wheeled rollers shall be used in a supplementary capacity only. All surplus aggregate shall be swept off the surface and removed not less than 24 hours or more than four days after rolling is completed.



SECTION 02579 SLURRY SEALS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for slurry seals for asphalt concrete pavements. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Project materials, design, material proportions, mix composition, and mix property requirements shall comply with current state slurry seal specifications.

3.0 EXECUTION:

3.1 Preparation of Surface:

3.1.1 Cleaning: Clean the existing surface prior to application of a tack coat or slurry seal mixture.

3.1.2 Repair: Repair all unsatisfactory or defective areas prior to application of a tack coat or slurry seal mixture.

3.1.3 Tack Coat: Apply a tack coat, with a bituminous distributor at the rate of 0.05 gal per sq yd., after the surface is repaired and cleaned. The tack coat shall consist of one part emulsion and three parts water and shall be the same type and grade emulsion as used in the slurry seal mixture. The tack shall be cured before application of the slurry seal mixture.

3.2 Installation:

3.2.1 Preparation and Application of Slurry Seal: Mix and apply the slurry seal mixture with a self-propelled continuous flow unit calibrated to accurately deliver and thoroughly mix the required proportion of aggregate, emulsion, water, and mineral filler. Total mixing time shall not exceed four minutes, and no violent mixing shall be permitted. A water fog spray shall immediately precede application of the slurry seal mixture. The slurry seal mixture shall show no signs of segregation during mixing or placing. The slurry seal mixture shall be free of uncoated or oversized aggregate, lumps, or premature breaking of the emulsion when placed. The average thickness of the cured slurry seal, when measured over the pavement surface, shall be 1/4 inch. The slurry seal minimum thickness shall not be less than 1/8 inch.

3.2.2 Drags: The drag shall be of a burlap material and shall be cleaned or replaced to prevent accumulations of slurry seal mix.

3.2.3 Rolling: Roll the slurry seal mix a minimum of five coverages with a pneumatic roller.

3.2.4 Curing: Protect the slurry seal mix from traffic until cured.

3.2.5 Correcting Deficient Areas: Any slurry seal that becomes contaminated, segregated, defective, or damaged before final acceptance by the Contracting Officer shall be removed and replaced by the Contractor.

3.3 Weather Limits: Air and pavement temperatures shall be 60 F and rising prior to the application of the slurry seal mixture.



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SECTION 02580 ASPHALT CURBS

1.0 DESCRIPTION OF WORK: This specification covers construction of asphaltic concrete curbs in conformity with the lines, grades, and dimensions shown on the plans or established by the Contracting Officer. The standard specification for highway construction for the state in which the project is located shall be considered the standard for material, equipment, details, and construction methods as supplemented hereafter.

2.0 PRODUCTS:

2.1 Asphalt Cement: ASTM D 946, penetration grade 60-70 or 85-100.

2.2 Coarse Aggregate: ASTM D 692.

2.3 Fine Aggregate: ASTM D 1073.

2.4 Mineral Filler: ASTM D 242.

2.5 Composition of Mixture: The asphaltic concrete mixture shall consist of aggregates, filler if needed, and asphalt cement combined in such proportions that the composition by weight of the finished mixture shall be within the limits specified by the state in which the project is located.

3.0 EXECUTION: The curb shall be placed in position on a primed surface by means of an approved automatic curb machine which shapes and compacts the mixture to the designated cross section. The placement temperature of the mixture shall be approximately 260 F. Any required joints shall be carefully made in such manner as to ensure a continuous bond between the old and new sections of the curb. The newly laid curb shall be protected from traffic by barricades or other suitable methods until the heat of the asphalt mixture has dissipated. Immediately after the asphalt curb has hardened, it shall be backfilled where required with suitable material.



SECTION 02581 COLD MILLING OF BITUMINOUS PAVEMENTS

1.0 DESCRIPTION OF WORK: This specification covers the removal of the existing bituminous surface by cold milling to the depths and limits shown on the drawings or as established by the Contracting Officer. It also includes the loading and stockpiling, if required, of the milled material.

2.0 PRODUCTS: (Section not used).

3.0 EXECUTION:

3.1 Equipment, Tools, and Machines:

3.1.1 Cold-Milling Machine: The cold-milling machine shall be a self-propelled machine capable of milling the pavement to a specified depth and smoothness. The milling machine shall have effective means of controlling transverse slope and controlling dust produced during the pavement milling operation. The milling machine shall not cause damage to any part of the pavement structure that is not to be removed.

3.1.2 Cleaning Equipment: All cleaning equipment shall be suitable for removing and cleaning loose material from the pavement surface.

3.2 Grade: The finished mill surfaces shall conform to the lines, grades, and cross sections indicated. Finished surfaces at a juncture with other pavements shall coincide with the finished surfaces of the abutting pavements.

3.3 Preparation of Surface: The pavement surface shall be cleaned of excessive dirt, clay, or other foreign material immediately prior to milling the pavement.

3.4 Milling Operation: Sufficient passes shall be made so that the designated area is milled to the grades and cross sections indicated. Any items, such as manholes, valve boxes, and utility lines, damaged or any pavement that is torn, gouged, broken, or undercut shall be repaired or replaced as directed by the Contracting Officer.

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SECTION 02582 BITUMINOUS REJUVENATION

1.0 DESCRIPTION OF WORK: This specification covers the rejuvenation of existing bituminous airfield pavements, roads, streets, parking areas, and other general applications by the use of a chemical rejuvenator.

2.0 PRODUCTS:

2.1 Rejuvenator: The asphalt rejuvenating agent shall be composed of a petroleum resin-oil base uniformly emulsified with water and shall conform to the following physical and chemical requirements:

Property	Test Method	Requirement
Viscosity, S.F. at 77 F, sec.	ASTM D 244	15-40
Residue, % (1)	ASTM D 244 (Mod.)	60-65(min.)
Sieve Test, %	ASTM D 244 (Mod.)	0.10 (max.)
Viscosity @ 140 F, centistokes (2)	ASTM D 2170	80-500
Flash Point, Cleveland		
Open Cup(COC), oF (3)	ASTM D 92	350 (min.)

(1) ASTM D 244 Modified Evaporation Test for percent residue is made by heating 50 gm samples to 300 F until foaming ceases; then cool immediately and calculate results.

(2) Viscosity on residue obtained from evaporation test.

(3) Flash point on residue from evaporation test.

2.2 Aggregate: Gradation of mineral aggregate shall meet the following requirements:

Sieve Designation	Percent by Weight Passing
No. 16	100
No. 30	40-75
No. 50	4-12
No. 100	0-5

3.0 EXECUTION:

3.1 Bituminous Storage Tanks shall be capable of heating the bituminous material under effective and positive control at all times to the required temperature.

3.2 Bituminous Distributor shall be designed and equipped to spray the bituminous material in a uniform double to triple lap at the temperature recommended by the manufacturer, at variable widths, and at readily determined and controlled rates from 0.04 to 0.2 gallons per square yard, plus or minus 5 percent.

3.3 Brooms and Blowers shall be of the power type.



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3.4 Preparation of Surface: Immediately before applying the rejuvenator, all loose material, dirt, clay, or other objectionable material shall be removed from the surface to be treated.

3.5 Application of Rejuvenator: The rejuvenator shall be uniformly applied over the surface at the approved rate with an allowable variation of plus or minus 20 percent. Materials shall be applied at the temperature recommended by the manufacturer.

3.6 Excess Rejuvenator Material: Approved mineral aggregate shall be provided by the Contractor and shall be spread in sufficient quantity to effectively blot up any excess rejuvenator material remaining on the treated pavement surface after 24 hours.

3.7 Insufficient Rejuvenator Material: When it is determined by the Contracting Officer that the actual application rate of the rejuvenator is more than 20 percent below the approved application rate, subsequent application(s) shall be made within 24 hours to ensure adequate penetration into the pavement surface.

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SECTION 02583 COLD MIX RECYCLING

1.0 DESCRIPTION OF WORK: This specification covers the cold mix recycling of existing paving and the addition of new materials, as required, or as directed by the Contracting Officer.

2.0 PRODUCTS:

2.1 Aggregates:

2.1.1 General: Aggregates shall consist of material obtained from milling, or removing and crushing the existing in situ material, and/or new aggregate material as needed.

2.1.2 Aggregate Quality and Gradation: Aggregate for bituminous mixture shall be of such size that the material can be spread with a paver to the desired thickness and compacted to meet the specified smoothness, grade, and density requirements. New aggregates shall be approved and be equal to or better than the reclaimed aggregate in quality. Maximum size of new aggregate shall not exceed one-half of the layer thickness and in no case shall the maximum aggregate size exceed 1 inch.

2.2 Bituminous Materials: Bituminous materials, if required, shall be an emulsified asphalt conforming to ASTM D 977 or ASTM D 2397, grade as required.

2.3 Job-Mix Formula: The Job-Mix Formula (JMF) for the recycled mixture will be furnished by the Contractor to the Contracting Officer. The formula will indicate a definite percentage of water and asphalt to be added to the mixture. The JMF will be allowed an asphalt content tolerance of 0.3 percent. The asphalt content may be adjusted by the Contracting Officer to improve paving mixture, without adjustment in contract unit price. When asphalt is added, the optimum asphalt content will be selected to provide the following properties when samples are compacted at 250 F with 75 blows of standard Marshall hammer on each side of the specimen.

Property	Requirement
Stability minimum, pounds	1,800
Flow maximum, 1/100-inch units	16
Voids in total mix, percent	3-5
Voids filled with bitumen, percent	70-80

The water content will be selected to provide maximum density when samples are prepared at the optimum asphalt content and compacted with 75 blows of Marshall hammer at ambient temperature. When no asphalt binder is added to the mixture, the water content will be selected by the Contracting Officer to provide maximum density.

3.0 EXECUTION:

3.1 Preparation of Bituminous Mixtures: The required amount of bituminous material for each batch, or calibrated amount of continuous mixing, shall be introduced into the mixer. Aggregates, asphalt emulsion, and water shall be mixed for 35 seconds or longer, as necessary, to thoroughly coat all particles with bituminous material. When longer mixing time is necessary, additional mixing time shall be determined by the Contracting Officer.



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3.2 Conditioning of Existing Surface: Ruts or soft yielding spots that appear in the existing pavement areas and deviations of surface from requirements specified shall be corrected. An asphalt tack coat shall be applied to all contact surfaces in advance of the recycled overlayment. The asphalt tack shall be placed at an asphalt residue coverage rate of 0.05 gal/sq. yd.

3.3 Placing:

3.3.1 Layer Thickness and Curing: Each layer of compacted mixture shall be no more than 2-1/2 inches in thickness; each layer of bituminous mixture shall be allowed to cure for at least 5 days before placing a succeeding layer.

3.3.2 Compaction of Mixture: Bituminous mixtures shall be rolled until all roller marks are eliminated and a density of at least 86 percent of the theoretical maximum density has been obtained when tested in accordance with MIL-STD-620, Method 101 or ASTM D 2041. When bituminous material is not added to the cold recycled mixture, the material shall be compacted to 100 percent of density determined by MIL-STD-621, Method 100, compaction effort designation CE-55.

3.3.3 Joints: Longitudinal joints shall be offset at least 1 foot from existing joints. Transverse joints shall be offset at least 2 feet from existing transverse joints.

3.3.4 Surface Smoothness: After final rolling, the pavement surface shall not vary in excess of 1/8 inch from a straightedge laid on the surface.

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SECTION 02584 CENTRAL PLANT HOT-MIX RECYCLING

1.0 DESCRIPTION OF WORK: This specification covers the central plant hot-mix recycling of existing asphalt concrete intermediate and wearing courses for airfields, heliports, and heavy-duty pavements. The specification also includes the addition of new materials, as required or as directed by the Contracting Officer.

2.0 PRODUCTS:

2.1 Aggregates:

2.1.1 General: Aggregates shall consist of material obtained from milling, or removing and crushing the existing in-situ material, and/or new aggregate material as needed.

2.1.2 Aggregate Quality and Gradation: Aggregate for the bituminous mixture shall be such size that the material can be spread with a paver to the desired thickness and compacted to meet the specified smoothness, grade, and density requirements. New aggregates shall be approved and shall be equal to or better than the reclaimed aggregate in quality. Maximum size of new aggregate shall not exceed one-half of the layer thickness, and in no case shall the maximum aggregate size exceed one inch. Aggregate gradations shall be as prescribed by local usage, with the approval of the Contracting Officer. In order to meet pollution requirements and ensure the recycled mixture is satisfactory, the amount of reclaimed asphalt pavement shall not exceed 60 percent for drum mixers or 50 percent for batch plants.

2.2 Mineral Filler shall conform to ASTM D 242.

2.3 Bituminous Materials:

2.3.1 New Asphalt Cement: The appropriate types and grades of bituminous materials for the anticipated use and climactic environment shall be used. Requirements of ASTM D 946 shall be used to specify penetration-graded asphalt cement, or ASTM D 3381 for viscosity-graded asphalt cement.

2.3.2 Recycled Asphalt Cement: The penetration of asphalt cement recovered from the recycled mixture shall be in accordance with ASTM D 1856 and shall have a penetration between 50 and 70 percent of that specified for the particular region for new asphalt cement, measured in accordance with ASTM D 5.

2.4 Job-Mix Formula (JMF): The JMF for the recycled mixture will be furnished by the Contractor to the Contracting Officer. The formula will indicate the percentage of reclaimed asphalt pavement, the percentage of bitumen, and the temperature of the completed mixture when discharged from the mixer. The requirements for stability, flow, and voids are shown in the following tables for nonabsorptive and absorptive mixtures, respectively.

Nonabsorptive-Aggregate Mixture

Property	Wearing Intermediate	
	Course	Course
Stability minimum, lbs	1,800	1,800
Flow maximum, 1/100-inch units	16	16
Voids total mix, percent	3-5	5-7
Voids filled with bitumen, percent	70-80	50-70



Absorptive-Aggregate Mixture

Property	Wearing Course	Intermediate Course
Stability minimum, lbs.	1,800	1,800
Flow maximum, 1/100-inch units	16	16
Voids total mix, percent	2-4	4-6
Voids filled with bitumen, percent	75-80	55-75

When the water-absorption value of the entire blend of aggregate does not exceed 2.5 percent, the aggregate is designated as nonabsorptive. When the water-absorption value exceeds 2.5 percent as determined by ASTM C 127 and ASTM C 128, the aggregate is designated as absorptive.

3.0 EXECUTION:

3.1 Preparation of Bituminous Mixtures: Aggregates, reclaimed asphalt pavement, mineral filler, bitumen, and recycling agent shall be conveyed into the mixer in proportionate quantities required to meet the JMF. Particles larger than 2 inches shall be removed from the reclaimed asphalt pavement prior to being added to the mixer. Mixing time shall be as required to obtain a uniform coating of the aggregate with the bituminous material. Temperature of bitumen at time of mixing will be specified by the Contracting Officer. Temperature of aggregate and mineral filler in the mixer shall not exceed 325 F when bitumen is added.

3.2 Surface Preparation of Underlying Course: Prior to placing of intermediate or wearing course, the underlying course shall be cleaned of all foreign or objectionable matter. The surface of previously constructed base course shall be sprayed with a prime coat at an asphalt residue coverage rate of 0.25 gal/sq. yd. Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin tack coat at an asphalt residue coverage rate of 0.05 gal/sq. yd.

3.3 Placing:

3.3.1 Layer Thickness and Curing: A required uncompacted thickness of intermediate course, 7 inches or less, may be spread and compacted in one layer. Where the required thickness of base is more than 7 inches, the mixture shall be spread and compacted in two or more layers. Each layer of compacted mixture for the surface course shall be no more than 2-1/2 inches in thickness. Each layer of bituminous mixture shall be allowed to cure for at least 5 days before placing a succeeding layer.

3.3.2 Compaction of Mixture: Rolling shall begin as soon after placing as the mixture will bear roller without undue displacement. After the Contractor is assured of meeting crown, grade, and smoothness requirements, rolling shall be continued until a mat density of 98 to 100.0 percent and a joint density of 96.5 to 100.0 percent of density is obtained. Places inaccessible to rollers shall be thoroughly compacted with hot hand tampers.

3.3.3 Joints: Longitudinal joints shall be offset at least 1 foot from existing joints. Transverse joints shall be offset at least 2 feet from existing transverse joints.

3.3.4 Surface Smoothness: After final rolling, the pavement surface shall not vary in excess of 1/8 inch from a straightedge laid on the surface.

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SECTION 02590 PAVEMENT MARKINGS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and replacement of pavement markings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Paint and reflective media shall be in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacturer, manufacturer's name, formulation number, and directions, all of which shall be plainly legible at time of use. The paint shall be homogeneous and easily stirred to smooth consistency. Paint that is older than one year shall not be used.

2.2 Paint:

2.2.1 Paint for Roads and Streets shall comply with Fed. Spec. TT-P-85, Type I or II; Fed. Spec. TT-P-115, Type I, II, or III; or with Fed. Spec. TT-P-1952.

2.2.2 Paint for Airfields shall comply with Fed. Spec. TT-P-85, Type I or II or with Fed. Spec. TT-P-1952.

2.3 Reflective Media for Roads and Streets shall comply with Fed. Spec. TT-B-1325, Type I, gradation A.

2.4 Thermoplastic Materials shall comply with AASHTO M 249.

2.5 Raised Pavement Markers shall comply with the Federal Highway Administration Manual on Uniform Traffic Control Devices:

2.5.1 Reflective Pavement Markers: Reflective pavement markers shall be of the prismatic reflector type, consisting of a high impact plastic shell filled with a mixture of inert thermosetting compound and filler material.

2.5.2 Nonreflectorized Pavement Markers: Nonreflective pavement markers shall consist of a heat fired, white, vitreous, ceramic base and a heat-fired, opaque, glazed surface to produce the properties in these specifications.

2.6 Adhesive for Installation of Raised Pavement Markers shall comply with AASHTO M 237.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Safety and Protection: Contractor shall assure the least possible obstruction to traffic.

3.1.2 Removal of Existing Pavement Marking: Remove paint, plastic markings, and raised markers by sandblasting, infrared heat, high pressure water, and water or scraping. Heat may be used to augment scraping; however, the underlying pavement shall not be burned.



3.2 Installation:

3.2.1 Thermoplastic Applicator: Utilize extrusion or spray application equipment for applying thermoplastic material to the pavement. The equipment shall provide for varying widths of traffic markings.

3.2.2 Bead Dispensers: Attach bead dispensers to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.

3.2.3 Tolerances in Dimensions and in Alignment: The length of the painted segment for skip stripe and the gap between segments may each vary plus or minus one foot, except that over-tolerance and under-tolerance lengths shall approximately compensate.

3.2.4 Protection: Adequate warning signs, flagmen, and necessary precautions for the protection of the wet paint and the safety of the public shall be provided. Cones, rubber "Z" guards or similar protective devices shall be placed along the newly painted stripe to prevent traffic from crossing the wet paint.

3.2.5 Corrective Measures: Stripes that fail to meet the specifications, including the permissible tolerances and the appearance requirements, or are marred or damaged by traffic or from other causes, shall be corrected. Drip and spattered paint shall be removed.

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SECTION 02661 WATER LINES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of water lines. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Piping for water service lines shall be galvanized steel, polyvinyl chloride (PVC) plastic, polyethylene, polybutylene, or copper tubing. Piping for water distribution and supply lines shall be ductile iron, polyvinyl chloride (PVC) plastic, filament-wound reinforced or centrifugally cast reinforced thermosetting resin, thermosetting reinforced plastic mortar pressure pipe, or reinforced concrete.

2.1 Copper Tubing: ASTM B 88, Type K, annealed, with compression pattern flared joints.

2.2 Ductile Iron Pipe: AWWA C151, 150 psi working pressure. Pipe shall be cement-mortar lined in accordance with AWWA C104. Joints shall conform to AWWA C111. Flanges shall conform to AWWA C115.

2.3 Polyvinyl Chloride (PVC) Plastic Pipe: All pipe, couplings, and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B, designated as PVC 1120 in ASTM D 1785.

2.3.1 Pipe Less Than 4 Inches in Diameter:

2.3.1.1 Screw Joint: ASTM D 1785, Schedule 80, with joints meeting requirements of 150 psi working pressure, 200 psi hydrostatic test pressure.

2.3.1.2 Elastomeric Gasket Joint: ASTM D 1785, Schedule 40, with joints meeting the requirements of 150 psi working pressure, 200 psi hydrostatic test pressure.

2.3.1.3 Solvent Cement Joint: ASTM D 1785 or D 2241, with joints meeting the requirements of 150 psi working pressure and 200 psi hydrostatic test pressure.

2.3.2 Pipe, 4-Inch through 12-Inch Diameter: Pipe, couplings, and fittings shall conform to the requirements of AWWA C900, Class 150, CIOD pipe dimensions, elastomeric gasket joint.

2.4 Reinforced and Prestressed Concrete Pipe: Steel cylinder reinforced concrete pipe shall conform to AWWA C300, C301, or C303 and shall be designed to withstand a working pressure of not less than 150 psi, with bell and spigot steel joints and gaskets.

2.5 Steel Pipe 3 Inches and Larger, not Galvanized: AWWA C200 with dimensional requirements as given in ANSI B36.10M for pipe 6 inches in diameter and larger, and ASTM A 53 for smaller sizes. Joints shall be mechanical, bell and spigot, or flanged. Pipe shall be coated with coal-tar primer followed by a hot coat of coal-tar enamel, a wrapper of asbestos felt impregnated with coal-tar, and a wrapper of kraft paper or a coat of water-resistant white wash.

2.6 Galvanized Steel Pipe, Less than 3 Inches: ASTM A 53, standard weight, screwed joints.

2.7 Polyethylene Plastic (PE) Pipe Less than 3 Inches in Diameter: Pipe, tubing, and heat fusion fittings shall conform to AWWA C901.



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2.8 Polybutylene Plastic (PB) Pipe Less than 3 Inches in Diameter: Pipe, tubing, and fusion fittings shall conform to AWWA C902.

2.9 Filament Wound Reinforced Thermosetting Resin Pipe (RTRP-I) for Lines 3 Inches and Larger: ASTM D 2996, normal working pressure of 150 psi at 73 F.

2.10 Centrifugally Cast Reinforced Thermosetting Resin Pipe (RTRP-II) for Lines 3 Inches or Larger: ASTM D 2997.

2.11 Reinforced Plastic Mortar Pressure (RPMP) Pipe for Lines 3 Inches or Larger: ASTM D 3517, bell and spigot type joints with elastomeric or mechanical gaskets.

2.12 Filament Wound and Centrifugally Cast Reinforced Thermosetting Resin Pipe and Reinforced Plastic Mortar Pressure Pipe: Pipe shall have a quick burst strength equal to or greater than four times the normal working pressure of the pipe. The quick burst strength test shall conform to the requirements of ASTM D 1599. Joints shall be bell and spigot type with elastomeric gaskets.

2.13 Valves:

2.13.1 Check Valves shall be designed for a minimum working pressure of 150 psi. Valves 2 inches and smaller shall be all bronze with screwed fittings and shall conform to MSS SP-80, Class 150, Types 3 and 4. Valves larger than 2 inches shall be iron body, bronze-mounted with flanged ends, and non-slam type. Flanges shall be the 125-pound type conforming to ANSI B16.1.

2.13.2 Gate Valves shall be designed for a working pressure of not less than 150 psi. Valves smaller than 3 inches shall be all bronze and shall conform to MSS SP-80, Type 1, Class 150. Valves 3 inches and larger shall be iron body, bronze-mounted, and shall conform to AWWA C500.

2.13.3 Rubber-Seated Butterfly Valves shall conform to the performance requirements of AWWA C504.

2.13.4 Indicator Post for Valves shall conform to the requirements of NFPA No. 24.

2.14 Fire Hydrants: AWWA C502 or C503.

2.15 Fire Hydrant Hose Houses: NFPA No. 24.

2.16 Disinfection Materials: Liquid chlorine conforming to AWWA B301 or calcium or sodium hypochlorite conforming to AWWA B300.

3.0 EXECUTION:

3.1 Installation:

3.1.1 Water Lines shall not be laid in the same trench with sewer lines, gas lines, fuel lines, or electric wiring.

3.1.2 Copper Tubing shall not be installed in the same trench with ferrous piping materials.

3.1.3 Roads, Railroads, and Airfields: Sleeves under railroads shall be in accordance with the criteria contained in the Manual for Railway Engineering of the American Railway Engineering Association. Where sleeves are required in all other cases, the pipe sleeve shall be rigid conduit and shall have a

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minimum clearance of at least 2 inches between the inner wall of the sleeve and the maximum outside diameter of the sleeved pipe and joints shall be provided.

3.1.4 Structures: Where water pipe is required to be installed within three feet of existing structures, the water pipe shall be sleeved as required for roads, railroads, and airfields.

3.2 Joint Deflection:

3.2.1 Ductile Iron Pipe: The maximum allowable deflection will be as given in AWWA C600.

3.2.2 Flexible Plastic Pipe: Maximum offset in alignment between adjacent pipe joints shall not exceed 5 degrees.

3.2.3 Reinforced Concrete Pipe: Maximum allowable deflections from a straight line or grade, as required by vertical curves, horizontal curves, or offsets, will be 5 degrees.

3.2.4 Steel Pipe: For pipe with bell and spigot rubber gasket joints, maximum allowable deflections from a straight line or grade, as required by vertical curves, horizontal curves, or offsets will be 5 degrees.

3.3 Placing and Laying:

3.3.1 The Following Codes shall govern pipe installations: RTRP, ASTM D 3839; PE and PB, ASTM D 2774; PVC, AWWA M23.

3.3.2 Pipe Passing Through Walls of valve pits and structures shall be provided with cast-iron wall sleeves.

3.4 Service Lines: Service lines 2 inches and smaller shall be connected to the main by a directly tapped corporation stop or by a service clamp. A corporation stop and a copper gooseneck shall be provided with either type of connection. Service lines 1-1/2 inches and smaller shall have a service stop. Service lines 2 inches or larger shall have a gate valve.

3.5 Setting of Fire Hydrants: Each hydrant shall be connected to the main with a 6-inch branch line having at least as much cover as the distribution main. Not less than 7 cubic feet of free draining broken stone or gravel shall be placed around and beneath the waste opening of dry barrel hydrants to ensure drainage.

3.6 Thrust Blocks: Plugs, caps, tees, and bends deflecting 22-1/2 degrees or more, either vertically or horizontally, on waterlines 6 inches in diameter or larger, and fire hydrants shall be provided with thrust blocking or metal tie rods and clamps or lugs.

3.7 Hydrostatic Tests: The pipeline shall be subjected to both a pressure test and a leakage test.

3.7.1 Pressure Test: After the pipe has been installed and the trench has been partially backfilled, leaving the joints exposed for examination, the pipe shall be filled with water in a manner to expel all air. The pipeline shall be subjected to a test pressure of 100 psi or 150 percent of the working pressure, whichever is greater, for a period of at least one hour.

3.7.2 Leakage Test: A standard one-hour leakage test shall be performed subsequent to or concurrently with the pressure test and shall meet an allowable leakage rate according to the following formula:

$$L = NDP/K, \text{ where}$$



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L equals the allowable leakage in gallons per hour, N is the number of field joints in the length of pipeline tested, D is the nominal diameter of the pipe in inches, P is the square root of the average test pressure in psig, and K is equal to 7,400.

3.8 Disinfection: Each unit of completed water line shall be disinfected as prescribed by AWWA C651.



SECTION 02665 WATER RESERVOIRS AND TANKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of elevated water tanks, ground level water tanks, and standpipes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Standpipe, elevated steel water tank, or storage reservoir shall be in accordance with the applicable requirements of AWWA D100 and AWWA D102, except as modified herein.

2.1 Bolts, Anchor Bolts, and Rods for Welded Steel Tanks: ASTM A 307; galvanizing shall conform to ASTM A 153.

2.2 Reinforcing Steel: ASTM A 615, ASTM A 616, or ASTM A 617.

2.3 Plates: ASTM A 36.

2.4 Tubular Shapes: ASTM A 500, Grade B, for cold-formed; ASTM A 501 for hot-formed.

2.5 Design Loads: The following loads shall be considered in the design of tank structures and foundations:

- a. Dead Loads: The unit weights for steel shall be 490 pcf and 144 pcf for concrete.
- b. Live Load: Live load shall be the weight of all liquid when the tank is filled to just overflowing.
- c. Wind Load and Snow Load: The elevated tank shall be designed according to ANSI A58.1 for a wind speed of 100 mph and for a snow load of 25 psf.

3.0 EXECUTION:

3.1 Foundations for the standpipe, reservoir, tank columns and riser, and for the valve chamber shall be constructed of concrete, reinforced where necessary, and designed in accordance with Section 12 of AWWA D100 except as shown or specified herein. Footings shall be designed in accordance with ACI 318 and constructed in conformance with the applicable requirements of SECTION: CONCRETE. The foundation for the reservoir shall be composed of a concrete ring at base of reservoir with bed of gravel under bottom of reservoir. After concrete ring walls are constructed, the gravel fill shall be placed to thickness shown on plans. Well-graded gravel or crushed stone, not exceeding 2 inches in size with no more than 5 percent passing the No. 200 sieve, shall be placed and thoroughly tamped or rolled at a moisture content that will yield a maximum density for the type of compaction equipment used. The material shall have a crowned surface of 1 inch vertical to 10 feet horizontal as a minimum to allow for the settlement and to ensure that tank bottom will be approximately level.

3.2 Anchors: A sufficient number of anchors, designed to prevent overturning of the standpipe, reservoir, or elevated storage tank, when empty, shall be installed. The anchors shall be not less than 1-1/4 inches in diameter and shall be set deep enough to resist the computed uplift. The anchors shall be bent 90 degrees for anchorage in the concrete, or they shall be provided with anchor plates which may be made of scrap plates or structural steel channels. The anchor bolts shall be attached to the cylinder or anchor plates by means of properly designed lugs made of structural steel shapes or bent plates. Factor of safety on



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overturning under design wind load shall be 1.33 minimum. An inverted truncated pyramid of earth with 2 on 1 side slopes above top of footing may be used in determining overturning stability.

3.3 Test of Valves and Piping: After the tank has been erected and the valves and piping installed and before field painting is begun, the valves and piping shall be subjected for 1 hour to a hydrostatic pressure test of 1.33 times the anticipated static pressure at the points of reading when the system is put into operation.

3.4 Disinfection: Comply with requirements of AWWA C652.



Section 02666 Chilled Water Lines

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of chilled water lines. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Piping and Fitting for Chilled Water Lines:

2.1.1 Pipes to 4 Inches: Steel, welded, Schedule 40, ASTM A 53.

2.1.2 Pipes 6 to 16 Inches: Steel, seamless or ERW, standard weight, ASTM A 53.

2.1.3 Fittings to 1-1/2 Inches: MI, 150-pound, ASTM A 197, screwed ends ANSI B16.3.

2.1.4 Fittings 2 to 16 Inches: Steel, seamless, standard weight, ASTM A 234, butt weld ends, ANSI B16.9.

2.1.5 Unions to 2 Inches: MI, 150-pound, ASTM A 197, screwed ends, brass-to-iron seats.

2.1.6 Unions 2-1/2 to 16 Inches: Flanged.

2.1.7 Flanges 16 Inches and Under: Steel, ASTM A 105 or A 181, 150-pound, slip-on or welding neck type, ANSI B16.5.

2.1.8 Gaskets-Water Service: Red rubber sheet, 1/16 inch thick, ring or full face as required, ASTM D 2000.

2.1.9 Gaskets-Air Service: Compressed asbestos, 1/16 inch thick, ring or full-faced as required, ASTM F 104.

2.2 Shutoff Valves for Chilled Water Lines:

2.2.1 Gate Valves: MSS SP-80. Size 1/4 to 2 inches shall be screwed ends with bronze body. Size 2-1/2 to 16 inches shall be flanged ends with cast-iron body.

2.2.2 Butterfly Valves: AWWA C504. Size 3 to 16 inches, wafer-flanged ends with cast-iron body.

2.3 Control Valves for Chilled Water Lines:

2.3.1 Globe Valves: MSS SP-80. Size 1/4 to 2 inches shall be screwed ends with bronze body. Size 2-1/2 to 10 inches shall be flanged ends with cast-iron body.

2.3.2 Angle Valve: MSS SP-80. Size 1/4 to 2 inches shall be screwed ends with brass body. Size 2-1/2 to 14 inches shall be flanged ends with cast-iron body.

2.3.3 Butterfly Valve: AWWA C504. Size 3 to 16 inches shall be wafer-flanged with cast-iron body.



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2.4 Check Valves for Chilled Water Lines: MSS SP-80-Class 150, Types 3 & 4. Swing valves shall be size 1/4 to 2 inches, screwed ends with bronze body or size 2-1/2 to 16 inches, flanged ends with bronze body (ASME B16.1, Class 125).

2.5 Preinsulated Pipe Materials:

2.5.1 Foam Insulation: ASTM C 1029. Factory-applied polyurethane foam insulation shall completely fill the annular space between carrier pipe and jacket.

2.5.2 Jacketing Material: Material shall be extruded white polyvinylchloride, conforming to ASTM D 1784.

2.5.3 Joints shall be insulated with polyurethane foam, jacketed with PVC sleeves, and sealed with heat-shrinkable tape.

2.5.4 Fittings shall be insulated with polyurethane foam and jacketed with PVC fittings.

3.0 EXECUTION:

3.1 Preparation: The trench bottom shall be stabilized by overexcavating 6 inches and replaced by fine graded earth or sand. After pipe is assembled in place and prior to testing, a partial backfill shall be accomplished by tamping fine graded earth or sand around the pipe in 6-inch layers to a minimum of 6 inches above the jacket, leaving joints exposed for visual inspection during hydrostatic testing.

3.2 Testing: The joints of the chilled water lines shall be exposed for visual inspection during hydrostatic testing. After testing is complete, joints shall be covered in a similar manner and backfill operation shall proceed.

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SECTION 02670 WELL REPAIR

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of water wells. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Repair and Replacement Parts shall be clean, free of rust and scale, and of proper size and design for the specific well repair to be made.

3.0 EXECUTION:

3.1 Cement Grout may be hand mixed at the site.

3.2 Level and Re-Sod Area, after heavy equipment has been used or if chemicals have been spilled.

3.3 Abandoned Wells shall be sealed in accordance with AWWA A100.

3.4 Disinfect well, after repair, in accordance with AWWA A100.



SECTION 02672 WATER WELLS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for drilled and gravel packed water wells. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the American Water Works Association (AWWA) standards and the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Casings:

2.1.1 Carbon Steel: ASTM A 53 and ASTM A 139.

2.1.2 Stainless Steel: ASTM A 409.

2.1.3 Plastic: ASTM F 480.

2.2 Screens: Stainless Steel ASTM A 304.

2.3 Gravel Packs: AWWA A100, Sections 6.3, 6.4, and 6.5.

2.4 Sealing Grout: AWWA A100, Sections 7.2 and 7.3.

3.0 EXECUTION:

3.1 General: Construction shall be in accordance with the latest edition of AWWA A100 in its entirety including appendices. The standard shall not only cover 8-inch drilled wells and gravel packed wells but the criteria shall also be applied to 4-inch to 6-inch diameter wells.

3.2 Drilling: The method of drilling shall be approved by the Contracting Officer.

3.3 Drilling Samples: Samples of formations shall be retained by the Contractor during drilling with full access by the Contracting Officer. Additional samples shall be taken as directed by the Contracting Officer. Drilling samples shall be delivered to the Government at the completion of the well installation as directed.

3.4 Reports: Geophysical logging and drillers log report shall be required as directed by the Contracting Officer.

3.5 Casing Size: Casing diameter and wall thickness shall be as determined by Tables 2 and 3 of AWWA A100 but in no case shall the wall thickness be less than 1/4 inch (or Schedule 40 for 4-inch pipe).

3.6 Screen Size: The screen diameter, length, and grid openings shall be as required by the aquifer but in no case shall the entrance velocity exceed 1.5 fps. Screen construction shall be approved by the Contracting Officer.

3.7 Constant Flow Rate: The Contracting Officer will determine the constant flow rate test level based on information from the step-drawdown tests considering the recommendation of the Contractor.

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SECTION 02685 GAS DISTRIBUTION LINES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of gas distribution lines. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Piping for Gas Distribution Lines: Piping shall be steel, Schedule 40, ASTM A 53 or polyethylene, ASTM D 1248 and ASTM D 2513. Pipe designations shall be PE 2306 and PE 3306, designated for gas distribution.

2.2 Fittings for Steel Pipe:

2.2.1 Threaded: Fed. Spec. WW-P-521, Type I, black.

2.2.2 Welded: Butt-welded fittings shall conform to ANSI B16.9. Socket welded fittings shall conform to ANSI B16.11.

2.2.3 Flanged: ANSI B16.5.

2.2.4 Pipe Threads: ASME B1.20.1.

2.3 Valves: Steel Valves 1-1/2 inch and smaller installed underground shall conform to MSS SP-84, carbon steel, socket weld ends, with square wrench operator adaptor. Steel Valves 1-1/2 inch and smaller installed above ground shall conform to MSS SP-84, carbon steel, socket weld or threaded ends with handwheel or wrench operator. Steel valves 2 inches and larger installed under ground shall conform to API Spec 6D, carbon steel, butt welded ends class [] with square wrench operator adaptor. Steel valves 2 inches and larger installed above ground shall conform to API Spec 6D with handwheel or wrench operator.

Polyethylene valves shall conform to ASME B1.40. Polyethylene valves sizes 1/2 inch to 6 inch may be used in polyethylene distribution and service lines in lieu of steel valves for underground installation only.

2.4 Protective Covering for Underground Steel Pipe: A coat of coal-tar primer, a coat of coal-tar enamel, a wrapper of coal-tar saturated felt, and a wrapper of kraft paper or a coat of water-resistant whitewash shall be applied in accordance with the requirements of AWWA C203.

3.0 EXECUTION:

3.1 Gas Lines: Plastic pipe shall not be installed above ground, in distribution systems that exceed 50 psig, or where operating temperatures of the materials will be below -20 F or above 100 F.

3.2 Installation of Gas Lines shall be in conformance with ANSI B31.8 and, where applicable, IAPMO IS-10.

3.3 Gas Mains shall have a minimum cover of 24 inches, and service lines shall have a minimum cover of 18 inches.

3.4 A Single Conductor No. 14 AWG Wire with type TW insulation shall be installed with plastic pipe to facilitate pipe locating.

3.5 Tests: The distribution system of gas mains and gas service lines shall prove gas-tight by air test under a pressure of 75 psig or not less than 1-1/2 times the operating pressure, whichever is greater.

3.5.1 Test of Gas Mains: The test shall continue for at least 24 hours from the time of the initial readings to the final readings of pressure and temperature. The initial test readings shall not be made for at least one hour after the pipe has been subjected to the full test pressure. The testing instruments shall be approved and subject to inspection at all times during the test.

3.5.2 Test of Service Lines: Service lines shall be tested in accordance with ANSI B31.8.



Section 02710 Foundation Drainage Systems

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of foundation drainage systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Clay Pipe: ASTM C 700.

2.2 Perforated Clay Pipe: ASTM C 700.

2.3 Concrete Pipe: ASTM C 14.

2.4 Perforated Concrete Pipe: ASTM C 14 with perforations conforming to ASTM C 444.

2.5 Porous Concrete Pipe: ASTM C 654.

2.6 Clay Drain Tile: ASTM C 4.

2.7 Perforated Clay Drain Tile: ASTM C 498.

2.8 Concrete Drain Tile: ASTM C 412.

2.9 Cast-Iron Soil Pipe: ASTM A 74.

2.10 Perforated Corrugated Steel Pipe: ASTM A 760.

2.11 Perforated Corrugated Aluminum Alloy Pipe: ASTM B 745 - Type III, Class [I][II].

2.12 Perforated Bituminized-Fiber Pipe: ASTM D 2311 or D 2417.

2.13 Perforated Corrugated Polyethylene Drainage Tubing: Soil Conservation Service, Engineering Standard 606.

2.14 Acrylonitrile-Butadiene-Styrene (ABS) Pipe: ASTM D 2751, with a maximum SDR of 35.

2.15 Polyvinyl Chloride (PVC) Pipe: ASTM D 3034, with maximum SDR of 35, and with flexible elastomeric seal joint.

2.16 Fittings: Fittings shall be of compatible materials for pipe.

2.17 Cleanouts: Cleanout pipe and fittings and piping through walls and footings shall be cast-iron soil pipe. Each cleanout shall have a brass ferrule and cast-brass, screw-jointed plug with socket or raised head for wrench.

2.18 Cover and Wrapping Materials for Open Joints in Drain Tile: Tar paper, roofing paper, reinforced building paper, glass fiber fabric, or other similar type material. Wrapping material shall be 18 x 14 mesh, 0.01-inch diameter nonferrous wire cloth.



3.0 EXECUTION:

3.1 Trenches shall be kept dry during installation of drainage system. Changes in direction of drain lines shall be made with 1/8 bends. Wye fittings shall be used at intersections.

3.2 Bedding: Graded bedding, minimum 6 inches in depth, shall be placed in the bottom of trench for its full width and length. Except for recesses for bell joints, the bedding shall fully support the lower quadrant of the pipe.

3.3 Pipe Laying: Drain lines shall be laid to true grades and alignment with a continuous fall in the direction of flow. Bells of pipe sections shall face upgrade. Perforated pipe shall be laid with perforations facing down.

3.4 Joints:

3.4.1 Perforated and Porous Types of Drain Pipes shall be laid with closed joints.

3.4.2 Non-Perforated and Plain-End Drain Tile shall be laid with 1/8-inch to 1/4-inch open joints. Open joints shall be covered or wrapped.

3.4.3 Joints of Concrete or Clay Sewer Pipe shall be caulked with oakum and filled solid with cement mortar.

3.4.4 Joints of Cast-Iron Pipe or connections between cast-iron and porous concrete pipes shall be caulked with oakum gasket and filled with lead.

3.4.5 Perforated Bituminized-Fiber Pipe Joints in which pipe ends and couplings are tapered shall have a tight-driven fit. Approved split-collar couplings may be used with square-end pipe.

3.4.6 Plain-End Perforated Clay Drain Tile Joints shall be made with spring-wire clips, coated with a rust preventive that will maintain a taut but elastic joint between sections when laid.

3.4.7 Acrylonitrile-Butadiene-Styrene (ABS) Pipe shall be jointed using solvent cement or elastomeric joints.

3.4.8 Polyvinyl Chloride (PVC) Pipe Joints shall be in accordance with ASTM D 3212.

3.5 Outlet Lines: The outlet end of drain lines connecting with an open gutter or outfall shall be covered with a removable wire basket of copper or bronze wire cloth.

3.6 Backfilling: After joints and connections have been inspected and approved, pervious backfill material shall be placed on each side of the pipe or tile and 12 inches above the top of the pipe as shown for the full width of the trench. A protective covering shall be placed over the pervious backfill for the full width of the trench before regular backfill is placed.

3.7 Cleanouts in Unpaved Areas shall be set in 12-inch by 12-inch by 4-inch concrete blocks.



Section 02712 Underslab Drainage

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of underslab drainage. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Pipe shall conform to ASTM C 14.

2.2 Clay Pipe shall conform to ASTM C 700.

2.3 Perforated Clay Pipe shall conform to ASTM C 700. Clips for plain-end pipe shall be constructed of not smaller than No. 9 hard-drawn or oil-tempered steel wire conforming to ASTM A 227 or A 229, and shall be coated with an approved rust preventive coating.

2.4 Perforated Concrete Pipe shall conform to ASTM C 444 and to ASTM C 14.

2.5 Perforated Bituminized Fiber Pipe and Couplings shall conform to ASTM D 2418.

2.6 Perforated Corrugated Steel Pipe shall conform to ASTM A 760.

2.7 Perforated Corrugated Steel Pipe, Fully Bituminous-Coated shall conform to ASTM A760, Type III, with coating conforming to AASHTO M 190, Type A.

2.8 Drain Tile: Clay drain tile shall conform to ASTM C 4. Concrete drain tile shall conform to ASTM C 412.

2.9 Porous Concrete Pipe shall conform to ASTM C 654.

2.10 Galvanized Bituminous-Coated, Semicircular Steel Pipe shall conform to ASTM A 444. Bituminous coating shall be in accordance with AASHTO M 190, Type A.

2.11 Perforated Corrugated Aluminum Alloy Pipe shall conform to ASTM B 745, Type III, Class [1][2].

2.12 Perforated Corrugated Aluminum Alloy Pipe, Fully Bituminous-Coated shall conform to ASTM B 745, Typw III, Class [1][2] with coating conforming to AASHTO M 190, Type A.

2.13 Precoated Corrugated Steel Pipe shall conform to ASTM A 762, Type III.

2.14 Acrylonitrile-Butadiene-Styrene (ABS) Piping shall conform to ASTM D 2751.

2.15 Polyvinyl Chloride (PVC) Pipe and Fittings shall conform to ASTM D 3034, Type PSM, with flexible elastomeric seal joint.

2.16 Filter Fabric shall be a pervious sheet of polyester, nylon, or polypropylene filaments woven or otherwise formed into a uniform pattern with distinct and measureable openings. The fabric shall be constructed so that the filaments will retain their relative position with respect to each other.



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2.17 Drainage Structures: Concrete shall have a minimum strength of 3,000 psi and an air content of 3 to 6 percent. Concrete cover over reinforcing shall be in conformance with ACI 318. Expansion joint filler material shall conform to ASTM D 1751 or D 1752. Mortar shall be composed by volume of one part Portland Cement and two parts sand.

2.18 Precast Reinforced Concrete Manhole Risers and Tops shall conform to ASTM C 478.

2.19 Precast Concrete Segmental Blocks shall conform to ASTM C 139.

2.20 Precast Concrete Manhole Bases shall conform to ASTM C 478.

2.21 Brick shall conform to ASTM C 62 or ASTM C 55.

2.22 Prefabricated Corrugated Metal: Steel manholes and risers shall be fabricated of galvanized and bituminous coated corrugated metal.

2.23 Frames and Covers or Gratings shall be cast gray iron, ASTM A 48, Class 35B or ductile iron, ASTM A 536, Grade 65-45-12.

2.24 Ladders or Ladder Rungs shall be fabricated of cast iron, wrought iron, or galvanized steel.

2.25 Subdrain Filter and Bedding Material shall be washed sand, sand and gravel, crushed stone, crushed stone screenings, or slag composed of hard, tough, durable particles free from adherent coatings.

3.0 EXECUTION:

3.1 Manholes shall be installed complete with frames, ladders, and covers or gratings.

3.2 Filter Fabric: One layer of filter fabric shall be wrapped around open joints and perforated or slotted collector pipes. Trenches to be lined with filter fabric shall be graded to obtain smooth side and bottom surfaces so that the fabric will not bridge cavities in the soil or be damaged by projecting rock.

3.3 Pipelaying: The laying of pipe shall proceed upgrade beginning at the lower end of the pipeline. Pipe shall not be laid in water. Pipe shall be bedded to the established gradeline. Perforations shall be centered on the bottom of the pipe.

3.4 Jointing:

3.4.1 Nonperforated Concrete and Clay Pipe: Pipe shall be laid with 1/8- to 1/4-inch openings between ends of pipe.

3.4.2 Perforated Concrete and Clay Pipe: Pipe shall be laid with closed joints. Plain-end perforated clay pipe sections shall be fastened together with spring wire clips furnished by the pipe manufacturer.

3.4.3 Perforated Bituminized-Fiber Pipe: Pipe shall be installed with either a tapered coupling or a split-collar coupling.

3.4.4 Perforated Corrugated Metal Pipe, or Unpaved Bituminous-Coated, Perforated Corrugated Metal Pipe: The sections of pipe shall be securely fastened together with standard connecting bands furnished by the manufacturer of the pipe.

3.4.5 Drain Tile: Drain tile shall be laid with open joints of approximately 1/8-inch width but not over 1/4-inch width.

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3.4.6 Porous Concrete Pipe: Pipe shall be installed with mortar joints.

3.4.7 Bituminous-Coated or Uncoated Semicircular Steel Pipe: Coupling bands shall consist of uncorrugated top and bottom sections bolted together with four bolts.

3.4.8 Bituminous-Coated or Uncoated Corrugated Aluminum Pipe: Use standard connecting bands furnished by the pipe manufacturer.

3.4.9 Acrylonitrile-Butadiene-Styrene (ABS): Solvent cement or elastomeric joints for ABS pipe shall be in accordance with ASTM D 2751.

3.4.10 Polyvinyl Chloride (PVC) Pipe: Joints shall be in accordance with the requirements of ASTM D 3212.

3.5 Backfilling: Filter material shall be placed around and over the pipe. The remainder of the trench shall be filled with overlying backfill material.



Section 02720 Storm Drains

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of storm drains. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Reinforced Concrete Pipe: ASTM C 76 or AASHTO M 170.

2.2 Reinforced Concrete Arch Culvert and Storm Drainpipe: ASTM C 506.

2.3 Reinforced Concrete Elliptical Culvert and Storm Drainpipe: ASTM C 507.

2.4 Nonreinforced Concrete Pipe: ASTM C 14 or AASHTO M 86, Class 1, Class 2, Class 3.

2.5 Reinforced Concrete Box Sections: ACI 346.

2.6 Clay Pipe: AASHTO M 65 or ASTM C 700.

2.7 Corrugated Steel Pipe, Pipe Arch, and Couplings: Pipe and couplings shall conform to ASTM A 760.

2.8 Structural-Plate Steel Pipe, Pipe Arches, and Arches: Plate and bolted assembly shall conform to AASHTO M 167, coating shall conform to AASHTO M 190 Type A or AASHTO M 243.

2.9 Corrugated Aluminum Alloy Pipe, Pipe Arch, and Underdrains: Pipe shall conform to AASHTO B 745.

2.10 Structural-Plate Aluminum Pipe, Pipe Arches, and Arches: Plate and bolted assembly shall conform to AASHTO M 219, coating shall conform to AASHTO M 190 Type A or AASHTO M 243.

2.11 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings: ASTM D 2751.

2.12 Reinforced Plastic Mortar (RPMP) Sewer Pipe: ASTM D 2992.

2.13 Precast Reinforced Concrete Manholes: ASTM C 478 or AASHTO M 199.

2.14 Reinforced Plastic Mortar (RPM) Manholes: ASTM D 3840.

2.15 Corrugated Polyethylene (PE) Plastic Manholes: ASTM D 3753.

2.16 Glass Fiber-Reinforced Polyester Manholes: ASTM D 3841.

2.17 Prefabricated Corrugated Metal Inlets and Manholes: Manholes and inlets shall be complete with frames and covers, or frames and gratings.

2.18 Manhole Ladders or Steps shall be fabricated of steel or heavy-duty aluminum, minimum 16 inches in width with 3/4-inch diameter or square rungs on 12-inch centers. Steel ladders and inserts shall be galvanized after fabrication.

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2.19 Precast Concrete Segmental Blocks shall conform to ASTM C 139, and shall be not more than 8 inches thick nor less than 8 inches long.

2.20 Brick shall conform to ASTM C 62, Grade SW; ASTM C 55, Grade S-I or S-II, or ASTM C 32, Grade MS. Brick structures shall be plastered with 1/2-inch of mortar over the entire outside surface of the walls.

2.21 Walls and Headwalls shall be reinforced concrete, plain concrete, or steel sheeting as indicated.

2.22 Flared End Sections shall be a standard design with pipe manufacturer and manufactured of the same material as specified for the pipe.

2.23 Concrete for Structures: ACI 318.

2.24 Mortar shall be composed of Portland cement, Portland blast-furnace slag, Portland-pozzolan, or masonry cement, as available.

3.0 EXECUTION:

3.1 Excavation:

3.1.1 Trenches: Except where banks are cut back on a stable slope, excavation for trenches shall be sheeted, braced, and shored as necessary for proper laying of pipe. Care shall be taken not to overexcavate. Remove stones as necessary to avoid point bearing.

3.1.2 Storm Sewers: The width of the trench at and below the top of the pipe shall be such that the clear space between the barrel of the pipe and the trench wall shall not exceed 8 inches on either side of the pipe. The width of the trench above that level shall be as wide as necessary for sheeting and bracing and the proper performance of the work.

3.1.3 Appurtenances: Excavation for manholes and similar structures shall be sufficient to leave at least 12 inches in the clear between the outer surfaces and the embankment or timber that may be used to hold and protect the banks.

3.2 Backfilling:

3.2.1 Trenches: Backfill trenches to finish grade with satisfactory materials. Replace pavement, base course, and compact subgrade disturbed by trenching operations in an acceptable manner with materials equal to the adjacent compacted subgrade, base course, and pavement for a minimum distance of 12 inches on each side of the trench and conform to the requirements hereinafter specified.

3.2.2 Lower Portion of Trench: Deposit backfill material in 6-inch maximum thickness layers and compact with suitable tampers to the density of the adjacent soil until there is a cover of not less than 24 inches over lines, unless otherwise noted. The backfill material in this portion of the trench shall be free from stones larger than 3 inches in any dimension and hard clods and conglomerates larger than 6 inches in any dimension.

3.2.3 Remainder of Trench: Except for special materials for pavements and railroads, backfill the remainder of the trench with material that is free of stones larger than 6 inches or 1/2 the layer thickness, whichever is smaller, in any dimension. Deposit backfill material in layers not exceeding the thickness specified.

3.3 Installation:



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3.3.1 General: Under no circumstances shall pipe be laid in water. No pipe shall be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary.

3.3.2 Plastic Pipe and Manholes: Install plastic pipe and manholes in compliance with ASTM D 2321, ASTM D 3753, and ASTM D 3839.

3.3.3 Concrete and Clay Pipe: Laying shall proceed upgrade with spigot ends of bell and spigot pipe and tongue ends of tongue and groove pipe pointing in the direction of the flow.

3.3.4 Circular Concrete Pipe with Elliptical Reinforcing: Placement shall be such that reference lines designating top of pipes will not be more than 5 degrees from the vertical plane through the longitudinal axis of the pipe.

3.3.5 Corrugated Metal Pipe and Pipe Arch: Laying shall be with the separate sections joined firmly together with the outside laps of circumferential joints pointing upstream and with longitudinal laps on the sides. Suitable markings or properly placed lifting lugs shall be provided to ensure placement of factory elongated pipe in a vertical plane.

3.3.6 Structural-Plate Steel Pipe, Pipe Arches, and Arches: Tighten bolts on each section progressively and uniformly, starting at one end of the structure after all plates are in place. Repeat the operation to ensure that all bolts are tightened to meet the torque requirement of 200 foot-pounds, plus or minus 50 foot-pounds.

3.3.7 Structural-Plate Aluminum Pipe, Pipe Arches, and Arches: Tighten bolts on each plate progressively and uniformly, starting at one end of the structure after all plates are in place. Repeat the operation to ensure that all bolts are torqued to a minimum of 100 foot-pounds on aluminum alloy bolts and a minimum of 150 foot-pounds on galvanized steel bolts.

3.3.8 Manhole Ladders: Install manhole ladders when the manhole depth exceeds 12 feet. Anchor ladders adequately to the wall by means of steel inserts spaced not more than 6 feet apart vertically. Provide at least 6-1/2 inches of space between wall and inside of rungs.



SECTION 02724 FORCE MAINS AND INVERTED SIPHONS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of force mains and inverted siphons. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Piping for force mains shall be ductile iron, steel, polyvinyl chloride (PVC) plastic, filament-wound reinforced or centrifugally cast reinforced thermosetting resin, thermo-setting reinforced plastic mortar pressure pipe, or reinforced concrete.

2.1 Ductile Iron Pipe: AWWA C151, 150 psi working pressure. Pipe shall be cement mortar-lined in accordance with AWWA C104. Joints shall conform to AWWA C111. Flanges shall conform to AWWA C115.

2.2 Polyvinyl chloride (PVC) Plastic Pipe: All pipe, couplings, and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B, designated as PVC 1120 in ASTM D 1785.

2.3 Reinforced and Prestressed Concrete Pipe: Steel cylinder reinforced concrete pipe shall conform to AWWA C300, C301, or C303 and shall be designed to withstand a working pressure of not less than 150 psi, with bell and spigot steel joints and gaskets.

2.4 Steel Pipe 3 Inches and Larger, not Galvanized: AWWA C200 with dimensional requirements as given in ANSI B36.10 for pipe 6 inches in diameter and larger, and ASTM A 53 for smaller sizes. Joints shall be mechanical, bell and spigot, or flanged.

2.5 Filament Wound Reinforced Thermosetting Resin Pipe (RTRP-I) for Lines 3 Inches and Larger: Pipe shall conform to ASTM D 2996. The pipe shall be suitable for a normal working pressure of 150 psi at 73 F.

2.6 Centrifugally Cast Reinforced Thermosetting Resin Pipe (RTRP-II) for Lines 3 Inches or Larger: Pipe shall conform to ASTM D 2997.

2.7 Reinforced Plastic Mortar Pressure (RPMP) Pipe for Lines 3 Inches or Larger: Pipe shall conform to ASTM D 3517. Joints shall be bell and spigot type with elastomeric or mechanical gaskets.

2.8 Valves:

2.8.1 Check Valves shall be designed for a minimum working pressure of 150 psi. Valves larger than 2 inches shall be iron body, bronze-mounted, shall have flanged ends, and shall be the non-slam type. Flanges shall be the 125-pound type conforming to ANSI B16.1.

2.8.2 Gate Valves shall be designed for a working pressure of not less than 150 psi. Valves smaller than 3 inches shall be all bronze and shall conform to MSS SP-80, Type 1, Class 150. Valves 3 inches and larger shall be iron body, bronze-mounted, and shall conform to AWWA C500.

2.8.3 Rubber-Seated Butterfly Valves shall conform to the performance requirements of AWWA C504.

2.8.4 Plug Valves: Cast-iron valves shall comply with MSS SP-78. Steel plug valves shall comply with API Spec. 6D.



2.8.5 Pinch Valves shall be double-acting, jam-proof type with unobstructed streamlined flows and built-in operator. The valve shall have flanged ends. Flanges shall be of the 125-pound type complying with ANSI B16.1.

2.8.6 Air Release Valves shall be attached by means of threaded pipe connections.

2.8.6.1 Manual Air Release Valves shall consist of a 3-inch gate valve and 3-inch ductile iron pipe and fittings.

2.8.6.2 Automatic Air Release Valves shall be of the compound lever type capable of withstanding operating pressures of 150 psi.

2.9 Valve Boxes shall be cast iron or concrete. Only concrete boxes will be acceptable in roadways or in areas subject to heavy loads.

2.10 Valve Vaults: Precast concrete units conforming to ASTM C 478.

3.0 EXECUTION:

3.1 Utility Separation: Pressure sewer pipe and water pipe shall be separated by at least 10 feet horizontally.

3.2 Placing and Laying:

3.2.1 RTRP Pipe shall be installed in accordance with ASTM D 3839. PVC shall be installed in accordance with AWWA M23.

3.2.2 Pipe Passing Through Walls of valve pits and structures shall be provided with cast-iron wall sleeves.

3.3 Thrust Blocks: Plugs, caps, tees, and bends deflecting 22-1/2 degrees or more, either vertically or horizontally, on waterlines 6 inches in diameter or larger, and fire hydrants shall be provided with thrust blocking or metal tie rods and clamps or lugs.

3.4 Hydrostatic Tests: The pipeline shall be subjected to both a pressure test and a leakage test.

3.4.1 Pressure Test: After the pipe has been installed and the trench has been partially backfilled, leaving the joints exposed for examination, the pipe shall be filled with water in a manner to expel all air. The pipeline shall be subjected to a test pressure of 100 psi or 150 percent of the working pressure, whichever is greater, for a period of at least one hour.

3.4.2 Leakage Test: A standard one-hour leakage test shall be performed subsequent to or concurrently with the pressure test and shall meet an allowable leakage rate according to the following formula:

$$L = NDP/K, \text{ where}$$

L equals the allowable leakage in gallons per hour, N is the number of field joints in the length of pipeline tested, D is the nominal diameter of the pipe in inches, P is the square root of the average test pressure in psig, and K is equal to 7,400.

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SECTION 02725 SAND DRAINS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sand drains. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Galvanized Perforated Corrugated Metal Pipe: AASHTO M36.

2.2 Perforated Polyvinyl Chloride (PVC) Plastic Pipe: ASTM D 1784.

2.3 Aggregate shall be sand, gravel, crushed rock, or chat that is clean, sound, and of a good quality. Gradation shall conform to the following table:

Retained on the 1-inch sieve	0%
Retained on the 3/8-inch sieve	0-15%
Retained on the No. 8 sieve	40-60%
Retained on the No. 30 sieve	70-95%
Retained on the No. 100 sieve	98-100%

3.0 EXECUTION:

3.1 Pipe Bedding: Aggregate shall be placed in uniform layers on level excavation.

3.2 Perforated Pipe shall be laid with securely aligned joints to lines and grades, which will allow proper drainage.

3.3 Perforated Pipe shall be embedded with a minimum coverage of two feet of aggregate or as directed.



SECTION 02726 WASTEWATER COLLECTION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of wastewater collection systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Bituminized Fiber Pipe and Fittings: ASTM D 1861, except that wye branches and tees may be vitrified clay, concrete, or cast iron.

2.2 Cast-Iron Soil Pipe and Fittings: ASTM A 74, Class SV or XH. Acid-resistant lines shall be Class XH and contain not less than 12 percent silicon.

2.2.1 Rubber Gaskets for Compression Joints: ASTM C 564.

2.2.2 Caulked Joints: Joint packing material shall be twisted jute or oakum, tarred type. Lead shall comply with Fed. Spec. QQ-C-40.

2.3 Clay Pipe and Fittings: Clay Pipe and Fittings shall conform to ASTM C 700. Compression Joints shall conform to ASTM C 425.

2.4 Concrete Pipe: 24 inches in diameter or less, nonreinforced, ASTM C 14, Class 1; greater than 24 inches in diameter, reinforced, ASTM C 76.

2.4.1 Joints less than 36 inches in diameter shall be bell and spigot type; pipe 36 inches or greater in diameter shall be bell and spigot type, tongue and groove type, or modified tongue and groove type. Joints and gaskets shall conform to ASTM C 443.

2.4.2 Portland Cement for Concrete Pipe and Fittings: ASTM C 150, Type IIA or V.

2.5 Plastic Pipe: Plastic pipe shall not be used for sewers larger than 15 inches in diameter.

2.5.1 Acrylonitrile-Butadiene-Styrene (ABS) Composite Piping: ASTM D 2680, Type SC or Type OR, size 8 inches through 15 inches in diameter.

2.5.2 Acrylonitrile-Butadiene-Styrene (ABS) Pipe and Fittings: ASTM D 2751, solvent weld or bell and spigot O-ring joint, size 12 inches or less in diameter.

2.5.3 Polyvinyl Chloride (PVC) Pipe and Fittings: ASTM D 3034, Type PSM with a maximum SDR of 35, size 15 inches or less in diameter, with flexible elastomeric seal joint, elastomeric gasket joint in accordance with ASTM D 3212.

2.5.4 Branch Connections: Branch connections shall be made by use of regular fittings or solvent cemented saddles. Saddles for acrylonitrile-butadiene-styrene (ABS) composite pipe shall comply with Figure 2 of ASTM D 2680, saddles for acrylonitrile-butadiene-styrene (ABS) pipe shall comply with Table 3 of ASTM D 2751, and saddles for polyvinyl chloride (PVC) pipe shall comply with Table 4 of ASTM D 3034.

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2.6 Clay Pipe: Standard strength pipe shall conform to AASHTO M 65. Extra strength pipe shall conform to AASHTO M 65 or ASTM C 700. Compression fittings shall comply with ASTM C 425.

2.7 Reinforced Plastic Mortar Pipe: ASTM D 3262. Fittings shall be in accordance with ASTM D 3840. Joints shall be bell and spigot type utilizing an elastomeric gasket.

2.8 Brick for Manholes: ASTM C 62, Grade SW, or ASTM C 32, Grade MS.

2.9 Cement Mortar: ASTM C 270, Type M. Use Type IIA cement.

2.10 Concrete Blocks for Manholes: ASTM C 139.

2.11 Portland Cement: ASTM C 150, Type IIA or V.

2.12 Concrete: ASTM C 94, compressive strength of 4,000 psi.

2.13 Precast Reinforced Concrete Manhole Sections: ASTM C 478.

3.0 EXECUTION:

3.1 Adjacent Facilities: Unless otherwise dimensioned, the sewer shall not be closer horizontally than ten feet to a water-supply main or service line, except that where the bottom of the water pipe will be at least twelve inches above the top of the sewer pipe, the horizontal spacing may be a minimum of six feet. Where gravity-flow sewers cross above water lines, the sewer pipe for a distance of ten feet on each side of the crossing shall be fully encased in 4 inches of concrete or shall be acceptable pressure pipe with no joint closer horizontally than three feet to the crossing.

3.1.1 Roads, Railroads, and Airfields: Sewer pipe shall be suitably encased in a sleeve of rigid conduit under primary access road crossings, railroad crossings, and at airfield runways and taxiways where aircraft are moved under their own power.

3.1.2 Structures: Where sewer pipe is required to be installed within three feet of an existing building or structural foundation, the sewer pipe shall be sleeved. 3.2 Pipe Laying: Pipe laying shall proceed upgrade with the spigot ends of bell and spigot pipe and tongue ends of tongue and groove pipe pointing in the direction of the flow.

3.3 Leakage Tests: Lines shall be tested for leakage by either infiltration tests or exfiltration tests, as appropriate. Leakage shall not exceed 0.2 gallons per inch diameter per 100 feet of pipeline per hour.

3.4 Test for Deflection: When flexible pipe is used, a deflection test shall be made on the entire length of the installed pipeline upon completion of all work, including the leakage test, backfill, and placement of any fill, grading, paving, concrete, or superimposed loads.

3.5 Building Connections shall include the lines to and connection with the building waste drainage piping at a point approximately 5 feet outside the building.



Section 02727 Erosion Control

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of mesh or netting for erosion control. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Jute Mesh: Fed. Spec. CCC-C-467.

2.2 Plastic Mesh: Manufacturer's recommendation.

2.3 Plastic Netting: Manufacturer's recommendation.

2.4 Polypropylene Mesh: Manufacturer's recommendation.

3.0 EXECUTION:

3.1 Preparation: Grade, compact, fertilize, and seed the area to be protected.

3.2 Installation: Apply blankets either horizontally or vertically to the slope. In ditches, apply blanket in direction of water flow. Lap and anchor blankets according to the manufacturer's instructions.



SECTION 02730 SEWER LINE MANHOLES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of sewer line manholes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: All materials shall be clean, free of defects, corrosion, and damage. All items shall be of proper type, size, design, and characteristics for the use intended. Unless otherwise specified, all items shall be factory made.

2.2 Manhole Brick: Bricks used in the repair of manholes shall comply with ASTM C 32, Grade MS.

2.3 Concrete used in the repair of manholes shall comply with ASTM C 94 with compressive strength of 3,000 psi.

2.4 Portland Cement shall comply with ASTM C 150, Type 5.

2.5 Concrete Blocks for manhole repair shall comply with ASTM C 139, of the size required to match prevailing conditions.

2.6 Cement Mortar shall comply with ASTM C 270, Type M.

2.7 Precast Concrete Sections for manhole repair shall comply with ASTM C 478, utilizing Portland cement.

2.8 Manhole Steps shall be of cast iron construction in compliance with ASTM A 48, Class 20-B or ASTM A 536, with a minimum tensile strength of 35,000 psi.

2.9 Grout shall be of Portland cement, metallic or nonmetallic, nonshrink or expansive type, complying with ASTM C 476 or ASTM C 658.

2.10 Epoxy Mortar shall be utilized to fill all deteriorated joints of brick manholes.

2.11 Castings shall be gray iron, complying with ASTM A 48, Class 20B, or ductile iron, complying with ASTM A 536.

2.12 Frames and Covers shall be for light-duty traffic, with 24-inch entrance diameter, anchored to the manhole structure.

2.12.1 Waterproof Frame and Cover shall be gasket sealed with bolts for lid and shall comply with "Frames and Covers," above. Bolts and nuts shall be steel.

2.12.2 Replacement Covers shall be solid, flat top, of the proper design and load rating, and fit the existing frame without need for adaptors or additional hardware.



2.12.3 Cover Height Adjustment Devices shall be expandable to fit the frame rim size and adjustable vertically to match the required finished grade elevation.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Cleaning Existing Surfaces: Prior to applying grout, scrape surfaces of all loose material, dry of excess water, and clean of organics, slimes, or dust.

3.1.2 Manhole Crack Preparation: Drill holes in cracks at the extreme ends and at 6- to 9-inch intervals with a masonry bit.

3.2 Installation:

3.2.1 Grouting, Interior of Manhole: Grout and seal interior wall of manhole by hand application, giving a trowel finish.

3.2.2 Grouting, Exterior of Manhole: If pressure grouting from ground surface, insert applicator directly above area to be grouted and inject grout until grout enters manhole through crack. If pressure grouting from inside manhole, insert grout applicator at each drilled hole along the crack and repeatedly pump until grout emerges through the crack and annular space between hole and applicator.

3.2.3 Curing of Grout: Cure Portland cement grout in a damp atmosphere by closing all entrances to the manhole.

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SECTION 02735 SEWER LINE GROUTING

1.0 DESCRIPTION OF WORK: This specification covers sewer line grouting. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Grout shall be applicable to sewer conditions and as required to seal the pipe from leaks. Type of grout used shall be compatible with the soil and moisture conditions and shall provide watertight seals under all internal and external conditions to which the sewer shall be subjected.

2.2 Chemical Grout shall be acrylamide gel or polyurethane foam.

2.2.1 Acrylamide Gel shall be an aqueous solution of acrylamide and N,N' methylenebisacrylamide powders, with the proper catalyst, such as B-dimethylaminopropionitrile and ammonium persulfate, mixed in the proper proportions and concentrations to achieve the desired results, depending on the field conditions.

2.2.2 Polyurethane Foam Grout shall be an aqueous solution of liquid urethane polymer, with a water-soluble amine accelerator.

2.3 Epoxy Mortar Grout shall comply with ANSI A118.3.

2.4 Portland Cement Grout shall comply with ASTM C 476.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Alternate Sewage Discharge shall be provided to a downstream manhole.

3.1.2 Preparatory Cleaning: Prior to beginning of grouting work, sewers to be repaired shall be cleaned of all debris, sediments, and tuberculation.

3.2 Installation:

3.2.1 Grouting shall take place at all joints determined to require repair and at cracks and crevices where infiltration or exfiltration is occurring or has a possibility of occurring.

3.2.2 Grouting of Lateral Connections and Manhole External Drops shall consist of pumping grout to fill the entire length of the lateral pipe and manhole drops until the grout exfiltrates through the various leaks. Allowing for proper grout setting time, ream the grouted pipe of excess grout in its entirety. Remove all excess grout without being discharged in the main sewer and dispose of properly.

3.2.3 Manual Grout Application: Grout large sewers allowing the physical entrance of personnel utilizing probe-type applications and injecting the grout material directly in the leaks or through holes drilled at the leaks. Grouting shall continue until all leaks are stopped.

3.2.4 Testing of Grouted Sewers:



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3.2.4.1 Air Testing of each individual joint and crevice shall be conducted upon setting of the in-place grout. The test shall be for not less than 30 seconds at each location, at pressures greater than or equal to the hydrostatic head caused by the maximum expected groundwater elevation. Record pressures at each location at five second intervals with an accuracy of 0.05 psi. Repair locations having pressure drops due to air leaks using grout or another approved method, until all leaks are stopped. Retest location after repairs are made.

3.2.4.2 Hydrostatic Testing:

3.2.4.2.1 Upon completion of grouting a section of sewer, the line shall be hydrostatically tested for leaks. Repair leaks using grout or another approved method, until all leaks are stopped. Retest line section after repairs are made.

3.2.4.2.2 Infiltration and Exfiltration Leakage into or out of the sewer shall not exceed the equivalent of 100 gallons per day, per inch of diameter, per mile of sewer from any section between successive manholes. The infiltration test may be used when the ground water is at least 2 feet higher than the pipe crown. Measure leakage with a weir. The exfiltration test shall consist of plugging successive upstream manholes and service connections and filling of line from the upstream manhole with water to a depth of 2 feet or more above the pipe crown or the ground water, whichever is higher.

3.2.4.3 Pneumatic Testing: Upon completion of grouting a section of sewers, the line shall be pneumatically tested for leaks in compliance with ASTM C 828. Repair leaks using grout or another approved method, until all leaks are stopped. Retest line section after repairs are made.

3.2.5 Performance of Grouted Sewers: Grouted sewer lines shall have no more than 100 gallons per inch diameter per mile of sewer per day, infiltration or exfiltration, upon completion of the work. RegROUT sections of sewers experiencing more than the allowable leakage or otherwise repair by approved methods.

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SECTION 02737 SEWER LINE CLEANING

1.0 DESCRIPTION OF WORK: This specification covers sewer line cleaning. Cleaning procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: All materials shall be clean, free of defects, corrosion, and damage. All items shall be of proper type, size, design, and characteristics for the use intended. Unless otherwise specified, all items shall be factory-made.

2.1 Portable Cleaning Equipment: Equipment used in the cleaning of sewer lines shall be as required to complete the work for the size, length, and conditions of the sewer. Portable and mobile equipment shall comply with Water Pollution Control Federation Manual of Practice No. 7.

2.2 Chemicals shall be of the strength required to perform the work. The chemicals shall not be damaging to pipe materials, manholes, pumping equipment, nor treatment process and shall not be contaminated by foreign substances.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Protection required to prevent damage to adjacent materials, equipment, fixtures, and finishes shall be provided. Necessary protective clothing and accessories for personnel working with chemicals shall be provided.

3.1.2 Ventilation of Sewers: Contractor shall provide proper ventilation for personnel working in the sewer.

3.1.3 Alternate Sewage Discharge: Contractor shall provide an alternate routing of sewage discharge to a downstream manhole.

3.1.4 Traffic: Contractor shall provide all traffic signs required to safely direct traffic at and around work areas.

3.2 Installation:

3.2.1 Direction of Work: Sewer line cleaning work, with the exception of hydraulic scouring, shall proceed in the downstream direction. Cleaning by hydraulic scouring shall proceed in the upstream direction.

3.2.2 Testing: Upon completion of cleaning operation, test sewer lines for proper operation and observe for a period of 24 hours. Clean out all stoppages and the retest the line for proper operation.



Section 02740 Septic Tanks And Grease Traps

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of septic tanks and grease traps. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Concrete Repair Material shall be epoxy type grout in compliance with Fed. Spec. MMM-A-001993.

3.0 EXECUTION:

3.1 Septic Tanks and Grease Traps shall be drained and cleaned.

3.2 Adequate Ventilation shall be provided and precautions against the presence of explosive vapors shall be taken if it is necessary to enter the septic tank.

3.3 Soil Absorption System: Remove and dispose of vegetation roots impeding the flow of water in the soil absorption system properly. Restore all noticeable irregularities in the ground surface, caused by removal, by filling with soil that matches surrounding soil.

3.4 Filling Abandoned Septic Tanks and Grease Traps: Clean and fill abandoned septic tanks and grease traps with compacted soil.



SECTION 02742 SIPHON TANK AND SIPHONS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and maintenance of sewage treatment plant dosing siphon tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Tank Repair Material shall be epoxy type grout complying with Fed. Spec. MMM-A-001993.

2.2 Concrete Coatings:

2.2.1 Outside and Above Grade shall be epoxy type in compliance with Mil. Spec. MIL-P-24441.

2.2.2 Inside and Below Grade shall be coal-tar epoxy type in compliance with SSPC-PAINT 16.

2.3 Steel Repair Material shall be steel plate or epoxy cement and fiberglass cloth.

2.4 Corroded or Defective Siphons: Replace those parts corroded or defective with new parts compatible with the unit, as recommended by the manufacturer.

2.5 Steel Coatings:

2.5.1 Red-Lead Base Coat shall comply with Fed. Spec. TT-P-86, Type I.

2.5.2 Aluminum Paint shall comply with Fed. Spec. TT-P-38.

3.0 EXECUTION:

3.1 Corroded or Broken Pipe and Fittings: Replace as required.

3.2 Minor Leaks: Repair minor leaks in the tank using material and surface preparation and application methods recommended by the material manufacturer.

3.3 Spalled Areas: Repair as required.

3.4 Cleaning and Coating:

3.4.1 Interior Concrete Surfaces of the tank shall be cleaned with high pressure water or steam to remove all dirt and residue, allowed to dry, and brush sandblasted in compliance with SSPC-SP 7.

3.4.2 The Exterior Concrete Surfaces of the tank shall be cleaned by means of brush sandblasting in compliance with SSPC-SP 7. The surfaces shall be blown down with air to remove the blasting residue and dust, and two coats of epoxy-polyamide paint shall be applied.

3.4.3 Holes and Voids in the concrete surfaces left from the blast cleaning shall be filled by means of troweling and squeeze application of an epoxy filler. The surfacing material shall be allowed to cure overnight, and then two coats of coal-tar epoxy complying with SSPC-PAINT 16 shall be applied.

3.4.4 Submerged Ferrous Metal Surfaces that are exposed to the sewage shall be sandblasted in compliance with SSPC-SP 10 and coated with two coats of coal-tar epoxy.

3.4.5 Ferrous Metal Surfaces that are not submerged shall be cleaned by means of sandblasting in compliance with SSPC-SP 6. Surfaces inaccessible to sandblasting shall be power tool cleaned in compliance with SSPC-SP 3. Surfaces shall be coated with one coat of red-lead base paint. After the base paint has dried sufficiently, two coats of aluminum finish paint shall be applied.



SECTION 02744 GREASE INTERCEPTORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of grease interceptors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Semi-Automatic Grease Draw-Off: Unit shall be on-floor type, cast iron, porcelain, or painted inside and out, with internal air relief, grease draw-off piping, and valve with flow control fitting. Draw-off piping and nozzle may be interchanged in field to make unit a right- or left-handed installation. Unit shall also have double wall trap with removable baffles and gasketed cover with low pressure chamber. The pipe size of the influent line shall be based on the influent flow rate and grease capacity.

2.2 Manual Grease Draw-Off: Unit shall be on-floor type, partially recessed or flush-with-floor type, cast iron, porcelain, or painted inside and out, with internal air relief and flow control fitting. Unit shall have double wall trap, removable baffles, gasketed cover bearing plumbing, and drainage seal of approval. The pipe size of the influent line shall be based on the influent flow rate and grease capacity.

2.3 Manual Grease Draw-Off, Coated Steel Type: Unit shall be high volume on floor or partially recessed, with internal air relief, double wall trap, removable baffles, gasketed non-skid cover, and flow control fitting. The pipe size of the influent line shall be based on the influent flow rate and grease capacity.

3.0 EXECUTION: The unit shall be placed in the influent line of the waste water disposal and treatment system.



SECTION 02745 IMHOFF TANKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of sewage treatment plant Imhoff tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Coatings:

2.1.1 Epoxy-Filler Compound for concrete surfaces shall comply with Fed. Spec. MMM-A-001993.

2.1.2 Coal-Tar Epoxy shall comply with SSPC-PAINT 16.

2.1.3 Epoxy Paint shall comply with Mil. Spec. MIL-P-24441.

2.1.4 Red-Lead Base Paint shall comply with Fed. Spec. TT-P-86, Type I.

2.1.5 Aluminum Finish Paint shall comply with Fed. Spec. TT-P-38.

2.2 Steel Tank Repair Material for minor leaks shall be a two-component epoxy sealing compound. For badly corroded areas, a steel plate of the same composition and thickness as the original tank shall be used.

2.3 Pipe and Fittings for replacement shall be equivalent to the existing pipe and fittings.

3.0 EXECUTION:

3.1 Preparation: Drain the contents of the tank and dispose of the sludge and sewage.

3.2 Leak Repair:

3.2.1 Concrete Tanks: Repair concrete tank leaks by cleaning and chipping or sandblasting the area of the leak and applying two-component epoxy concrete sealant.

3.2.2 Steel Tanks: Repair steel tank leaks by cleaning, scraping, chipping, or sandblasting the area of the leak and applying epoxy steel sealant. Repair badly corroded areas of steel tanks by cutting out the corroded area and welding a section of new steel plate in place. Welding shall be in compliance with AWS D1.1.

3.3 Pipe and Fittings: Replace pipe and fittings as required.

3.4 Cleaning and Coatings:

3.4.1 Interior Concrete Surfaces of the tank shall be cleaned with high pressure water or steam to remove dirt and residue, allowed to dry, and brush sandblasted.

3.4.2 Holes and Voids in the concrete surfaces left from the blast cleaning shall be filled by means of troweling and squeeze application of epoxy filler. Two coats of coal-tar epoxy shall be applied to the surface after the epoxy has cured.

3.4.3 Submerged Ferrous Metal Surfaces such as piping and equipment that are exposed to the sewage shall be sandblasted and coated with two coats of coal-tar epoxy.

3.4.4 Exterior Concrete Surfaces of the tank shall be cleaned by means of brush sandblast. The surfaces shall be blown down with air to remove the blasting residue and dust, and two coats of epoxy-polyamide paint shall be applied.

3.4.5 Ferrous Metal Surfaces that are not submerged shall be cleaned by means of sandblasting. Coat surfaces with one coat of red-lead base paint. After the base paint has dried sufficiently, apply two coats of aluminum finish paint.



SECTION 02766 SEWER LINE PIPE LINING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sewer line pipe lining. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Lining Material:

2.1.1 Polyethylene Pipe: Extruded, flexible industrial grade, high density (Type 3 or 4) in 40 foot lengths, complying with ASTM D 2239 and D 2447.

2.1.1.1 Diameter: Outside diameter shall be as large as possible while allowing for ease of pulling into the existing sewers. Pipe dimensions shall comply with ASTM D 2447 and D 2837.

2.1.1.2 Liner Thickness and Class shall be suitable for the use intended. The tolerance on the pipe wall thickness shall be as noted in Table 2 of ASTM D 2447.

2.1.1.3 Gravity Sanitary, Gravity Storm, and Gravity Industrial Sewers shall be Schedule 40.

2.1.1.4 Gravity Thermal Discharge Sewers shall be Schedule 80.

2.1.1.5 Low Pressure Sewers shall be Schedule 40, complying with ASTM D 2239.

2.1.1.6 High Pressure Sewers shall be Schedule 80, complying with ASTM D 2239 and D 2837.

2.1.1.7 Chemical Resistance: Pipe liner shall be resistant to chemical attack, erosion, and corrosion.

2.1.1.8 Fittings shall be fabricated from polyethylene pipe. The polyethylene fittings shall have the same pressure rating as the pipe and shall comply with ASTM D 3261.

2.1.2 Cement-Mortar Lining:

2.1.2.1 Portland Cement shall comply with ASTM C 150, Type 1.

2.1.2.2 Pozzolan Cement shall comply with ASTM C 618 and shall not comprise more than 20 percent of total cement amount, by weight.

2.1.2.3 Sand shall be well graded, clean, free from organic and extraneous matter. One hundred percent shall pass the 16-mesh size screen.

2.1.2.4 Lining Thickness: Cement lining shall be not less than 1/8 inch for pipe sizes 4 to 14 inches, not less than 3/16 inch for pipe sized 16 inches and larger, and not less than 1/4 inch for steel pipe 16 inches and larger.

2.1.3 Reinforced Mortar Pipe Slip-Lining:

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2.1.3.1 Gravity Sewers: Slip-lining shall be of glass fiber reinforced polyester mortar pipe, complying with ASTM D 3262.

2.1.3.2 Pressure Sewers (Force Mains): Slip-lining shall be of glass fiber reinforced polyester mortar pipe complying with ASTM D 2517.

2.1.3.3 Diameter: Outside diameter shall be as large as possible while allowing for ease of pulling into existing sewers, as recommended by the manufacturer.

2.1.3.4 Chemical Resistance: Pipe liner shall be resistant to chemical attack, erosion, and corrosion.

2.1.3.5 Fittings: Fittings shall be manufactured of the same materials as is the glass fiber reinforced polyester mortar pipe.

2.1.4 Epoxy-Mortar Lining:

2.1.4.1 Epoxy Compound shall comply with ASTM D 1763.

2.1.4.2 Admixtures shall be well graded with one hundred percent passing the 16-mesh size screen. All admixtures shall improve the workability, density, and strength of the mortar.

2.1.4.3 Lining Thickness: For pipe sizes 4 to 14 inches, epoxy mortar lining thickness shall be not less than 1/8 inch. For pipe sizes 16 inches and larger, epoxy mortar lining shall be not less than 3/16 inch.

2.2 Joint:

2.2.1 Slip-Lining:

2.2.1.1 Polyethylene Pipe Butt Joints: Pipe lengths, fittings, and flanged connections to be joined by thermal butt fusion shall be of the same type, grade, and class of polyethylene compound and supplied by pipe supplier.

2.2.1.2 Flanged Joints shall consist of a polyethylene flange, thermally butt fused to the ends of the pipe. The companion flange shall be steel or cast iron and nylon-coated.

2.2.1.3 Lateral Service Connections: Sidewall connections shall be made with polyethylene pipe sections of the same material, grade, and class as the liner material and shall have the same pressure ratings. Lateral connections shall be watertight.

2.2.2 Reinforced Mortar Lining:

2.2.2.1 Bell and spigot joints shall be the inverted type.

2.2.2.2 Manhole Joints and Connections shall be oakum ring and grout as required.

3.0 EXECUTION:

3.1 Slip-Lining, Polyethylene Pipe:

3.1.1 Insertion of Liner: Liner shall be laid at a constant line and grade as the existing pipe, without undulations or damage. Where the existing pipe is not at constant grade, the liner shall follow as true a constant grade as possible.



3.1.2 Grouting: At manholes, annular space shall be packed with oakum and expansion grout or nonshrink grout as required. At existing line, after liner has been inserted, grout wherever existing pipe has failed structurally.

3.1.3 Concrete Encasement: Crown of liner shall be encased in concrete a minimum thickness of 6 inches for the entire length of the excavated trench and out at least 6 inches each side of the bottom half of the original pipe remaining down to firm soil. Wherever existing concrete encasement has been removed, the liner shall be encased in the same manner as the original pipe.

3.1.4 Thrust Blocks: Concrete thrust blocks shall be provided as required.

3.2 Cement Mortar and Epoxy Mortar Lining:

3.2.1 Cement Mortar Mixing: One part cement to one and one-half parts of sand by volume.

3.2.2 Application of Lining: The lining shall be applied to produce a smooth, uniform thickness throughout the interior of the pipe line.

3.2.3 Curing of the Cement Mortar Lining: Immediately upon completion of the lining of a length of pipe between access openings or at the end of a day's run, the section of pipe shall be closed at each end, the access openings covered to prevent the circulation of air, and the atmosphere kept moist.

3.2.4 Reconnection of Pipes After Lining: Close and make watertight all openings in the sewer lines.

3.2.5 Pressure Test and Leaks: Hydrostatic and leakage test shall be conducted on all pipe that is cleaned and lined.

3.3 Reinforced Mortar Pipe Lining:

3.3.1 Joining of Pipe Ends: Liner sections containing bell and spigot joints shall be joined using an O-ring.

3.3.2 Grouting Work shall be accomplished following the same techniques as described in paragraph Slip-Lining, Polyethylene Pipe.

3.4 Cement Mortar Lining:

3.4.1 Epoxy Mortar Lining: Excessive mortar shall be removed from the manhole walls and bottom. Manhole bottom shall receive special care in making all transitions smooth.

3.4.2 Work at Service Connections: Plugs or caps shall be placed at the access point of the service connection to the sewer and shall be removed once the mortar has set. The completed lining shall not be damaged.

3.5 Reinforced Mortar Pipe Lining: Joining of fiberglass reinforced polyester mortar pipe shall be carried out in the trench, with the first section of liner already inserted.

3.6 Lateral Connections: Service to connections shall be provided for and continued after installation of the lining.

3.7 Testing: Upon completion of lining operation, the sewer line shall be tested for proper operation and shall be observed for a period of 24 hours. All deficiencies shall be corrected.

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3.8 Pavement Restoration: All disturbed pavement shall be restored to its original condition and shall match existing adjacent.

3.9 Inspection: Large diameter sewers shall be inspected from inside to ensure that all lateral connections and joints are in proper order. Sewers that have been cement-lined may be inspected for a smooth finish, while plugs and caps are being removed.



Section 02774 Sewage Treatment Lagoons

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and maintenance of sewage treatment lagoons. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Block shall comply with ASTM C 129.

2.2 Concrete Grout shall comply with Fed. Spec. MMM-A-001993.

2.3 Riprap Stone shall comply with AREA-01.

2.4 Concrete Repair Material shall comply with Fed. Spec. MMM-A-001993.

2.5 Sand shall comply with ASTM C 33.

2.6 Portland Cement shall comply with ASTM C 150, Type V.

2.7 Rubble shall consist of broken concrete or broken stone.

3.0 EXECUTION:

3.1 Algae Removal shall be by mechanical or manual methods and shall include, but not be limited to, skimming, pumping through a screen, raking, or draining and cleaning the lagoon.

3.2 Slope and Dike Reconstruction shall be made to re-establish the original design configuration and grades. Place riprap, where required, so that its angle of repose is not exceeded.

3.3 Liner Reconstruction and Repair shall be made with materials compatible with the existing liner and compatible with the wastewater and sludge to be contained therein.

3.4 Repairs to Elastomeric Membrane Liners shall be made with like material and shall overlap all cuts, tears, fractures or other defects a minimum of 4 inches. Cut repair pieces square or rectangular. The method of bonding the new material to existing material shall be similar to the original joint banding method, except when the original joints have failed. In this case, the material supplier shall demonstrate that an alternate jointing system shall be satisfactory to the Contracting Officer. Replace earth or sand cover removed during repair or replacement of plastic liner to the same thickness as the original installation.

3.5 Repairs to Non-Elastomeric Membrane Liners shall be made by cutting out defective areas back to sound liner material and replacing with similar material. Joints shall be watertight.



SECTION 02830 FENCES AND GATES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fences and gates. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Ground Rods, Down Conductors, and Connectors:

2.1.1 Ground Rods: Galvanized steel rods, 3/4 inch in diameter by 10 feet in length.

2.1.2 Down Conductors: No. 8 copper wire or equivalent.

2.1.3 Connectors: Pressure type bolted or compression type.

2.2 Foundations shall be concrete with a minimum 28-day strength of 3,000 psi, and shall extend from 3 feet 6 inches below finished grade to 2 inches above finished grade. Tops of foundations shall slope away from posts. Extend gate post foundations to the underside of the bottom hinge. Foundations for line posts shall be 10 inches in diameter. Foundations for terminal and gate posts shall be the diameter of the post plus 8 inches but not less than 12 inches.

3.0 EXECUTION:

3.1 Existing Fence Connections: Wherever new fencing joins an existing fence, either at a corner or at the intersection of straight line fences, a corner post with brace post shall be set at the junction and braced. If the connection is made elsewhere than the corner of the fencing, the last span of the existing fence shall contain a brace span.

3.2 Security Fence: Wherever existing fencing fabric is embedded in concrete or earth, or attached to an earth-embedded galvanized steel sheet, repairs shall be made as follows:

3.2.1 Earth Embedment: Install new fabric or galvanized steel sheet to depth of existing. Attach steel sheet securely to adjacent existing sheeting and new and existing fencing fabric. Thoroughly backfill and compact soil in repair area.

3.2.2 Concrete Embedment: Install fence fabric to the depth of existing fabric. Place concrete to match existing configuration. Clean all exposed fencing of concrete that is a result of new construction.

3.3 Gate Installation: Install, plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage, as recommended by the fence manufacturer. Install and adjust hardware for smooth operation and lubricate where necessary.

3.4 Grounding: Ground on each side of every gate where crossed by high-tension-line crossings, at 1,000 to 1,500 foot intervals along fence in isolated areas, and at 500 to 750 foot intervals when in close proximity (100 feet or less) to public roads, highways, and buildings. Down conductors shall run full height of fence wherever wood posts are used and shall be securely fastened to each strand of wire to provide electrical continuity.



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3.5 Field Painting: At the completion of repair work, touch up all surfaces damaged by construction operations. Galvanized surfaces shall be painted with zinc-oxide paint. Wood, steel, vinyl coated, aluminized, and other fencing materials shall be touched up following the manufacturer's recommendations or to match existing finish.

3.6 Final Grading: The final ground surface shall be graded to remove irregularities and maintain the clearance between the bottom of the fence and the ground surface.

3.7 Seeding and Sodding: Seed or sod all lawn areas disturbed by repair and maintenance operations with a plant variety of the same species as that in adjacent areas. Areas where grass does not take hold shall be reseeded or resodded as directed by the Contracting Officer.



Section 02831 Steel Chain-Link Fencing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of steel chain-link fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Galvanized Fabric shall comply with Fed. Spec. RR-F-191/1, Type I, of 9 gauge wire and 2-inch mesh.

2.2 Framework: Posts, top rails, and braces shall be galvanized steel pipe in compliance with Fed. Spec. RR-F-191/3, Class 1.

2.3 Gates shall comply with Fed. Spec. RR-F-191/2 and shall be of the same type, size, and shape as the existing. Provide a keeper to automatically engage and hold the gate leaf open until manually released, a center plunger rod, a center stop, vertical lift framework, and sliding track.

2.4 Electric Operator for gates shall include a totally enclosed motor, starter, gear reduction, clutch, limit switch, and housing. Operator shall be controlled by an electric lock. Slide gate operators shall be equipped with magnetic brake, manual disconnect, and chain drive. Swing gate operators shall be equipped with a crank arm.

2.5 Accessories:

2.5.1 Barbed Wire shall comply with Fed. Spec. RR-F-191/4 and shall be two strands of 12-1/2 gauge galvanized steel wire, twisted, with four point barbs spaced five inches apart.

2.5.2 Post Caps: Pressed steel or malleable iron, galvanized, and of the configuration required.

2.5.3 Extension Arms for barbed wire shall extend outward at a 45 degree angle and shall have provision for attaching three strands of barbed wire with the top strand approximately one foot above the fence fabric.

2.5.4 Stretcher Bars: Minimum 3/16-inch by 3/4-inch steel bars, galvanized in compliance with ASTM A 123.

2.5.5 Stretcher Bar Bands: Heavy pressed steel bands, galvanized in compliance with ASTM A 123.

2.5.6 Tension Wire: Spring coil or crimped wire of minimum seven gauge galvanized steel with minimum tensile strength of 80,000 pounds per square inch and coating as specified for the fabric.

2.5.7 Fasteners: Steel wire with an ASTM A 641, Class 1 galvanized coating.

2.5.8 Slat Inserts: California Redwood treated with a stain preservative to maintain appearance.

2.5.9 Boulevard Clamps: Stamped 13 gauge mild steel, galvanized, in compliance with ASTM A 641, Class 1. Clamps for vinyl coated fence shall have the vinyl coating applied over the zinc coating.

3.0 EXECUTION:



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3.1 Posts: Set plumb, in straight alignment with other posts, evenly spaced and rigidly set. Set posts to a depth of 3 inches above the bottom of the concrete foundation.

3.2 Rails:

3.2.1 Top Rail: Install continuous through post caps, securely fastening to end, corner, pull, and gate posts with rail end.

3.2.2 Intermediate and bottom rails: Attach to line posts with boulevard clamps and to terminal posts with rail ends.

3.3 Truss Bracing: Securely fasten to end, corner, pull, and gate posts 12 inches below cap and extend to the adjacent line post. Braces shall be trussed from the line post to the bottom of the terminal post with round rods and turnbuckles.

3.4 Fabric:

3.4.1 Repair (Cutting and Patching) of Fabric: Cut out the damaged fabric, position new fabric to line up with existing mesh, and securely fasten to existing fabric.

3.4.2 Replacement of Fabric: Stretch to proper tension and securely fasten to terminal posts using stretcher bars.

3.4.3 Restretching Existing Fabric: Stretch existing fabric indicated to be restretched to proper tension and refasten to posts and rails.

3.5 Barbed Wire: Stretch and secure to extension arms with heavy wire pins.

3.6 Gate Hinges: Install to prevent twisting or turning under action of the gate and to swing through 180 degrees from closed to open position.

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SECTION 02832 STEEL ROD AND BAR FENCING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel rod and bar fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Pickets shall be of height and style required to match existing, solid mild steel bar, galvanized in compliance with ASTM A 123.

2.2 Framework: Posts and rails shall be of length and style to match existing, solid mild steel, galvanized in compliance with ASTM A 123.

2.3 Gates:

2.3.1 Frame: Galvanized steel, all welded construction.

2.3.2 Truss Rods: Galvanized steel as required for stability, minimum 3/16 inch in diameter.

2.3.3 Hardware: Gate latches, hinges, gate track, trolley, rollers, plunger rod, and locks as required.

2.4 Accessories:

2.4.1 Brackets: Malleable iron or pressed steel of the sizes and configurations required to adequately support attached members, minimum 3/16 inch thick.

2.4.2 Trim: Flat caps for all posts and pickets where required. Caps shall be galvanized cast iron or zinc die castings of thickness standard to the manufacturer.

2.4.3 Sleeves: Where required, sleeves shall be minimum 16-gauge steel tubing of the required configuration to receive post. Sleeves shall be galvanized in compliance with ASTM A 123.

3.0 EXECUTION:

3.1 Pickets: Fasten pickets to rails with clip angles and bolts and nuts.

3.2 Posts: Set posts in sleeves or footings as required to match existing conditions.

3.3 Brackets: Brackets for wall mounting and change of grade shall be securely fastened to wall and/or posts with appropriate fasteners.

3.4 Alignment: Finished fencing shall be in proper alignment with all posts plumb.

3.5 Welding: Comply with AWS D1.1.

3.6 Repair: Items shall be straightened, welded, sufficiently bolted, or otherwise strengthened as required.



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SECTION 02833 WROUGHT IRON ROD AND BAR FENCING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wrought iron rod and bar fencing including ornamental malleable iron fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Pickets shall be 3/8-inch square wrought iron rods of the required length and configuration.

2.2 Gates: Hardware shall be compatible with existing hardware in appearance and function.

2.3 Accessories:

2.3.1 Brackets: Brackets for fastening fencing to walls, floor, posts, and other attachments shall be wrought iron.

2.3.2 Trim: Provide iron trim items as required.

2.3.3 Bolts and Nuts shall be ASTM A 307 and galvanized in compliance with ASTM A 153.

3.0 EXECUTION:

3.1 Pickets shall be welded to rails. Welding shall comply with AWS standards and shall seal the joint against moisture.

3.2 Rails shall be securely fastened to posts with angle brackets.

3.3 Posts shall be set in sleeves or footings to match existing conditions. Posts set in sleeves shall have the annular space between the sleeve and post filled with lead or sulfur.

3.4 Brackets for wall mounting and change of grade shall be securely fastened to wall and/or posts with appropriate fasteners.

3.5 Gates:

3.5.1 Frame: Iron rod and bar rails and pickets shall be welded with full welds into sections in a pattern matching existing fencing. Rail-and-picket sections shall be fastened to posts with angle brackets, bolts, and nuts.

3.5.2 Bracing: Iron rod or bar braces shall be welded in place when required to strengthen the gate.



SECTION 02834 PRE-CAST CONCRETE AND MASONRY FENCING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of precast concrete and masonry fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fence Materials:

2.1.1 Pre-Cast Concrete: Match existing fencing units in all dimensions, patterns, colors, and textures. Units shall comply with ASTM C 145 Grade N, Type 1 for solid units and ASTM C 90 Grade N, Type 1 for hollow units, and ACI 318 as applicable.

2.1.2 Brick: Exposed brick masonry shall comply with ASTM C 216, Grade SW. Brick for below grade shall comply with ASTM C 62, Grade SW. Brick shall be selected for appearance to match existing brick in dimension, color, and texture.

2.1.3 Mortar:

2.1.3.1 Mortar shall comply with ASTM C 270, Type S and shall be 1 part Portland cement (ASTM C 150), 1/2 part lime (ASTM C 207), and 4-1/2 parts sand (ASTM C 144). Sand for joints 1/4 inch or less shall pass a No. 16 sieve. Sand containing any substance that will stain the masonry shall not be used. Waterproofing admixtures shall be approved by the Contracting Officer.

2.1.3.2 Colored Mortar shall be a factory-formulated mixture of masonry cement complying with ASTM C 91 and mortar color.

2.1.4 Masonry Grout: Coarse grout for masonry lintels and for filling cells in masonry units shall consist of 1 part Portland cement, 1/10 part lime, and 1-1/2 parts sand. Fine grout for bedding and grouting steel and for all other applications shall consist of 1 part Portland cement, 1/10 part lime, and 2-1/2 parts sand. Use waterproofing admixture in all grout used in exterior walls.

2.2 Posts:

2.2.1 Line Posts: Line posts shall be of the same materials and configuration as existing posts with reinforcing as required.

2.2.2 Terminal and Corner Posts: Match existing terminal and corner posts in configuration and adequately reinforce.

2.2.3 Gate Posts: Gate posts shall have all attachments for gates firmly embedded and shall be of sufficient strength to withstand stresses applied by the gate.

2.3 Rails: Rails shall be of the same materials and configuration as existing rails with all accessories for firmly attaching to posts.

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2.4 Gates:

2.4.1 Frame: Constructed of 2 x 4 wood members with attached pickets. Configuration of gate shall match that of existing gates.

2.4.2 Gate Bracing shall consist of a single 2 x 4 running diagonally across the gate to opposite corners of the frame. High end of brace shall be at hinge edge of gate.

2.4.3 Hardware: Hinges, latches, and other hardware shall be hot-dipped galvanized steel in compliance with ASTM A 153 and of configurations to match existing hardware.

2.4.4 Padlock: Padlocks shall comply with ASTM F 883.

2.5 Accessories:

2.5.1 Special Shapes: Special shapes, including copings and post caps, shall be as required to match existing units to be replaced.

2.5.2 Reinforcement: Masonry reinforcement, anchors, and ties shall comply with the following requirements:

2.5.2.1 Reinforcement Bars shall comply with ASTM A 615, Grade 40.

2.5.2.2 Joint Reinforcement shall be prefabricated from zinc-coated cold drawn steel wire in compliance with ASTM A 641. Provide prefabricated pieces for corners and intersections of walls. Reinforcement shall be truss type, approximately two inches narrower than the nominal thickness of wall.

2.5.2.3 Wire-Mesh Ties shall be 16-gauge or larger zinc-coated steel wire woven into 1/2-inch mesh and cut in strips one inch narrower than the width of walls in which they are used. Zinc-coating shall comply with ASTM A 641.

2.5.2.4 Wire Brick Ties shall be fabricated from 3/16-inch diameter zinc-coated steel wire complying with ASTM A 641.

2.5.3 Attached Items: Light fixtures and miscellaneous items attached to the fencing shall be provided with appropriate means for securely fastening to fence components.

2.5.4 Bolts and Nuts shall be ASTM A 307 and galvanized in compliance with ASTM A 153.

2.6 Foundations:

2.6.1 Material: Where foundation work is required for maintenance and repair, the new foundation shall match the existing foundation in materials and design.

2.6.2 Depth: Foundations shall extend below frost line or to the depth of existing foundations, whichever is greater.

3.0 EXECUTION:

3.1 General:



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3.1.1 All Scaffolding and Falsework shall be ample strength and well secured. Masonry work exceeding 10 feet in height shall be properly braced and supported until masonry is self-supporting.

3.1.2 Where Fresh Masonry Joins Partially or Totally Set Masonry, clean the exposed surface of the set masonry to obtain the best possible bond with the new work. Remove all loose masonry units and mortar.

3.2 Mixing Mortar and Grout:

3.2.1 Mix in a Mechanical Batch Mixer for a minimum of 5 minutes after all materials have been added.

3.2.2 Mix Grout in compliance with ASTM C 476. Grout shall have a consistency at time of placement to yield a slump of 10 to 11 inches as determined by ASTM C 143.

3.3 Reinforcement:

3.3.1 Install Horizontal Continuous Joint Reinforcement in all unit masonry fences. Reinforcement shall start not more than 8 inches above the masonry supporting surface and end within the top full mortar joint, or to match existing conditions and shall be spaced at maximum 16-inch centers vertically.

3.3.2 Joint Reinforcement shall be placed approximately 1/2 inch from masonry faces.

3.3.3 At intersections, bond each course with wire mesh ties or prefabricated joint reinforcement spaced not to exceed 16 inches vertically.

3.3.4 Install Vertical Reinforcement bars of the size indicated on the drawings in the hollow cores of masonry units as required. Fill all cells containing reinforcement for the full height of the reinforcement with grout.

3.4 Precast Concrete:

3.4.1 Bond shall be laid to match existing pattern. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Webs shall also be bedded in all courses of posts, in starting course on footings and solid foundation walls and around cells that are to be reinforced or filled with grout.

3.4.2 All Exposed Mortar Joints shall be tooled with a round jointer to produce smooth, dense, concave joints, except as otherwise required to match existing mortar joints.

3.5 Brick:

3.5.1 Bond shall be laid out to maintain joints to uniform thickness throughout.

3.5.2 Brick shall be laid with completely filled mortar joints to match existing. Mortar beds shall be spread smooth. The ends of brick shall be buttered with sufficient mortar to fill the end joint.

3.5.3 All Exposed Mortar Joints shall be tooled with a round jointer to produce smooth, dense, concave joints.

3.6 Pointing and Cleaning: Upon completion, all new joints shall be carefully pointed, filling all holes. Cut out defective joints and repoint them with mortar. Keep all exposed masonry clean and free of mortar as the work progresses. Clean masonry surfaces using fiber brushes and trisodium phosphate solution; acid shall not be used for any masonry cleaning. Rinse surfaces with clean water immediately after cleaning.

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Section 02835 Permanent Wood Fencing

1.0 DESCRIPTION OF WORK: The specification covers the furnishing and installation of materials for repair and maintenance of permanent wood fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Pickets:

2.1.1 Size: Wood for pickets shall match the existing fencing in material, configuration, dimensions, texture, and finishes.

2.1.2 Attachment: Hot-dipped galvanized nails complying with Fed. Spec. FF-N-105 shall be used to fasten pickets to rails.

2.2 Framework:

2.2.1 Line Posts: 4 x 4 of required length to match existing post height and extend into the ground as required to assure rigid installation.

2.2.2 Terminal and Corner Posts: 4 x 4 of required length.

2.2.3 Gate Posts: 4 x 6 and of the length required for firm embedment to resist gate action.

2.2.4 Top Rail: 2 x 4 of length required to span between posts.

2.2.5 Where Bracing is Required, it shall match top and bottom rails in dimension and finish.

2.2.6 Metal Posts and Rails: Solid mild steel galvanized in compliance with ASTM A 123 of the length and style required to match existing.

2.3 Gates:

2.3.1 Frame: 2 x 4 members with attached pickets. Configuration of gate shall match that of existing gates.

2.3.2 Bracing: Single 2 x 4 running diagonally across the gate to opposite corners of the frame.

2.3.3 Hardware: Hinges, latches, and other hardware shall be hot-dipped galvanized and of configurations to match existing hardware. Bolts and nuts shall comply with ASTM A 307 and galvanized in compliance with ASTM A 153.

2.4 Finish: All wood fence members shall be given a pressure preservative treatment in a closed retort. The treatment shall comply with AWPA C1 or AWPA C4. Wood cut or sawed after treatment shall have the cut surfaces well brush-coated with the preservative used in the treatment. Paint to match existing after treatment and installation.

3.0 EXECUTION:

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3.1 Posts: Hold in line in a true vertical position by temporary bracing until backfilling is completed. Compact by hand tamping or other suitable methods to a density comparable to that of adjacent ground. Posts of fencing that are higher than four feet and exposed to strong winds and posts at all gates shall be of heavy construction and shall be embedded in concrete.

3.2 Rails: Install at the height and in the manner required to match existing fencing, and secure to post with fasteners similar to existing.

3.3 Pickets: Space, attach, and position to match existing pattern and attachment methods.

3.4 Accessories: Install to match existing conditions.



Section 02836 Snow And Other Temporary Fencing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of snow and other temporary fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Pickets:

2.1.1 Size: Wood pickets shall be 3/8 inch thick, 1-1/2 inches wide, and 48 inches high.

2.1.2 Coating: Red oil paint or stain.

2.1.3 Spacing: Approximately two inches apart.

2.1.4 Attachment: Bind together with three double strands of wire.

2.2 Framework:

2.2.1 Materials: Wire shall be 13 gauge galvanized steel, complying with ASTM A 641.

2.2.2 Types: The framework shall consist of three parallel double strands of wire twisted between pickets to hold them securely in place.

2.2.3 Wire Connectors: Wire for attaching fabric to metal posts shall be nine gauge.

2.2.4 Staples and Nails shall comply with Fed. Spec. FF-N-105. Staples and nails shall be zinc-coated and of sufficient length for purpose required.

2.3 Gates:

2.3.1 Frame: Frames shall consist of two parallel horizontal wooden members with pickets attached at two-inch spacing.

2.3.2 Bracing: Two wooden members placed diagonally on the gate between the frame boards.

2.3.3 Hardware shall include two strap hinges, latching device, and stop bar, all of zinc-coated steel, in compliance with ASTM A 153.

2.4 Supports:

2.4.1 Steel: Line posts and uprights shall be drive type, T sections, and provided with suitable anchor plate. The sections shall be hot-rolled steel complying with ASTM A 702, galvanized in compliance with ASTM A 123. The T sections shall have the following minimum sizes:

Post Length (Feet) Post Weight (Pounds)

5 7.32

5 1/2 7.99

6 8.65

6 1/2 9.32

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7 9.98
7 1/2 10.64
8 11.31
9 12.64
10 13.97

2.4.2 Wood: Posts shall be cut from cedar, Douglas fir, pine, or other approved species of timber. Posts shall be peeled, treated, dressed, and cured. All wood posts and braces shall be given a pressure preservative treatment in a closed retort. The treatment shall comply with AWWA C1 or AWWA C4. Wood cut or sawed after treatment shall have the cut surfaces well brush-coated with the preservative used in the treatment.

2.4.3 Braces: Steel braces shall have same configuration as line posts and uprights without the anchor plate. Wood braces shall be treated No. 2 or better grade, Douglas fir or southern yellow pine. Braces shall meet all of the requirements for wood posts.

2.4.4 Location: Posts shall be evenly spaced to adequately support the fence framework.

3.0 EXECUTION:

3.1 Wood Posts: Hold in line in a true vertical position by temporary bracing until backfilling is completed. Compact by hand tamping or other suitable methods to a density comparable to that of adjacent ground.

3.2 Steel Posts: Hold in a vertical position and drive to the required depths by an approved post driver. Post tops shall not be damaged during driving.

3.3 Corner, Brace, Or End Panels: Construct corner, brace, or end panels at the beginning and terminal ends, at gate openings, at all intersections, and at all corners or changes in horizontal alignment of fences, in existing fence on both sides of junction with new fence (except when junction is at a corner already braced), and on both sides of cattle guards.

3.4 Pull Posts shall be constructed when the distance of unbraced fencing exceeds 640 feet. Pull posts shall be spaced equidistant in the fence at intervals of 640 feet or less.

3.5 Framework Installation: Stretch to proper tension and securely fasten to posts. Top and bottom wires of fabric shall be tied or stapled to each post. Tie or staple every other wire to alternating posts. Every wire shall be tied or stapled to corner, pull, end, and gate posts. Wire for tied fabric shall be nine gauge.

3.6 Picket Replacement: Where required, new pickets shall be securely fastened into the existing wire framework using 13 gauge galvanized wire.

3.7 Restretching Existing Fabric: Fabric designated to be restretched shall be restretched to proper tension and refastened to posts. Excess fabric extending beyond the post shall be removed.



Section 02837 Farm-Type Wire Fencing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and replacement of farm-type wire fencing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fabric shall be galvanized steel wire complying with ASTM A 116.

2.2 Framework:

2.2.1 Steel:

2.2.1.1 Posts shall comply with ASTM A 702, T-section, zinc-coated.

2.2.1.2 Stays shall be 9-1/2 gauge twisted wire, galvanized in compliance with ASTM A 641, Class 3.

2.2.2 Wood: Posts shall be cut from cedar, Douglas fir, pine, or other approved species of timber. Posts shall be peeled, treated, dressed, and cured and shall contain no unsound knots. All posts shall match existing post dimensions. All wood posts and braces shall be given a pressure preservative treatment in a closed retort. The treatment shall comply with CEAGS 02831B

2.2.3 Preservative. Wood cut or sawed after treatment shall have the cut surfaces well-coated with the preservative used in the treatment. All wood shall be pressure treated in accordance with AWPAC1 or AWPAC\$, as applicable.

2.3 Braces: Steel braces shall have the same configuration as line posts and uprights without the anchor plate. Braces shall meet all of the requirements for wood posts.

2.4 Connectors:

2.4.1 Wire for Attaching Fabric to Posts shall be 12-1/2 gauge or coarser, galvanized in compliance with ASTM A 641, Class 3.

2.4.2 Staples and Nails shall comply with Fed. Spec. FF-N-105. Staples and nails shall be zinc-coated and of sufficient length for purpose required.

2.5 Gates:

2.5.1 Tubular Steel:

2.5.1.1 Frame shall be a minimum of 1-3/8 inch outside diameter tubular steel, braced with a sturdy center bar and diagonal adjustable brace wire to prevent sagging. Gates shall be fitted with hinges. All material shall be hot-dipped zinc-coated.

2.5.1.2 Fabric for Gates shall be as specified for the fence and shall be securely tied to the framework at top, bottom, and sides with 9-gauge wire.

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2.5.2 Angle Iron:

2.5.2.1 Frame shall be fabricated of angle iron with cross ties and stays of light angle iron. Frame shall be zinc-coated in compliance with ASTM A 120 or A 153.

2.5.2.2 Fabric for Gates shall be as specified for the fence and shall be securely tied to the framework at top, bottom, and sides with 9-gauge wire.

2.5.3 Wood: Provide a 3/8-inch minimum diameter galvanized steel truss rod and turnbuckle.

2.6 Barbed Wire:

2.6.1 Barbed Wire shall comply with ASTM A 121 and shall be made from 2 strands of 12-1/2 gauge galvanized steel wire, twisted, with four-point barbs spaced five inches apart. Wire shall have Class 2 zinc coating.

2.7 Hardware:

2.7.1 Gate Hardware shall include the following:

2.7.1.1 Bottom Hinge shall be designed to carry the weight of the gate.

2.7.1.2 The Upper Hinge shall be adjustable.

2.7.1.3 Lock with Chain shall be 1-3/4 inch size complying with ASTM F 883.

2.7.1.4 Keeper shall automatically engage and hold the gate leaf open until manually released.

2.7.1.5 Center Plunger Rod.

2.7.1.6 Center Stop.

2.7.1.7 Vertical Lift.

2.7.1.8 Sliding Track.

2.7.2 Lightning Arresters, Insulators and Insulator Clamps, Fasteners, Signs, and Other Accessories shall be provided and installed as required.

3.0 EXECUTION:

3.1 Wood Posts: Hold in line in a true vertical position by temporary bracing until backfilling is completed. Compact by hand tamping or other suitable methods to a density comparable to that of adjacent ground. Refasten all braces, gates, hardware, fabric, and other accessories.

3.2 Steel Posts: Steel posts shall be held in a vertical position and driven to the required depths by an approved post driver. Tops of posts shall not be damaged by driving operation.

3.3 Corner, Brace, or End Panels: Corner, brace, or end panels shall be constructed at the beginning and terminal ends, at gate openings, at all intersections, at all corners or changes in horizontal alignment of fences, in existing fence on both sides of junction with new fence, (except when junction is at a corner already braced), and on both sides of cattle guards.



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3.4 Pull Posts shall be constructed when the distance of unbraced fencing exceeds 640 feet. Pull posts shall be spaced equidistant in the fence at intervals of 640 feet or less.

3.5 Wire Installation: Barbed and/or woven wire fabric shall be stretched to proper tension and securely fastened to posts. Top and bottom wires of fabric shall be tied or stapled to each post. Tie or staple every other wire to alternating posts. Every wire shall be tied to corner, pull, end, and gate posts. Wire for tying woven wire fabric and barbed wire shall be 9-gauge.

3.6 Restretching Existing Fabric: Fabric indicated to be restretched shall be restretched to proper tension and refastened to posts. Excess fabric extending beyond the post shall be removed.

3.7 Alignment: Finished fencing shall be plumb and in proper alignment with posts, and all wire work shall be taut.



SECTION 02840 ELECTRICAL TRAFFIC CONTROL SIGNALS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of electrical traffic control signals. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Replacement equipment items shall be regularly manufactured products.

2.2 Concrete Poles: Cement ASTM C 150; aggregate ASTM C 33; minimum compressive strength 6,000 psi when tested in compliance with AASHTO T22. Tensioning steel shall comply with ASTM A 603. Strands shall not be tensioned above 70 percent of the rated ultimate strength. Epoxy compound for sealing hollow cores shall comply with ASTM D 1763.

2.3 Galvanized Conduit Nipples: UL 514B.

2.4 Ground Wire: Cast-in-concrete pole, No. 6 stranded bare wire, ASTM A 603.

2.5 Wood Poles: ANSI 05.1, waterborne preservative-treated in compliance with AWWA C3, Retention Zone 1.

2.6 Structural Steel: ASTM A 36.

2.7 Steel Pipe: ASTM A 53.

2.8 Steel Bars: ASTM A 576.

2.9 Wire Strand: ASTM A 475.

2.10 Zinc Coatings: Members, ASTM A 123; fasteners, ASTM A 153.

2.11 Mast Arms for Supporting Traffic Signals: ASTM A 36; aluminum alloy 3003, or alloy alcad 3004 complying with ASTM B 209.

2.12 Concrete for Pull Boxes: ASTM C 94, 3,000 psi.

2.13 Cast-Iron Covers: ASTM A 48.

2.14 Signal Lens: Manufactured in compliance with Article 5 and 6, ITE Technical Report Number 1.

2.15 Loop Wire for Vehicle Detectors: No. 14 AWG or No. 12 AWG, stranded copper wire, type TTHN, THWN, or THW, ASTM B3.

2.16 Grout: One part cement complying with ASTM C 150 and two parts sand complying with ASTM C 33.

2.17 Conduit: Polyvinyl chloride, UL 651, Schedule 40 or galvanized rigid metal, ASTM B3.



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2.18 Ground Wire: Soft drawn copper, bare, stranded, ANSI C7.1.

2.19 Electrical Work: NFPA No. 70.

3.0 EXECUTION:

3.1 Scheduling and Coordination: The Contractor shall ensure that required notices have been given and that power interruptions have been scheduled and approved.

3.2 Traffic: Provide temporary traffic signs at and around work area. Signs and locations shall be as approved by the Contracting Officer.

3.3 Vehicle Detector Assemblies, Loop Type: Saw out existing loops to be replaced to their full depth. Install and seal loop wire. Splice and solder loop wire and lead-in cable and wrap a minimum of two wraps with silicone tape and heavy-duty electrical tape. Install sealant in compliance with the manufacturer's recommendations. Excavate and remove existing lead-in cable to be replaced, and install new lead-in cable in place and connect to cabinet ground.



Section 02850 Traffic Signs

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of traffic signs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Sign Foundations:

2.1.1 Replacement Foundation Footing Concrete shall be a mixture of cement complying with ASTM C 150 and aggregate complying with ASTM C 33. Compressive strength shall be 2,800 psi at 28 days.

2.1.2 Sulfur Mortar shall comply with ASTM C 287.

2.1.3 Reinforcing Steel shall comply with ASTM A 615.

2.2 Sign Supports shall be of the "break-away" type. Supports shall be strong enough to resist applicable wind forces without damage, but shall be designed to experience a brittle rupture type failure or a "quick separation" type joint.

2.2.1 Sign Support, Aluminum:

2.2.1.1 Replacement Castings shall be Alloy A356.0-T6 in compliance with ASTM B 108.

2.2.1.2 Replacement Structural Members shall comply with ASTM B 308.

2.2.1.3 Replacement Bars, Rods, Shapes, and Tubes shall comply with ASTM B 221, alloy 6061-T6.

2.2.1.4 Replacement Bolts, Nuts, and Screws shall match items being replaced and shall be alloy 2024-T4 with anodic coating complying with ASTM B 580, or 6061-T6 in compliance with ASTM B 211. Bolt heads shall be hexagon. Bolt threads shall be Class 2, 2A, or 2B in compliance with ANSI B18.2.1. Nuts shall be hexagon shaped in compliance with ANSI B18.2.2.

2.2.1.5 Replacement washers shall be furnished from sheet metal complying with ASTM B 209, alloy alclad 2024-T3 or T4.

2.2.2 Sign Support, Steel:

2.2.2.1 Replacement Structural Members shall comply with ASTM A 36.

2.2.2.2 Replacement Bars shall comply with ASTM A 108.

2.2.2.3 Replacement Pipe shall comply with ASTM A 53 standard weight.

2.2.2.4 Replacement Fasteners shall comply with ASTM A 307 and ASTM A 325.

2.2.2.5 Replacement Anchor Bolts for anchoring base plates to concrete bases and nuts and washers shall be galvanized in compliance with ASTM A 153.



2.2.3 Sign Support, Wood:

2.2.3.1 Replacement Wood Sign Post shall be of the species listed in AASHTO M168, dressed four sides and having a pyramidal top cut before being treated.

2.2.3.2 Replacement Sign Post shall be pressure treated with creosote or creosote-tar solution complying with AWPB LP-55.

2.3 Sign Face:

2.3.1 Replacement Plywood Sign Face shall be grade HDOAB G-1 EXTERIOR, in compliance with DOC PS 1. Material shall be cut to size in compliance with ANSI D6.1E.

2.3.2 Replacement Galvanizing Steel Sign Face shall comply with USDOT FHA MUTCD.

2.4 Reflective Sheeting shall be enclosed lens unless otherwise directed by the Contracting Officer.

2.4.1 Enclosed Lens Reflective Sheeting shall comply with Fed. Spec. L-S-300.

2.4.2 Reflective Sheeting shall comply with FP-79 minimum reflective intensity. Measurements shall comply with Fed. Spec. L-S-300.

2.4.3 Color shall be matched visually and within the limits shown on the Color Tolerance Charts issued by the Federal Highway Administration. The diffuse day color of the reflective sheeting shall be determined in compliance with ASTM E 97.

2.4.4 Film:

2.4.4.1 General: Reflective sheeting shall be sufficiently flexible to be easily cut to shape and permit application over, and conformance to, moderate shallow embossing characteristic of certain sign borders and symbols.

2.4.4.2 Surface: Sheeting surface shall be smooth and flat, shall facilitate cleaning and wet performance, and shall exhibit 85 degrees glossmeter rating of not less than 40, as specified in ASTM D 523. The sheeting surface shall withstand cleaning with gasoline, VM&P Naphtha, mineral spirits, turpentine, methanol, and xylol.

2.5 Demountable Sign Face Materials:

2.5.1 Acrylic Plastic Reflectors: Replacement demountable sign letters, digits, arrows, borders, and alphabet accessories shall be reflectorized and shall consist of acrylic plastic reflectors supported by embossed aluminum frames. They shall comply with the Standard Alphabet for Highway Signs, of the Federal Highway Administration, Series E.

2.5.2 Design and Fabrication: The letters shall be modified as necessary to accommodate the required reflectors. All items except border strips shall be fabricated from 0.040-inch minimum sheet aluminum. Border strips shall be of 0.032-inch minimum sheet aluminum. Mounting holes shall be provided within the frames to permit the use of screws, rivets or other acceptable fasteners. The size and spacing of the reflector holes shall provide maximum night legibility and visibility of the finished cutout figure.

2.5.3 General Requirements: The reflectors shall be of acrylic plastic meeting the requirements of Fed. Spec. L-P-380, Type I, Class 3. The reflectors shall be yellow or colorless. The lens shall consist of a

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smooth front surface, free from projections or indentations other than for identification, and a rear surface bearing a prismatic configuration that will effect total internal reflection of light.

2.5.4 Reflective Sheeting:

2.5.4.1 Demountable Sign Letters, Digits, Arrows, Borders, and Alphabet Accessories, when so specified, shall be reflectorized with reflective sheeting supported by flat aluminum backing and shall comply with the Standard Alphabet Highway Signs of the Federal Highway Administration.

2.5.4.2 Design and Fabrication: Letter design shall be Series E, modified for legibility. All items except border strips shall be fabricated from 0.040-inch sheet aluminum, 6061-T6 alloy, with mounting holes to permit use of screws, rivets, or other acceptable fasteners.

2.6 Highway Delineators, Enclosed Lens Type: Replacement reflectors shall be of acrylic plastic and a minimum of 3 inches in diameter. They shall be mounted in a heavy-duty housing with a back plate. The reflector shall consist of a clear and transparent plastic lens, which shall be colorless, and a plastic back of the same material, fused to the lens under heat and pressure around the entire perimeter to form a homogeneous unit, permanently sealed against dust, water, and water vapor. The acrylic plastic shall comply with Fed. Spec. L-P-380, Type I, Class 3.

2.7 Highway Delineators, High Intensity Type:

2.7.1 Replacement Reflectorized Delineators shall consist of a reflective sheeting compound of glass spheres, embedded in a weatherproof, synthetic, noncellulose material. The overall size of the plastic reflectors shall be 4 inches by 5 inches, with a reflective area of at least 17.5 square inches.

2.7.2 Delineators shall be silver-white when viewed with reflected light.

2.8 Highway Delineators Including Posts and Attachments:

2.8.1 Reflective Sheeting: Replacement reflective sheeting for delineators shall match delineators being replaced.

2.8.2 Delineator Posts and Accessories shall be of steel or aluminum. They shall have the necessary holes for attachment of the delineator housing. The assembly shall be furnished with the necessary bolts, nuts, and washers for attaching to the posts.

2.8.3 Insulating Materials: Neoprene, for separation of aluminum and steel parts, shall contain at least 60 percent, by volume, of pure neoprene. Other material may be used, subject to the approval of the Contracting Officer as to pliability and ability to withstand wear caused by stretching or distortion.

2.8.4 Reflector Units for guardrail installation shall match existing reflector being replaced in size and color.

2.8.5 Highway Delineators shall be supplemented with directional guidance signs as directed by the Contracting Officer. Signs shall be the chevron alignment type and shall comply with ANSI D6.1E, Type W 1-8.

2.9 Painting Panels for Nonreflectorized Background:

2.9.1 Replacement Metal Panels for sign categories not required to be reflectorized shall have a nonreflectorized background composed of one spray coat of primer and two finish coats of baked enamel.



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2.9.2 Finish Coats shall be baked alkyd resin enamels meeting Fed. Spec. TT-E-529, Class B, of a composition that affects the finished background surface. When thoroughly dry, the colors shall match those described in the current Highway Blue Color Tolerance Chart, PR Color No. 3, or in Highway Green Color Tolerance Chart, PR Color No. 4, of the Federal Highway Administration.

2.9.3 Wood Signs shall have two coats of oil paint complying with Fed. Spec. TT-P-52. Message paint shall be a single coat of oil paint. All colors shall comply with ANSI D6.1E.

2.10 Sign Wash Detergent shall comply with ASTM D 3399.

3.0 EXECUTION:

3.1 Footings for Signs, Posts, and Supports:

3.1.1 Backfill Material shall be at or near optimum moisture and neither dry nor saturated. It shall be tamped thoroughly in place.

3.1.2 Concrete Footings may be cast in place or precast. Hand mixing of concrete will be permitted where the quantity does not exceed one-half cubic yard.

3.2 Erection of Signs and Sign Supports: Sign posts shall be erected vertically. Posts erected in sleeves shall be anchored with sulphur mortar. Mortar shall comply with ASTM C 287. Sign faces shall be positioned to be generally perpendicular to the line-of-sight for the observer. Reflectorized signs shall be inspected at night. If specular reflection is apparent on any sign, its position shall be adjusted by the Contractor to eliminate the condition.

3.3 Delineators and Hazard Markers: Delineator posts shall be driven to a depth of 30 inches.

3.4 Removal of Existing Signs and Posts:

3.4.1 Damaged, Obsolete, or Change of Purpose Signs and Posts shall be removed and delivered to a storage area designated by the Contracting Officer. Post hole shall be backfilled, tamped, and made level with the adjacent surface. Disturbed paving, sidewalks, and grassed areas shall be replaced with matching material of same quality and quantity as existing.

3.4.2 Signs and Posts to be Replaced shall be removed and replaced by new signs and posts in identical locations. Backfill around post shall be thoroughly compacted to hold posts securely in a vertical position.



SECTION 02860 PLAYING FIELDS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of playing fields. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fills required to bring the subgrade of playing surfaces up to required elevation shall be placed in horizontal layers of not more than 8 inches in loose thickness. The top layer of all fills and excavated areas under the playing surfaces shall be compacted to 95 percent CE 55 maximum density. Each lower layer shall be compacted to at least 90 percent of MIL-STD-621, Method 100, CE 55 maximum density.

2.2 Sand-Clay Playing Surfaces shall consist of a stone foundation course, a clay foundation course, a wearing course and, where equipped, a drainage filter course, constructed on the prepared subgrade.

2.2.1 Stone Foundation Course: A layer at least 3 inches thick of 3/4- to 1-1/2 inch crushed stone shall be spread over the subgrade or over the drainage filter course constructed thereon and shall be given preliminary compaction by rolling, followed by a filler consisting of 1/4- to 1/2-inch crushed stone to fill voids in the underlying stone. The stone foundation course shall be compacted to a minimum of 90 percent of CE 55 maximum density.

2.2.2 Clay Foundation Course: Selected inorganic fat clay (CH) shall be evenly spread on the stone foundation course to produce a compacted layer not less than 3 inches thick. The clay layer shall be compacted to a minimum of 90 percent of CE 55 maximum density.

2.2.3 Wearing Course: The approved inorganic clay-silt mixture of approximately 50 percent each of clay and silt shall be screened through a 1/4-inch mesh screen. The wearing course shall be mixed in proportions of 1 part sand to 2 parts clay-silt by volume. The wearing course shall be compacted to at least 90 percent of CE 55 maximum density and shall range from 1 to 1-1/2 inches in thickness.

2.2.4 Drainage Filter Course: The drainage filter course shall consist of a well-graded aggregate course encased in a geotextile material and laid in such a manner to allow water to freely drain from the playing surfaces. The geotextile material shall be a woven or non-woven filter material with a minimum permeability of 0.02 cm/sec. The material shall be resistant to mildew, rotting, insects, rodents, and chemicals normally encountered in a subsurface drainage system.

2.3 Bituminous Concrete Playing Surfaces shall consist of a base course, prime coat, bituminous leveling course, tack coat, surface course, color coating and, where required, a drainage filter course, all constructed on a prepared subgrade. The stabilized-aggregate base course shall be compacted at optimum moisture to at least 95 percent CE 55 maximum density. Marshall stability shall not be less than 500 pounds and the flow shall not be greater than 20/100 inch. The bituminous mixture shall be compacted until the voids in the total mix are reduced to less than 4.0 percent by volume.

2.3.1 Thickness of Courses: Base course shall be 4 inches thick after compaction. Leveling course shall be 1-1/2 inches thick after compaction unless directed otherwise. Surface course shall be 1 inch thick after compaction.



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2.3.2 Color Coating and Marking Paint: After curing of the bituminous surface course, the entire playing surface shall be covered with a color coat as required.

2.4 Portland Cement Concrete Playing Surfaces:

2.4.1 Aggregate: The nominal aggregate size shall be 1-1/2 inches to No. 4 sieve size and shall conform to ASTM C 33.

2.4.2 Portland Cement: The cement shall conform to ASTM C 150, Type IA or IIA; or ASTM C 595, Type IP-A.

2.4.3 Thickness: Horizontal Portland cement concrete playing surfaces shall consist of concrete slabs 4 inches thick.

2.5 Maintenance of Sand-Clay Surfaces: Prior to final acceptance, the Contractor shall make one application of 3/4 pound of calcium chloride per square yard to the sand-clay surface of the entire playing area.

2.6 Portable Outdoor Bleachers:

2.6.1 Bleachers shall be designed to support a uniformly distributed live load of 100 pounds per square foot of gross horizontal projection and a horizontal wind load of 30 lbs/sq ft of gross vertical projection. All seat and foot plank members shall be designed to support not less than 120 pounds per linear foot.

2.6.2 Wood Seating and Walk Boards shall be preservative-treated and painted.

2.7 Steel Basketball Poles: Minimum diameter 3-1/2 inches; galvanized pipe.

2.8 Running Track: Gravel and cinders over stone base; compaction to 90 percent of CE 55 maximum density. One hundred percent by weight of the gravel and cinders shall pass the 3/4-inch screen, and 90 percent of the gravel and cinders shall be retained on the No. 4 screen.

3.0 EXECUTION: (Section not used).



SECTION 02861 RECREATIONAL FACILITIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of miscellaneous/recreational facilities. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Materials shall be resistant to corrosion and degradation by ultraviolet rays. Hardware and fittings shall be at least as corrosion-resistant as the the materials fastened.

2.1.1 Steel Plates, Pipe, Tubing, Sheets, Wire Ropes, Chains, and Miscellaneous Shapes shall be stainless steel or galvanized steel, even if painted or coated with vinyl or other protective finish. All open pipe and tube ends shall have rain caps.

2.1.2 Wood shall be all-heart cedar, cypress, or redwood or shall be treated with a non-toxic preservative. Wood shall not be used where it will be in direct contact with the ground, unless approved by the Contracting Officer.

2.1.3 Fiberglass shall be smooth fiberglass-reinforced polyester with gelcoat coating and shall meet the following minimum physical properties: 22,000 psi flexural strength, 15,000 psi tensile strength, and 20,000 psi compressive strength.

2.1.4 Aluminum shall be anodized.

2.1.5 Foundations shall be 3,000 psi compressive strength concrete, reinforced as required. Provide embedded anchorage items as required.

2.2 Playground Equipment, shall include, but not be limited to, see-saws, slides, swings, whirlers, and monkey bars, shall be prefabricated and designed to withstand the anticipated structural loads.

2.2.1 Exposed Surfaces shall be smooth (except where required to be nonslip) seamless, and nonsplintering.

2.2.2 Steps, Platforms, and Other Flat Surfaces Subject to Foot Traffic shall be non-slip, but not abrasive and shall be formed to exclude or drain away water.

2.2.3 Fastening shall be flush, concealed, or otherwise formed or located to prevent injury to children playing on the equipment.

2.2.4 Slides shall have stainless steel sliding surfaces.

2.3 Bike Racks shall be mounted, and sections (if rack is sectional) shall be attached with tamper-proof fasteners.

2.4 Fiberglass Shelters shall be reinforced with steel, aluminum, or wood framework as required. Shelter roof shall be sloped to drain. Fiberglass edges shall be returned so that they are not exposed. Shelters shall be prefabricated and designed to withstand the anticipated live, dead, and wind loads.



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3.0 EXECUTION: Recreational facilities shall be installed plumb, aligned, and securely anchored to the ground. Adjust equipment with moving parts until operation is smooth and easy.

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Section 02921 Topsoil

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of topsoil. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Topsoil shall be the existing surface soil stripped and stockpiled on the site.

2.2 pH Adjusters:

2.2.1 Agricultural Limestone shall have a minimum calcium carbonate equivalent of 90 percent.

2.2.2 Other Liming Materials shall have a minimum calcium carbonate equivalent of 80 percent.

2.2.3 Aluminum Sulfate shall be commercial grade.

2.3 Soil Conditioners and Amendments:

2.3.1 Peat shall be a natural product conforming to ASTM D 2607.

2.3.2 Sand shall be clean and free of toxic materials.

2.3.3 Vermiculite shall be horticultural grade and free of any toxic materials.

2.3.4 Rotted Manure shall be unleached stable or cattle manure containing no chemicals or ingredients harmful to plants.

2.3.5 Rotted Sawdust shall be free of chips, stones, sticks, soil, and toxic substances.

2.3.6 Gypsum shall be 90 percent pure and free of any toxic materials.

2.4 Fertilizer shall be commercial grade, free flowing, uniform in composition and shall conform to applicable State and Federal regulations. Granular fertilizer shall conform to CID A-A-1909, Type I, Level B.

2.5 Soil Fumigant shall be 97 percent methyl bromide and 3 percent chloropicrin.

2.6 Mulch shall be straw, hay, or fiber mulch applied simultaneously with grass seed and fertilizer.

2.6.1 Straw shall be stalks from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material.

2.6.2 Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, free from noxious weeds, mold, or other objectionable material.

2.6.3 Wood Cellulose Fiber for use with hydraulic application of grass seed and fertilizer shall consist of specially prepared wood cellulose fiber or a combination of wood cellulose and recycled newsprint fibers.



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2.7 Asphalt Adhesive for application with straw or hay mulch shall be cutback asphalt conforming to ASTM D 2028, or emulsified asphalt conforming to ASTM D 977.

2.8 Herbicide and Pesticide use must comply with all applicable State and Federal laws.

3.0 EXECUTION:

3.1 Placing Topsoil: Topsoil shall be distributed uniformly and spread evenly to an average thickness of 3 inches, with a minimum thickness of 2 inches. Soil compacted by construction equipment or soil on compacted cut slopes of grades shall be pulverized to a minimum depth of 2 inches by disking or plowing before applying topsoil.

3.2 Application of Soil Conditioners: All fertilizers, pH adjusters, and soil conditioners shall be incorporated into the soil to a depth of at least 4 inches.

3.3 Application of Soil Amendments: Soil amendments shall be spread uniformly over the soil and thoroughly incorporated into the existing soil to a depth of 8 inches.

3.4 Mulch shall be spread uniformly in a continuous blanket, using 1-1/2 tons per acre.



SECTION 02933 SODDING AND SEEDING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of seed and sod. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Seed shall be the latest season's crop and shall be delivered in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures and pure live seed. Seed shall be labeled in conformance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable state seed laws. Weed seed shall not exceed 1 percent by weight of the total mixture.

2.2 Sod shall be nursery grown, field sod, certified sod, or approved sod as classified in the ASPA Guideline Specifications to Turfgrass Sodding.

2.3 Sprigs shall be healthy living stems, stolons, or rhizomes and attached roots of grass without adhering soil. Sprigs shall include two to three nodes, shall be 4 to 6 inches long, and shall be obtained from approved sources where the sod is heavy and dense. Harvesting and planting operations shall be coordinated to prevent exposure of sprigs to the sun for more than 30 minutes before covering and moistening.

2.4 Water shall not contain elements toxic to plant life.

3.0 EXECUTION:

3.1 Preparation: Except on slopes steeper than 2 horizontal to 1 vertical, the soil shall be tilled to a depth of at least 4 inches. On slopes between 2 horizontal to 1 vertical and 1 horizontal to 1 vertical tillage, depths shall be 2 inches. On slopes steeper than 1 horizontal to 1 vertical, no tillage will be permitted.

3.2 Application:

3.2.1 Planting Seasons and Conditions: Planting shall not be done when the ground is frozen, snow covered, or in an unsatisfactory condition for planting.

3.2.2 Seed shall be broadcast uniformly. The seed shall be covered to an average depth of 1/4 inch.

3.2.3 Immediately After Seeding, the entire area shall be firmed with a roller and the soil moistened to a depth of 6 to 8 inches.

3.2.4 Sodding shall be accomplished in accordance with the ASPA Guideline Specifications to Turfgrass Sodding.

3.2.5 When Spot Sodding, the sod shall be cut into plugs 2 inches square or 2 inches in diameter. The individual pieces of sod shall be placed on 12-inch centers and pressed firmly into the soil by foot pressure or by tamping.

3.2.6 After Sod Pieces Have Been Placed in Position, the sodded area shall be rolled or tamped so that air pockets are eliminated.



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3.2.7 Water Shall Be Applied to the sodded areas at a rate sufficient to ensure thorough wetting of the soil to a depth of at least 4 inches.

3.2.8 Sprigging: Sprigs shall be planted in such quantity as to provide a minimum of 25 viable sprigs or 108 linear inches of viable sprigs per square yard of areas.

3.2.8.1 Immediately After Sprigging Operations Have Been Completed, the planted area shall be firmed with a cultipacker or a roller.

3.2.8.2 Water Shall Be Applied at the time of sprigging operations wetting the soil to a depth of 4 inches.

3.2.9 Protection of Turfed Areas: Immediately after seeding, sodding, or sprigging, the area shall be protected against traffic or other use by erecting barricades, as required, and approved signs shall be placed at appropriate intervals until final acceptance.

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SECTION 02940 LANDSCAPE IRRIGATION SYSTEM

1.0 DESCRIPTION OF WORK: This specification covers the complete irrigation system including: pipe, tubing, fitting, bubbler and emitter heads, control units, and all appurtenances necessary for an operating system. The system shall be Contractor designed, and installed with Contracting Officer approval.

2.0 PRODUCTS:

2.1 Piping and Fittings:

2.1.1 Copper Tubing: ASTM B 88, Type K; solder joint fittings, ASME B16.22 and B16.18 using 95-5 tin antimony solder.

2.1.2 PVC Pipe: ASTM D 1785, PVC 1120, Schedule 40 or 80, or ASTM D 2241, PVC 1120 SDR 21, Class 200; threaded or socket type, solvent cemented.

2.1.3 Polyethylene Pipe: ASTM D 2239, PE3406, SDR 15; insert fittings shall be used with stainless steel clamps.

2.1.4 Tubing for use with drip emitters shall be either polyethylene or polybutylene and shall have a minimum working pressure of 100 psi at 37 C.

2.2 Risers for Pop-up Bubbler Heads shall be of the double-swing joint type.

2.3 Application Devices shall be as specified herein.

2.3.1 Pop-up spray heads shall conform to Fed Spec WW-H-001220, Type II, class as required for the spray pattern needed.

2.3.2 Shrubbery sprinkler heads shall be brass nozzle type with adjustable conical spray coverage for permanent aboveground mounting or riser or pop-ups, height compatible with ground cover.

2.3.3 Bubbler heads shall be of the umbrella type in which the flow is evenly distributed around the perimeter of a flat plate on top of the bubbler. The bubbler shall be so adjustable as to provide half or full circle patterns and operating range of 20 psi to 90 psi. The flow rate shall be adjustable for gallonage and pressure by an easily accessible regulating screw.

2.3.4 Drip emitters shall be made of rigid, black, ultraviolet-resistant plastic. Each emitter head shall consist of at least two distinct pieces and be designed for easy and complete disassembly for cleaning. The emitters shall be capable of clog-free operation using water filtered through a 30-mesh screen. Emitters shall be multi-headed and shall be spaced to vary with soil conditions and wetted irrigation area.

2.4 Valves:

2.4.1 Gate valves less than 3 inches shall conform to MSS SP-80, Type 1, Class 150, with threaded or soldered ends.

2.4.2 Gate valves 3 inches and larger shall conform to AWWA C509, with flanged ends.

2.4.3 Pressure Reducing Valves: One valve shall be installed with each solenoid control valve. The valves shall be hydraulically operated, pilot operated, globe or angle type, and may be actuated either by diaphragm or piston. Valve bodies shall be bronze and shall conform to MSS SP-80, Type 1, Class 150.



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Valve stem shall be stainless steel. Valve discs and diaphragms shall be synthetic rubber. Valve seats shall be bronze. Pilot controls shall be bronze with stainless steel working parts.

2.4.4 Solenoid control valves shall be heavy-duty, all brass construction suitable for 150 psi working pressure and shall be a globe-type diaphragm valve of normally closed design.

2.4.5 Manual drain valves less than 2-1/2 inches shall be MSS SP-80, Type 3, Class 150, with soldered or threaded ends. Manual drain valves 2-1/2 inches and larger shall be MSS SP-85, Type II, Class 250, with threaded or flanged ends.

2.4.6 Automatic drain valves shall be brass or plastic, spring-loaded ball drip type, 150 pounds, and threaded ends, designed to close at 6 foot pressure head with positive seal at 3 psi pressure or greater, and be open to drain at less than 3 psi pressure.

2.4.7 Reduced pressure principle assemblies, double check valve assemblies, atmospheric (nonpressure) type vacuum breakers, and pressure type vacuum breakers shall be tested, approved, and listed in accordance with FCCHR-01. Backflow preventers with intermediate atmospheric vent shall be in accordance with ASSE 1012. Reduced pressure principle backflow preventers shall be in accordance with ASSE 1013.

2.5 Accessories:

2.5.1 Valve keys for manually operated valves shall be 1/2 inch diameter by 3 feet long, tee handles and keyed to fit valves.

2.5.2 Valve Boxes: Boxes shall be reinforced concrete pipe with cast-iron cover. Plastic valve boxes and covers, 9 in. inside diameter and self-draining, may be used as an option when approved by the Contracting Officer and in accordance with ASTM D 638. The word "IRRIGATION" shall be cast on cover.

3.0 EXECUTION:

3.1 Placing and Laying: Pipe shall not be laid in water or when trench conditions are otherwise unsuitable for the work. Water shall be kept out of the trench until the material in the joints has hardened or until caulking or jointing is completed. When work is not in progress, open ends of pipe, fittings, and valves shall be securely closed so that no substance will enter the pipes or fittings. Pipe ends left for future connections shall be valved, plugged, or capped, and anchored as shown or as directed.

3.2 Testing:

3.2.1 Hydrostatic Tests: After all new piping and risers are in place and prior to the installation of heads, each control valve shall be opened separately and the system shall be thoroughly flushed. After flushing, risers shall be capped and the entire system shall be subjected to a hydrostatic pressure test for a period of four hours. No testing shall be done until the last joint has had at least 12 hours to set. Leaking joints, cracked or defective pipe or valves shall be cut out and replaced and the complete test repeated until satisfactory results are obtained as approved by the Contracting Officer.

3.2.2 Operational Test: After the hydrostatic test, heads shall be installed and the system completed and tested to demonstrate functional efficiency. The entire system shall be operated on a normal basis for at least one month. Deficiencies such as clogging of emitters shall be corrected by the Contractor.



SECTION 02590 PAVEMENT MARKINGS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and replacement of pavement markings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Paint and reflective media shall be in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacturer, manufacturer's name, formulation number, and directions, all of which shall be plainly legible at time of use. The paint shall be homogeneous and easily stirred to smooth consistency. Paint that is older than one year shall not be used.

2.2 Paint:

2.2.1 Paint for Roads and Streets shall comply with Fed. Spec. TT-P-85, Type I or II; Fed. Spec. TT-P-115, Type I, II, or III; or with Fed. Spec. TT-P-1952.

2.2.2 Paint for Airfields shall comply with Fed. Spec. TT-P-85, Type I or II or with Fed. Spec. TT-P-1952.

2.3 Reflective Media for Roads and Streets shall comply with Fed. Spec. TT-B-1325, Type I, gradation A.

2.4 Thermoplastic Materials shall comply with AASHTO M 249.

2.5 Raised Pavement Markers shall comply with the Federal Highway Administration Manual on Uniform Traffic Control Devices:

2.5.1 Reflective Pavement Markers: Reflective pavement markers shall be of the prismatic reflector type, consisting of a high impact plastic shell filled with a mixture of inert thermosetting compound and filler material.

2.5.2 Nonreflectorized Pavement Markers: Nonreflective pavement markers shall consist of a heat fired, white, vitreous, ceramic base and a heat-fired, opaque, glazed surface to produce the properties in these specifications.

2.6 Adhesive for Installation of Raised Pavement Markers shall comply with AASHTO M 237.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Safety and Protection: Contractor shall assure the least possible obstruction to traffic.

3.1.2 Removal of Existing Pavement Marking: Remove paint, plastic markings, and raised markers by sandblasting, infrared heat, high pressure water, and water or scraping. Heat may be used to augment scraping; however, the underlying pavement shall not be burned.



3.2 Installation:

3.2.1 Thermoplastic Applicator: Utilize extrusion or spray application equipment for applying thermoplastic material to the pavement. The equipment shall provide for varying widths of traffic markings.

3.2.2 Bead Dispensers: Attach bead dispensers to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.

3.2.3 Tolerances in Dimensions and in Alignment: The length of the painted segment for skip stripe and the gap between segments may each vary plus or minus one foot, except that over-tolerance and under-tolerance lengths shall approximately compensate.

3.2.4 Protection: Adequate warning signs, flagmen, and necessary precautions for the protection of the wet paint and the safety of the public shall be provided. Cones, rubber "Z" guards or similar protective devices shall be placed along the newly painted stripe to prevent traffic from crossing the wet paint.

3.2.5 Corrective Measures: Stripes that fail to meet the specifications, including the permissible tolerances and the appearance requirements, or are marred or damaged by traffic or from other causes, shall be corrected. Drip and spattered paint shall be removed.

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DIVISION 03 CONCRETE



SECTION 03105 CONCRETE FORMWORK

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of structural cast-in-place concrete formwork. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Form Materials shall conform to ACI 301 and shall be made especially for concrete form usage. The term "forms-in-place" shall be construed to mean form surface contact area of with concrete and shall include both form erection and removal.

2.1.1 Corrugated or Formed Steel Sheets: ASTM A 361, G90 Coating, with depth of corrugations not less than 1/2 inch.

2.1.2 Plywood: DOC PS 1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade. Minimum thickness shall be 3/4 inch. Steel lining on wood sheathing shall not be used.

2.1.3 Asbestos Cement Formboard: ASTM C 220, 1/4 inch thick, Type U or Type F.

2.1.4 Cylindrical Columns and Supports: Round-section members with paper or fiber tubes, constructed of laminated plies using water-resistant adhesive with wax-impregnated exterior. Reusable fiberglass column forms with a single vertical seam may be used.

2.1.5 Pan Type: 16-gauge steel with 1/4-inch thick concrete form hardboard conforming to AHA A135.4, or fiberglass at least 0.11 inch thick.

2.1.6 Lumber: Straight, uniform width and thickness and free from knots, offsets, holes, dents, and other surface defects. Minimum thickness shall be 1 inch.

2.1.7 Void Forms: Fiber voids shall be the product of a reputable manufacturer regularly engaged in the commercial production of fiber voids. The voids shall be constructed of double faced, corrugated fiberboard. The corrugated fiberboard shall be fabricated of paper liners, impregnated with paraffin, and laminated with moisture resistant adhesive, and shall have a board strength of 275 psi. Voids which are impregnated with paraffin after construction, in lieu of being constructed with paraffin impregnated fiberboard, are acceptable.

2.1.8 Slip Forms: Shall be defined as continuously moving form moved by mechanical device during concrete placement.

2.2 Formwork Accessories:

2.2.1 Form Ties: Form ties shall be metal, factory-fabricated, removable or snap-off and will leave holes not less than 1/4 inch nor more than 1 inch in diameter and not more than 1 inch deep. Removable tie rods shall be not more than 1-1/2 inches in diameter.

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2.2.2 Form releasing agents shall be commercial colorless formulations that will not bond with, stain or adversely affect concrete surfaces. Agents shall not impair subsequent treatment of concrete surfaces depending upon bond or adhesion nor impede the wetting of surfaces to be cured with water or curing compounds.

2.2.3 Fillets for Chamfered Corners shall be wood strips or rigid plastic type.

2.2.4 Dovetail Anchor Slots shall be galvanized steel material with release-tape-sealed slots and bent tab anchors, securable to concrete formwork.

2.2.5 Flashing Reglets shall be galvanized steel with release-tape-sealed slots and alignment splines for joints, securable to concrete formwork.

2.2.6 Anchorages, Spikes, Nails, and Lag and Through Bolts shall be as required to maintain formwork in place.

3.0 EXECUTION:

3.1 Inspection: Forms shall be cleaned and reconditioned between usage. Temporary ports shall be provided in formwork to facilitate cleaning and inspection.

3.2 Preparation:

3.2.1 Formwork shall be constructed to maintain tolerances in accordance with ACI 301. Forms shall not be reused if there is any evidence of surface wear and tear or defects which would impair the quality of the surface. Unless pre-approved all formwork shall be removed.

3.2.2 Form Coating Shall Be Applied prior to placing reinforcing steel, anchoring devices, and embedded items. Do not apply form coating where concrete surfaces are scheduled to receive special finishes. Wood forms shall be wetted prior to concrete placement unless freezing weather is incurred.

3.2.3 Chamfer Strips shall be provided on external corners that will be exposed.

3.3 Form Removal: Forms shall be removed preventing injury to the concrete and ensuring the complete safety of the structure. Formwork for columns, walls, side of beams and other parts not supporting the weight of concrete may be removed when the concrete has attained sufficient strength to resist damage from the removal operation but not before at least 24 hours has elapsed since concrete placement. Supporting forms and shores shall not be removed from beams, floors and walls until the structural units are strong enough to carry their own weight and any other construction or natural loads. Supporting forms or shores shall not be removed before the concrete strength has reached 70 percent of design strength, as determined by field-cured cylinders or other approved methods.



SECTION 03130 CONCRETE ACCESSORIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of concrete accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Joint Materials:

2.1.1 Rubberized Asphalt Compound: ASTM D 1190.

2.1.2 Polyurethane-Base Elastomeric: Fed. Spec. TT-S-230.

2.1.3 Asphalt Compound: ASTM D 1190.

2.1.4 Liquid Neoprene: Fed. Spec. SS-S-200.

2.2 Sealer: Fed. Spec. TT-S-00227.

2.3 Waterstop:

2.3.1 Polyvinyl Chloride: 1,750 psi minimum tensile strength, working temperature range from minus 51 F to plus 175 F, ribbed flaps on one side only.

2.3.2 Extruded Neoprene: 2,000 psi minimum tensile strength, 60 Shore A hardness, flush or recessed from joint.

3.0 EXECUTION:

3.1 Preparation: All surfaces of joints to which sealer is to be bonded shall be absolutely clean, dry, and free of loose concrete, dirt, oil, or other foreign material.

3.2 Application:

3.2.1 All Joints shall be in accordance with ACI 318.

3.2.2 Accessible Edges of expansion joint shall be sealed with sealer.

3.2.3 The Ambient Temperature shall be between 50 and 100 F when the primer and joint sealing compound are applied.

3.2.4 Contraction Joints shall have a minimum width of 1/8 inch and a depth of 1/4 the slab thickness or 1-1/2 inches minimum, whichever is greater.

3.2.5 Construction Joints shall be doweled construction.

3.2.6 Expansion Joint Filler shall be installed below the finished floor with a temporary wood strip to form a groove not less than 3/4 inch deep.

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3.2.7 Waterstops shall be installed so as to form a continuous water-tight diaphragm.



SECTION 03205 CONCRETE REINFORCEMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of concrete reinforcement. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendation. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Reinforcement Materials:

2.1.1 Reinforcing steel shall be deformed bars conforming to ASTM A 615/A 615M or ASTM A 706/A 706M, grades and sizes as indicated. Cold drawn wire used for spiral reinforcement shall conform to ASTM A 82. In highly corrosive environments or when directed by the Contracting Officer, reinforcing steel shall conform to ASTM A 767/A 767M or ASTM A 775/A 775M as appropriate.

2.1.2 Welded Steel Wire Fabric: ASTM A 185 for plain type and ASTM A 497 for deformed type fabric. Epoxy Coated welded wire fabric shall comply with ASTM 884/A 884M, Class A plain or deformed steel.

2.1.3 Stirrup Steel: ASTM A 82.

2.1.4 Dowel Steel: ASTM A 675, Grade 80 or ASTM A 499. Steel pipes dowels shall be closed at each end with mortar, metal, or plastic cap, and shall conform to ASTM A 53, Schedule 80.

2.1.5 Epoxy-coated Fabricated Reinforcing Bars: ASTM A934/A 934M and as follows: Steel Reinforcement, ASTM A615/A 615 M, Grade 60, deformed.

2.1.6 Fiber Reinforcement: Carbon-Steel Fiber; ASTM A820 deformed, minimum 2.4 inches long. Synthetic Fiber; fibrillated polypropylene engineered and designed for use in concrete complying with ASTM C1116, Type III, ½ to 1-1/2 inches long.

2.2 Reinforcement Accessories:

2.2.1 Wire Ties: 16 gauge black annealed wire or epoxy coated when epoxy coated steel is in use.

2.2.2 Chairs, Bolsters, Bar Supports, and Spacers shall be provided in conformance with ACI SP-66. Supports for formed surfaces exposed to view shall be plastic protected wire or stainless steel. Precast concrete, if used for bar supports, shall be wedge-shaped, not larger than 3-1/2 inches by 3-1/2 inches in thickness and with an embedded hooked tie wire for anchorage. Epoxy accessories shall be provided for epoxy coated steel reinforcement.

3.0 EXECUTION:

3.1 Regulations:

3.1.1 Reinforcement Detailing and Placement shall conform to ACI 318 and Concrete Reinforcing Steel Institute's CRSI MSP-1 "Manual of Standard Practice".

3.1.2 Laps or Splices shall conform to ACI 318.

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3.1.3 Welding shall comply with American Welding Society's AWS D1.4.

3.2 Installation: Reinforcement shall be placed in accordance with ACI 318M at locations shown plus or minus one bar diameter.

3.2.1 Reinforcement shall be free from loose or flaky rust and mill scale.

3.2.2 In Slabs, Beams, and Girders, reinforcing steel shall not be spliced at points of maximum stress.

3.2.3 Dowels and Tie-Bars in slabs on grade shall be placed at right angles to construction joints.

3.2.4 Wire Fabric Reinforcement shall be continuous between expansion, construction, and contraction joints in slabs on grade and between expansion joints in other slabs. Lap splices shall be made in such a way that the overlapped area equals the distance between the outermost cross-wires plus 2 inches. Laps shall be staggered to avoid continuous laps in either direction.

3.2.5 Reinforcing Bars shall not be continuous through expansion joints but shall be 2 inches clear from the joint.



SECTION 03227 STEEL STRESSING TENDONS FOR PRESTRESSED CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of concrete steel stressing tendons and accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendation. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Stressing Tendons and Accessories shall conform to the requirements of ACI 318/318R except as specified. Stressing Tendons shall be clean and free of loose rust, scale or pitting. Unbonded tendons shall be permanently protected from corrosion with an approved applied coating.

2.1.1 Seven-wire stress-relieved strand and strand assemblies shall conform to ASTM A 416/A 416M, Grade 250 or 270, strand diameter as shown. Strand assemblies may be either shop or field assembled with anchor fittings positively attached to strands.

2.1.2 Stress-relieved wire and wire assemblies shall conform to ASTM A 421, Type BA or WA, wire diameter as shown. Wire assemblies shall be shop assembled with anchor fittings positively attached to wires.

2.1.3 High-strength steel bars shall conform to ASTM A 722/A 722M, Type I or II, and meeting all supplementary requirements.

2.2 Tendon Ducts: Tendon ducts shall be of ferrous metal, capable of transmitting forces from the grout to the surrounding concrete. Ducts shall be flexible enough to conform to the tendon profile and strong enough to maintain their shape without deforming, sagging, or collapsing during concrete placement and vibration. The inside diameter of the ducts shall be large enough to provide an internal area at least twice the gross area of multiple wire, bar or strand assemblies. Ducts shall be at least 1/4-inch larger than the diameter of a single wire, bar or strand placed in the ducts. Ducts shall be designed for watertight connections with all fittings. Galvanized ducts will not be permitted.

2.3 Anchorage and Couplers shall be metal of proven corrosion resistance and compatible with the stressing tendons, capable of fully developing the minimum guaranteed ultimate strength of tendons without excessive slip and approved. Anchorages shall be the button-head, wedge, nut and thread, grip nut, thread-bar, threaded plate or other approved type and shall be provided with bearing plates bars, rings, bells or other positive-attaching anchor fittings. Couplers shall be provided with housings long enough to permit the necessary movements and fittings allowing for complete grouting of all components.

2.4 Grout for grouting post-tensioned tendons shall consist of a mixture of Portland cement, shrinkage compensating admixture and potable water of which final proportions shall be based on test results of sample mixtures. Cement shall conform to ASTM C 150, Type I or II. The shrinkage compensating admixture shall produce a 2 percent minimum and a 10 percent maximum unconfined expansion when tested in accordance with ASTM C 940. Admixture shall not contain aluminum powder, chlorides, fluorides or nitrates, may be dispensed in solid or liquid form and must be approved by the Contracting Officer prior to its use. The water content shall be the minimum necessary for proper placement but the water-cement ratio shall not exceed 0.50 by weight. The pumpability of grout shall be determined in accordance with ASTM C 939. The efflux time of a grout sample immediately after mixing shall not be

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less than 11 seconds. The minimum 7-day compressive strength of 2-inch grout cubes, molded, cured and tested in accordance with ASTM C 109/C 109M shall be 2500 psi.

3.0 EXECUTION:

3.1 Installation: Stressing tendons and accessories shall be installed or placed as specified and as shown on contract and approved installation drawings. Installation details of stressing tendons and accessories not specified or shown shall be in accordance with ACI 318/318R. Welding shall not be performed near or adjacent to stressing tendons. Stressing tendons shall not be installed until all welding has been completed on supports or any part which might be in contact with the tendons.

3.1.1 Prestressing Method and Equipment; Descriptions of the proposed prestressing methods and equipment indicating the manufacturer of all prestressing equipment, including tensioning jacks, stress measurement gages, dynamometers and load cells or other devices for measuring stressing loads, shall be provided by the contractor. Descriptions shall include certified calibration records for each set of jacking equipment and testing curves for stress measurement gages which show that the gages have been calibrated for the jacks for which they are to be used.

3.1.2 Anchorage must be set in a plane normal to the axis of the tendons such that uniform bearing on the concrete is assured. Positive connecting anchorages rather than gripping types shall be used for anchoring embedded ends of tendons. Anchorages and anchor fittings shall be permanently protected against corrosion. Parallel wire anchorage wedges or cores shall be recessed within the members.

3.1.3 Stressing Tendons and Ducts; Protective coverings and wrappings shall be removed and each stressing tendon shall be closely inspected to see that nicks, scoring, pits or other damage does not exist. High-strength steel bars shall be closely inspected to assure that they are not bent and that threaded ends are in satisfactory condition immediately prior to installation. Strand, wire and bar tendons shall be shop or field assembled as required and positively attached to anchorages. Type WA wire assemblies shall be anchored only with wedge type anchorages. Stressing tendons and ducts shall be assembled to required shapes and dimensions and placed where indicated on drawings within specified tolerances and adequately supported. Ducts shall be securely fastened at close intervals and grout openings and vents must be securely anchored to ducts and to either the forms or reinforcing steel to prevent displacement during concrete placing. The ends of ducts shall be effectively protected to prevent entry of water, concrete, grout or debris. Wires of parallel-wire assemblies shall not be spliced. Steel bar tendons may be joined by couplers where shown or approved, provided they are capable of developing the guaranteed minimum ultimate strength of the bars. Strands to be spliced shall have the same lay or direction of twist and the ends shall be cut by shears or abrasive grinders. No more than one strand shall be spliced in any one member where single strand tensioning is employed. Strand splices shall be capable of developing the full ultimate strength of the strand. Slippage of the splice shall be checked and correction made for differential slippage. Where multiple strand tensioning is used, not more than 10 percent of the strands in any member shall be spliced.

3.1.4 Tensioning Tendons: Tensioning of stressing tendons shall be as specified and shown. The stress induced in the tendons by any method of tensioning shall be determined independently by both (1) measurement of tendon elongation and (2) direct measurement of force using a pressure gauge or load cell. If the results of these two measurements do not check each other and the theoretical values within 5 percent, the operation shall be carefully checked and the source of error determined and corrected before proceeding further. Concrete cylinder tests shall indicate a breaking strength of at least 80% of the design compressive strength before transfer of stress. This ensures that the concrete strength is adequate for the requirements of the anchorages, or for transfer through bond as well as meeting camber or deflection requirements. The final prestress load in each unit after seating shall be as shown. Safety measures shall be taken by the Contractor to prevent accidental injury caused by failure of a stressing tendon or tendon



component. The exposed ends of stressing tendons and anchorages shall be protected from damage during stressing operations to prevent failure.

3.1.4.1 Pretensioning: Strand tendons may be tensioned by jacking of groups of strands or may be tensioned individually by means of a single-strand jack. Before final tensioning, all tendons shall be brought to a uniform initial tension of approximately 1,000 pounds per strand/per 200 feet of bed, with a minimum of 1,000 pounds and a maximum of 3,000 pounds per strand. The force corresponding to the initial tension shall be measured by a dynamometer or other approved method to aid in determining the final elongation. After this initial tensioning, the tendons shall be stressed to the total tension indicated on the drawings using hydraulic or mechanical equipment with gauges or dynamometers graduated and calibrated to accurately determine the load applied. Draped pretensioned strands shall be tensioned partially by jacking at the end of the bed and partially by uplifting or depressing strands, or they shall be held in their draped positions by means of rollers, pins or other approved methods and tensioned entirely by jacking. Approved low-friction devices shall be used at all points of change in slope of draped strands while tensioning draped strands, regardless of the tensioning method used. Cable stress shall be maintained between anchorages until the concrete has reached the specified compressive strength.

3.1.4.2 Detensioning: Forces from pretensioned strands shall be transferred to the concrete by either the multiple-strand release or the single-strand release method. The stress transfer shall not be performed until concrete strength, as indicated by test cylinders, has reached the specified transfer strength. If concrete has been heat-cured, the detensioning shall be done immediately following the curing period while the concrete is still warm and moist. During detensioning, the prestressing forces shall be kept nearly symmetrical about the vertical axis of the member and shall be applied in a manner that will minimize sudden loading. Eccentricity about the vertical axis shall be limited to one strand.

- a. Multiple-Strand Release: In this method, all strands shall be detensioned simultaneously and the load transferred gradually to the concrete by hydraulic jacking.
- b. Single-Strand Release: In this method, all strands shall be detensioned by slow heat-cutting the strands in accordance with a pattern and schedule as approved. The strands shall be heated using a low-oxygen flame until the metal gradually loses its strength, causing release of the strands to occur gradually. The low-oxygen flame shall be played along the strand for a minimum of five inches. Strands shall be so heated that the failure of the first wire in each strand shall occur after the torch has been applied for a minimum of five seconds.

3.1.4.3 Post-Tensioning: Tensioning shall not be performed until the concrete has reached the required strength at transfer of stress. Before final tensioning of tendons, all tendons shall be brought to a uniform initial tension of approximately 10 percent of the full load. The force corresponding to the initial tension shall be measured by a dynamometer or other approved method as a starting point in determining final elongation. A temporary overstress above the final prestress force as approved by the Contracting Officer shall be used to overcome stress losses. The units shall be tensioned until the proper elongations and jacking pressures are attained and reconciled within the limits stated above. Straight tendons may be tensioned from one end. Curved or draped tendons shall be stressed by simultaneous jacking from both ends using a common pump with identical hoses and jacks, unless otherwise shown.

3.1.5 Grouting Post-Tensioned Tendons Grouting between each tendon and its enclosing duct shall be performed within 5 days after completion of the tensioning operation. Grouting shall not be performed if air temperature below 45 degrees F is anticipated within 48 hours after grouting unless an approved method of temperature control is used. The grout shall be mixed in a mechanical mixer of a type that will produce uniformly and thoroughly mixed grout. First water shall be placed in the mixer followed by cement and admixture. Grout shall be continuously agitated until it is pumped. Grout that has begun to set shall be discarded. Just before grouting, the ducts shall be flushed with clean water and then blown clear by compressed air to removed excess water. With the grout vent open at one end of duct, grout shall be applied continuously under moderate pressure at the other end until all entrapped air is forced out as

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indicated by a uniform flow of grout from the discharge vent. The discharge vent shall then be closed and the pressure raised to 50 psi minimum and held for at least 1 minute. The injection point shall then be closed by an approved means to prevent any loss of grout. For a period of at least 3 days after grouting the tendons, the prestressed members shall not have equipment or other loads placed on them. A longer period may be required, depending upon the method of curing and magnitude of imposed stresses.

3.1.6 Accuracy of Stress and Elongation Measurement

3.1.6.1 Stress Measurement Hydraulic gauges, dynamometers, load cells or other devices for measuring stressing load shall have an accuracy of reading within two percent for stress measurement. Gauges are required to have been calibrated for the jacks for which they are used within a period not exceeding 12 months. Recalibration shall be performed at any time that a gauging system shows indication of erratic results in the opinion of the Contracting Officer. Gauges shall indicate loads directly in pounds or be furnished with a conversion chart.

3.1.6.2 Elongation Measurement After the initial force has been applied to a tendon, reference points for measuring elongation due to additional tensioning forces shall be established. They shall be located according to the method of tensioning and type of equipment. The system used shall be capable of measuring the true elongation plus or minus 1/16-inch.

3.1.7 Prestressing Operations Records; The contractor shall compile and submit complete prestressing operations records to the Contracting Officer. These records shall show the manufacturer, identification and description of materials and equipment including prestressing tendons and jacking and load measuring equipment; location of prestressing tendons; initial design tensioning loads, final design tensioning loads and actual tensioning loads for tendons; dates tensioning loads applied; and theoretical and actual elongations for tendons.



SECTION 03305 CAST-IN-PLACE CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cast-in-place concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Admixtures:

2.1.1 Air-Entraining Admixture: ASTM C 260.

2.1.2 Accelerating Admixture: ASTM C 494 Type E.

2.1.3 Water-Reducing or Retarding Admixture: ASTM C 494 Type D.

2.2 Concrete Mixture:

2.2.1 Portland Cement:

2.2.1.1 Cement shall comply with ASTM C 150, Type I, low alkali with a maximum 15 percent amount of tricalcium aluminate, or Type II, low alkali or Type V. White portland cement shall meet the above requirements except that it may be Type I, Type II or Type III, low alkali. White Type III shall be used only in specific areas of the structure, when approved in writing.

2.2.1.2 High-Early-Strength Portland Cement ASTM C 150, Type III with tricalcium aluminate limited to 8 percent, low alkali. Type III cement shall be used only in isolated instances and only when approved in writing.

2.2.2 Normal Weight Aggregate: ASTM C 33. Lightweight fine and coarse aggregates shall conform to the quality and gradation requirements of ASTM C 330.

2.2.3 Water: Potable, free from deleterious substances.

2.2.4 Proportion of Cement, Aggregate, and Water shall comply with ACI 318.

2.2.5 Specified compressive strength (f'_c) shall be as selected with compressive strength measured at 28 days. Concrete slabs on-grade shall have a 28-day flexural strength of 650 psi. Concrete made with high-early strength cement shall have a 7-day strength equal to the specified 28-day strength for concrete made with Type I or II portland cement. Compressive strength shall be determined in accordance with ASTM C 39. Flexural strength shall be determined in accordance with ASTM C 78. Water-cement ratio by weight shall be 0.40 unless otherwise approved by contracting officer. Slump shall be determined in accordance with ASTM C 143 as measured at point of placement. The air content shall be between 5.5 and 8.5 percent. Air content for concrete shall be determined in accordance with ASTM C 173.

2.3 Concrete Accessories:

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2.3.1 Bonding Agent shall be two component epoxy resin, two component polysulphide-epoxy, polysulphide polymer epoxy, or polysulphide polymer epoxy resin.

2.3.2 Vapor Barrier shall consist of 6-mil polyethylene sheet, complying with ASTM C 171, or heavy kraft papers laminated together with glass fiber and overcoated with polyethylene.

2.3.3 Floor Hardener:

2.3.3.1 Metallic Floor Hardener: Magnesium fluosilicate and zinc fluosilicate with water.

2.3.3.2 Non-Metallic Floor Hardener shall be used when hardened floor is subject to light or medium floor traffic.

2.3.4 Colored Pigments: Use coloring pigments that are finely ground, nonfading mineral oxides interground with cement.

3.0 EXECUTION:

3.1 Concrete Placement:

3.1.1 Formwork, Reinforcing Steel, and Embedment Items shall be inspected before placing concrete.

3.1.2 Concrete Placement shall comply with ACI 304 and 301.

3.1.3 Cold Weather Placing shall be in compliance with ACI 306. Special protection measures, approved by the Contracting Officer, shall be used if freezing temperatures are anticipated before the expiration of the specified curing period. The ambient temperature of the air where concrete is to be placed and the temperature of surfaces to receive concrete shall be not less than 40 degrees F. The temperature of the concrete when placed shall be not less than 50 degrees F nor more than 75 degrees F. Heating of the mixing water or aggregates will be required to regulate the concrete placing temperature. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salt, chemicals or other materials shall not be incorporated in the concrete to prevent freezing. Upon written approval, an accelerating admixture conforming to ASTM C 494, Type C or E may be used, provided it contains no calcium chloride.

3.1.4 Hot Weather Placing shall be in compliance with ACI 305. Mixed concrete shall be discharged within 1-1/2 hours or before the mixer drum has revolved 300 revolutions, whichever comes first after the introduction of the mixing water to the cement and aggregates. When the concrete temperature exceeds 85 degrees F, the time shall be reduced to 45 minutes. Concrete shall be placed within 15 minutes after it has been discharged from the transporting unit.

3.1.5 Concrete shall be handled from mixer or transporting unit to forms in a continuous manner until the approved unit of operation is completed. Adequate scaffolding, ramps and walkways shall be provided so that personnel and equipment are not supported by in-place reinforcement. Placing will not be permitted when the sun, heat, wind, or limitations of facilities furnished by the Contractor prevent proper consolidation, finishing and curing. Sufficient placing capacity shall be provided so that concrete can be kept free of cold joints.

3.2 Concrete Finishes shall comply with ACI 301.

3.2.1 Float Finish shall be applied to monolithic slab surfaces receiving trowel finish or slab surfaces to be covered with membrane or elastic waterproofing.



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3.2.2 Trowel Finish: Power-driven troweling or hand troweling shall be applied to monolithic slab surfaces to be exposed to view and slab surfaces covered with resilient flooring.

3.2.3 Broom Finish shall be applied to exterior concrete platforms, stairs, ramps, etc.

3.2.4 Rough Slab Finish: Slabs shall be screeded with straight edges so that no coarse aggregate is visible and slab is suitable to receive fill and mortar setting beds.

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SECTION 03334 CONCRETE CURING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for concrete curing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Impervious Sheet Materials: ASTM C 171.

2.2 Burlap: AASHTO M 182

2.3 Membrane-Forming Compound: ASTM C 309, Type I.

3.0 EXECUTION: Concrete shall be cured by protection against loss of moisture and rapid temperature change for a period of not less than 7 days for normal concrete or 3 days for high early strength concrete in accordance with ACI 301 procedures.

3.1 Absorptive Cover shall be placed to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.

3.2 Horizontal Surfaces shall be cured by ponding, by covering with a 2-inch minimum thickness of continuously saturated sand, or by covering with polyethylene sheet, saturated burlap, or waterproof paper.

3.3 Formed Surfaces shall be cured by moist curing with forms in place for full curing period. Wooden forms shall be kept wet at all times during curing.

3.4 Unformed Surfaces, such as slabs and other flat surfaces, shall be cured by application of appropriate curing compound.

3.5 Membrane-Curing Compound shall not be applied where a protective coat or waterproofing is to be expected.



SECTION 03351 EXPOSED AGGREGATE CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of exposed aggregate finish on concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. In the case of conflicts between work described in Section 03305 Cast-In-Place Concrete and this section, 03305 shall prevail.

2.0 PRODUCTS:

2.1 Cement: ASTM C 150, Type I Portland cement.

2.2 Admixtures: ASTM C 494, ASTM C 260.

2.3 Aggregate: ASTM C 33.

2.4 Water: Clean, potable.

2.5 Cleaning Agent: Commercial grade muriatic acid, mixed 1 part acid to 10 parts water.

2.6 Bonding Agent: Polyvinyl acetate emulsion.

2.7 Surface Aggregate: As directed by contracting officer.

3.0 EXECUTION:

3.1 Concrete Shall Be Placed and Vibrated to ensure that concrete is consolidated and that all voids are filled

3.2 Formed Concrete:

3.2.1 Leave Forms in Place until removal can be effected without damage to the shape or strength of the concrete but, in no case, in less than 24 hours. A longer period will be required when lower ambient temperatures are experienced.

3.2.2 Immediately After Removal of Form Work, remove surface cement paste from around aggregate by either washing with water and scrubbing with a stiff bristle brush, wetting and scrubbing surface with acid etch solution, or sandblasting surface.

3.2.3 Cover Concrete and continue curing procedures.

3.3 Slabs:

3.3.1 Allow Concrete to Cure until slab can be loaded without structural damage but, in no case, in less than 24 hours.

3.3.2 Uncover Slab and remove surface cement paste from around aggregate, using methods described for the removal of paste from formed concrete.

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3.3.3 Cover Concrete and continue curing procedures.

3.4 Exposure: Do not expose more than 40 percent of aggregate surface.

3.5 Surface-Applied Aggregate:

3.5.1 Concrete surfaces to which additional concrete is to be bonded shall be prepared for receiving the next lift by cleaning the construction joint surface with either air-water cutting, sandblasting, high-pressure water jet, or other approved method. Concrete at the side of vertical construction joints shall be prepared as approved by the Contracting Officer. Air-water cutting shall not be used on formed surfaces or surfaces congested with reinforcing steel. Regardless of the method used, the resulting surfaces shall be free from all laitance and inferior concrete. Cleaned surfaces of well-bonded coarse aggregate shall be exposed and make up at least 10-percent of the surface area, distributed uniformly throughout the surface. The edges of the coarse aggregate shall not be undercut.

3.5.2 Wetting Surface The surface of horizontal construction joints shall be kept continuously wet for the first 12 hours during the 24-hour period prior to placing fresh concrete. The surface shall be washed completely clean as the last operation prior to placing the next lift.

3.5.3 Bonding Agent For heavy duty floors and two-course floors a thin coat of neat cement grout of about the consistency of thick cream shall be thoroughly scrubbed into the existing surface immediately ahead of the topping placing. The grout shall be a 1:1 mixture of portland cement and sand passing the No. 8 sieve. The topping concrete shall be deposited before the grout coat has had time to stiffen.

3.5.4 Provide Proper Curing Conditions for exposed aggregate surface.

3.6 Sample: A sample of finish expected shall be erected on site. Completed work shall approximate the sample. Work determined by the contracting officer not to be similar shall be removed and replaced without further expense to the owner.



SECTION 03352 RUSTICATED CONCRETE FINISHES

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of rusticated concrete finishes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Overlaid Plywood: DOC PS 1, B-B High Density Overlaid Concrete Form, Class I.

2.2 Plywood: DOC PS 1, B-B (Concrete Form) Plywood, Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection mark.

2.3 Chamfer Strips: Clear white pine with surface against concrete to be planed, metal, PVC, or rubber.

2.4 Form Liners: Provide commercially available molds and form-facing materials of metal, plastic, mood, or another material that is nonreactive with concrete and dimensionally stable to produce repetitive concrete surfaces.

3.0 EXECUTION:

3.1 Form Construction: Forms shall be constructed to provide required sizes, shapes, lines, and dimensions and to provide continuous, straight, smooth exposed surfaces. Forms shall be fabricated for easy removal without hammering or prying against concrete surfaces. The number of joints shall be minimized. Joints shall be made watertight to prevent leakage of cement paste. Provisions shall be made for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, inserts, and other features required in the work.

3.2 Form Coatings: Forms shall be oiled with form-coating compounds that will not bond with, stain, nor adversely effect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

3.3 Finish: Fins and other projections shall be completely removed and smoothed. A smooth rubbed finish shall be provided not less than one day after form removal.

3.4 Sample: A sample of finish expected shall be erected on site. Completed work shall approximate the sample. Work determined by the contracting officer not to be similar shall be removed and replaced without further expense to the owner.

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SECTION 03353 SOLID BOARD CONCRETE FINISHES

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of solid board concrete finishes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Overlaid Plywood: DOC PS 1, B-B High Density Overlaid Concrete Form, Class I.

2.2 Plywood: DOC PS 1, B-B (Concrete Form) Plywood, Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection mark.

2.3 Fiberboard: AHA A135.4, tempered, waterproof, screen back, concrete form hardboard.

3.0 EXECUTION:

3.1 Form Construction: Forms shall be constructed to provide required sizes, shapes, lines, and dimensions and to provide continuous, straight, smooth, exposed surfaces. The number of joints shall be minimized. Joints shall be made watertight to prevent leakage of cement paste. Metal form patches are not allowed.

3.2 Form Coatings: Forms shall be coated with form-release-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

3.3 Finish: Fins and other projections shall be completely removed and smoothed. A smooth rubbed finish shall be provided no later than one day after concrete placement.



SECTION 03354 FLEXURAL CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of flexural concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cement: ASTM C 150.

2.2 Fine and Coarse Aggregates: ASTM C 33.

2.3 Admixtures:

2.3.1 Air-Entraining Agents: ASTM C 260.

2.3.2 Retarders: ASTM C 494.

2.3.3 Pozzolans: ASTM C 618.

2.4 Mixture Proportions:

2.4.1 Flexural concrete designs shall conform to the requirements specified for Normal Weight Concrete. Proportions shall be based on flexural strength as determined by test specimens (beams) fabricated in accordance with ASTM C 192 and tested in accordance with ASTM C 78. Procedures given in ACI 211.1 shall be modified as necessary to accommodate flexural strength.

2.4.2 Concrete slabs on-grade shall have a 28-day flexural strength of 650 psi. Concrete made with high-early strength cement shall have a 7-day strength equal to the specified 28-day strength for concrete made with Type I or II portland cement. Compressive strength shall be determined in accordance with ASTM C 39. Flexural strength shall be determined in accordance with ASTM C 78.

3.0 EXECUTION:

3.1 Placing: Concrete shall be deposited in the forms or in front of slip-form pavers within 45 minutes from the time all ingredients are charged into the mixing drum. Concrete shall be deposited as close as possible to its final position. The placement of the concrete shall be continuous and at a uniform rate without unscheduled stops. Concrete shall be consolidated with mechanical vibrating equipment immediately after spreading.

3.2 Finishing Operations shall be started immediately after placement of the concrete. Finishing shall be by the machine method. Where directed, the hand method will be permitted on odd slab widths or shapes. In event of breakdown of the mechanical equipment, hand finishing will be allowed. The sequence of operations shall be as follows: straight edging, bull floating, floating, texturing or troweling, and, where directed, edging of joints.

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3.3 Curing: Concrete shall be protected against loss of moisture and rapid temperature changes for at least 7 days from the beginning of the curing operation. Unhardened concrete shall be protected from rain and flowing water. Protection shall be provided as necessary to prevent cracking due to temperature changes during the curing period.



SECTION 03356 GROUT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of grout for bases and joints. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Grouts to be used in structural applications shall be approved for use by contracting officer.

2.1 Premixed Grout shall contain cement, sand, and admixtures to produce a non-shrinking grout with the addition of potable water. Expansion shall be limited to 0.10 percent at 28 days.

2.1.1 Metallic Grout shall be non-rusting, containing finely graded metallic aggregate with a compressive strength of 12,000 psi at 28 days.

2.1.2 Non-Metallic Grout shall have a compressive strength of 13,000 psi at 28 days.

2.1.3 Fluid Grout shall be a non-metallic grout with flowable consistency.

2.2 Field-Mixed Grout: Grout shall contain 1 part cement to 3 parts sand by volume, with the water content such that a mass of mortar tightly squeezed in the hand will retain its shape but will crumble when disturbed.

3.0 EXECUTION:

3.1 Baseplates shall be grouted with non-shrinking grout. Grout shall be placed so that all spaces and cavities below the top of base plates are completely filled without voids. Forms shall be provided where structural components of base plates will not confine the nonshrinking grout.

3.2 Joints shall be filled with field-mixed grout by tamping or ramming with a bar or rod until the joint is completely filled. Grout surface shall be smooth-finished and level with the adjoining material.

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SECTION 03362 SHOTCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of shotcrete placed concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Portland Cement: Portland cement shall meet the requirements of ASTM C 150, Type I or III.

2.2 Pozzolan Other Than Silica Fume: Pozzolans shall conform to ASTM C 618, Class C or F.

2.3 Ground Granulated Blast-Furnace Slag: Slag shall conform to ASTM C 989.

2.4 Silica Fume: Silica may be furnished as a dry, densified material or as a slurry. Silica fume, unprocessed, or before processing into a slurry or a densified material, shall conform to ASTM C 1240.

2.5 Normal-Weight Aggregates: ASTM C33, Class 4X. Provide aggregates from a single source.

2.6 Lightweight Aggregates shall comply with ASTM C330.

2.7 Water: Fresh, clean, potable mixing water or nonpotable water which meets the requirements of COE CRD-C 400 shall be used.

2.8 Admixtures: Admixtures to be used, when required or approved, shall comply with the appropriate sections of ASTM C 1141. Except as otherwise accepted, soluble admixtures shall be dissolved in water before introduction into the shotcrete mixture.

2.9 Curing Materials:

2.9.1 Impervious Sheet Materials ASTM C 171, type optional except polyethylene film, if used, shall be white opaque.

2.9.2 Membrane-Forming Curing Compound ASTM C 309, Type 1-D or Type 2.

2.10 Reinforcement:

2.10.1 Steel Fiber Reinforcement shall meet the requirements of ASTM A 820 and ASTM C1116, Type 1 not less than 1 inch long.

2.10.2 Synthetic Fibers, polypropylene fibers designed for secondary reinforcement of shotcrete, complying with ASTM C 1116, Type III, not less than 1-1/2 inches long.

3.0 EXECUTION:

3.1 Batching and Mixing Methods: The shotcrete shall be produced by either the wet-mix process or the dry-mix process. Aggregate and cementitious materials may be batched by mass or by volume. Equipment for batching by mass shall be capable of the accuracy specified in ASTM C 94. Volumetric equipment shall be



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capable of batching with the accuracy specified in ASTM C 685. The mixing equipment shall be capable of thoroughly mixing the materials in sufficient quantity to maintain placing continuity and be capable of discharging all mixed material without any carryover from one batch to the next.

3.2 Certified Nozzlemen: All nozzlemen shall be certified in accordance with ACI 506.3R. Qualifications of additional nozzlemen throughout the job shall be similarly submitted for approval.

3.3 Test Panels: Specimens of the test panels shall be made by each application crew using the equipment, materials, mixture proportions, and procedures for each mixture being considered, and for each shooting position to be encountered in the job.

3.4 Accelerators: When accelerating admixtures are to be used; the Contractor shall establish the accelerator compatibility of the job cement and the proposed accelerators using ASTM C 266, except as modified herein. The powdered accelerator shall be blended with 50 grams of cement until uniform and 15 milliliters of water shall then be added. The liquid accelerator shall first be mixed with 15 milliliters of water and then added to 50 grams of cement. Three percent of the proposed accelerator by mass of cement shall be used as a starting point. Mixing shall be accomplished within 15 seconds. The specimen shall be molded within 1 minute of adding the mixing water. If initial set is 2 minutes or less and a final set is 10 minutes or less, the accelerator is considered compatible. If these values are not achieved in the first test, additional tests shall be run using 2 percent and 4 percent of accelerator.

3.5 Air Supply: Provide a supply of clean, dry air adequate for maintaining sufficient nozzle velocity for all parts of the work and for simultaneous operation of a suitable blowpipe for clearing away rebound.

3.6 Preparation of Surfaces: Earth shall be trimmed to line and grade and dampened. Existing concrete shall have unsound material and protrusions removed, edges tapered, and the surface dampened. Rock surfaces shall be cleaned to remove loose or drummy material, mud, running water, and other foreign matter that will prevent bond of the shotcrete. The rock surface shall be dampened prior to placement of shotcrete.

3.7 Finishing:

3.7.1 Natural Gun Finish Unless otherwise specified, undisturbed final layer of shotcrete as applied from nozzle without hand finishing shall be provided.

3.7.2 Cutting Screed: After the surface has taken its initial set (crumbling slightly when cut), excess material outside the forms and ground wires shall be sliced off with a downward cutting motion using a sharp-edged cutting screed.

3.7.3 Flash Coat: A thin coat of shotcrete containing finer sand applied from a distance greater than normal shall be applied to the surface as soon as possible after the screeding.

3.7.4 Float and Trowel Finish: Final surface finish shall be provided using wood float, rubber float or steel trowel. Troweling of thin sections of shotcrete shall be avoided unless both troweling and commencement of moisture curing take place within a relatively short period after placement of shotcrete.

3.8 Curing: Immediately after finishing, shotcrete shall be kept continuously moist for at least 3 days.

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SECTION 03372 SPECIALLY PLACED CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of pumped concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Pumps shall pump a minimum of 50 cubic yards of concrete per hour and shall be appropriately sized for the project.

2.1.1 Piston Type: Pump shall draw alternately from a hopper into the discharge pipe by a piston, operated mechanically or hydraulically.

2.1.2 Pneumatic Type: Pneumatic type placing equipment shall not be used. Defined as; Air pressure forcing the concrete into the discharge pipe.

2.1.3 "Squeeze" Type: Pump-powered rollers shall deform a concrete-filled flexible tube to push the concrete into the discharge pipe.

2.2 Discharge Lines: . The inside diameter of the pipe shall be at least 3 times the nominal maximum-size coarse aggregate in the concrete mixture to be pumped but not less than 4 inches. Use of flexible hose is to be minimized.

- a. 4- to 6-inch steel pipe.
- b. Aluminum pipe shall not be used.
- c. 4- to 5-inch rubber hose.

2.3 Hopper: 15 to 20 cu ft concrete capacity.

3.0 EXECUTION:

3.1 Slump Loss shall be less than one inch while passing through the pumping system.

3.2 When Concrete Must be Pumped long distance, a relay system shall be installed (one pump feeds into the hopper of another pump).

3.3 Placing Concrete by Pumping Methods shall comply with ACI 304.2R.

3.4 Grout Slurry: The use of an appropriate quantity of a grout slurry is required to prepare slick line for use at the beginning of each placement.



SECTION 03399 ROLLER-COMPACTED CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of roller compacted concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cementitious Materials:

2.1.1 Portland Cement Portland cement shall conform to ASTM C 150, Type I. Low alkali is to be used with aggregates when directed. In lieu of low-alkali cement, the Contractor may use a combination of portland cement that does not meet the low-alkali requirement with a suitable pozzolan or ground granulated blast-furnace slag (GGBFS) provided the following requirement is met. The expansion of the proposed combination shall be equal to or less than the expansion of a low-alkali cement meeting the requirements of ASTM C 150 when tested in conformance with ASTM C 441. These two tests shall be performed concurrently at an independent certified laboratory at the Contractor's expense. The Government reserves the right to confirm the test results and to adjust the percentage of pozzolan or GGBFS in the combination to suit other requirements at no additional cost to the Government. Portland cement shall be furnished in bulk.

2.1.2 Pozzolan Pozzolan shall conform to ASTM C 618, and, in addition, limits in Table 2A, Uniformity Requirements (for air content) shall apply to all fly ash. Table 1A, Supplementary Optional Chemical Requirement for Maximum Alkalies, shall apply when it is to be used with aggregates listed to require low-alkali cement]. Pozzolan shall be furnished in bulk.

2.1.3 Temperature of Cementitious Materials The temperature of the cementitious materials as delivered to the site shall not exceed 150 degrees F.

2.2 Admixtures: All chemical admixtures furnished as liquids shall be in a solution of suitable viscosity and dilution for field use as determined by the Contracting Officer.

2.2.1 Water-Reducing Admixture (WRA) shall meet the requirements of ASTM C 494, Type D.

2.2.2 Air-entraining admixture shall conform to ASTM C 260.

2.3 Water: Water for washing aggregates and for mixing and curing concrete shall be free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances and shall comply with COE CRD-C 400.

2.4 Aggregates

2.4.1 Composition Fine aggregate shall consist of natural sand, manufactured sand, or a combination of natural and manufactured sands. Coarse aggregate shall consist of gravel, crushed gravel, crushed stone, air-cooled blast-furnace slag, or a combination thereof.

2.4.2 Composition All concrete mixtures will be proportioned by the Contracting Officer except that proportions for the slipformed facing concrete mixture will be selected by the Contractor. RCC shall be composed of cementitious materials, water, fine and coarse aggregates, and possibly admixtures. The

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cementitious material shall be portland cement, or portland cement in combination with pozzolan. An admixture when approved or directed will be a water-reducing/retarding admixture. Air-entraining admixture will be used in the bedding concrete and other conventional concrete.

3.0 EXECUTION:

3.1 Concrete Mixing Plant: A continuous mixing plant(s) shall be capable of producing RCC of the same quality and uniformity as would be produced in a conventional redi-mix batch plant and shall be capable of producing a uniform continuous product (at both maximum and minimum production rates) that is mixed so that complete intermingling of all ingredients occurs without balling, segregation, and wet or dry portions.

3.2 Trucks: Truck mixers or agitators used for transporting central-mixed conventional concrete shall conform to the applicable requirements of ASTM C 94. Truck mixers shall not be used to transport concrete with larger than 37.5 mm (1-1/2-inch) nominal maximum size aggregate (NMSA) or 2 inch slump, or less. Nonagitator trucks may be used for transporting conventional central-mixed concrete over a smooth road when the hauling time is less than 15 minutes and the slump is less than 3 inches. Bodies of nonagitator trucks shall be smooth, water-tight, metal containers specifically designed to transport concrete, shaped with rounded corners to minimize segregation.

3.3 Belt Conveyors: Belt conveyors shall be designed and operated to assure a uniform flow of concrete from mixer or delivery truck to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete or loss of mortar at transfer points and the point of placing. The NMSA required in mixture proportions furnished by the Government will not be changed to accommodate the belt width.

3.4 Spreading and Remixing Equipment: The primary spreading procedure shall be accomplished by dozer. Graders or other equipment not specified may be used to facilitate the RCC spreading process only when approved. For open, unrestricted areas, the dozer shall be a minimum size and weight equivalent to a Caterpillar D-6. For restricted placement areas, such as placement of RCC near the dam crest or next to abutments, the dozer shall have as a minimum a size and weight equivalent to a Caterpillar D-4. There shall be a minimum of one operating dozer for each 200 cubic yards of RCC placed each hour. The dozers shall be equipped with well-maintained grousers. A front-end loader with operator shall be available to assist with deposition and spreading of RCC as needed in confined areas. The equipment shall be maintained in good operating condition. The equipment shall not leak or drip oil, grease, or other visible contaminants onto the RCC surface. All equipment used for spreading and remixing that leaves the surface of the structure for maintenance or repairs or, for any other reason, must be cleaned of all contaminants by an approved method before returning to the structure surface. Under no conditions shall a dozer or other tracked vehicle be operated on other than fresh uncompacted RCC except to facilitate startup operations for each lift and by approved procedures.

3.5 Compaction Equipment:

3.5.1 Self-propelled vibratory rollers shall be used for primary rolling and shall be double-drum. They shall transmit a dynamic impact to the surface through a smooth steel drum by means of revolving weights, eccentric shafts, or other equivalent methods. The compactor shall have a minimum gross mass of 20,000 pounds and shall produce a minimum dynamic force of 350 pounds per linear inch of drum width. The operating frequency shall be variable in the approximate range of 1,700 to 3,000 cycles per minute. The amplitude shall be adjustable between 0.015 and 0.04 inches. The roller shall be capable of full compaction in both forward and reverse directions. The roller shall be operated at speeds not exceeding 2.2 ft/s. Within the range of the operating capability of the equipment, the Contracting Officer may direct or approve variations to the frequency, amplitude, and speed of operation which result in the specified density at the fastest production rate.



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3.5.2 Small vibratory rollers shall be used to compact the RCC where the larger vibratory rollers specified above cannot maneuver. The rollers shall compact the RCC to the required density and shall be so demonstrated during construction of the test section. Small vibratory rollers cannot compact the RCC to the same density and thickness as the primary rollers. When small rollers are used, total lift thickness of the RCC layer or lift shall be reduced to not over 6 inches uncompacted thickness to permit adequate compaction. Rollers shall have independent speed and vibration controls and shall be capable of a wide range of speed adjustments.

3.5.3 The tampers shall compact the RCC to the required density and shall be so demonstrated during construction of the test section. Tampers cannot compact the RCC to the same density and thickness as the primary rollers. When tampers are used, thickness of each RCC layer that is to be compacted shall be reduced to not more than 6 inches uncompacted thickness to assure adequate compaction.

3.6 Placing During Rain: RCC shall not be placed during rainfall of 0.1 inch/hr or more. During periods of lesser rainfall, placement of RCC may continue if, in the opinion of the Contracting Officer, no damage to the RCC is occurring. Work shall commence only after excess free surface water and contaminated paste or RCC have been removed. The surface shall have gained sufficient strength (no less than 4 hours after the RCC placement was suspended) to prevent rutting, pumping, intermixing of rainwater with the RCC, or other damage to the RCC. When the RCC surface has been contaminated or damaged in any manner, the RCC surface shall be washed to break up and remove laitance and/or mud-like coatings from the surface. Any undercut coarse aggregate shall be removed. All waste shall be removed and disposed of in an approved manner.

3.7 Hot-Weather Placement In hot-weather placement the temperature of the RCC shall be controlled so that it does not exceed 75.0 degrees F when placed. Placement shall be suspended as soon as the RCC temperature exceeds 75 degrees F. Measures that can be taken to prevent temperatures exceeding 75 degrees F include, but are not limited to; 1.) chilling mixing water, 2.) sprinkling aggregate stockpiles, 3.) use of a canopy to shade the RCC placement areas, 4.) placing during nighttime and early morning hours, or 5.) restricting placements to cloudy days. Use of any of these systems shall not be reason for extension of completion dates specified in these specifications. In addition, to prevent potential damage to the RCC due to hot-weather related placement conditions, all RCC operation shall be suspended between June 15th and October 31st.



SECTION 03405 PRECAST ARCHITECTURAL CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of precast architectural concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Precast unit design shall conform to ACI 318 / 318M / 318R and PCI Mnl-122. Design loads for precast concrete shall be as indicated on the drawings. A differential temperature of 160 degrees F, between interior and exterior faces of the units, shall be considered in the design. Stresses due to restrained volume change caused by shrinkage and temperature differential, handling, transportation and erection shall be accounted for in the design. Samples of each type of finish shall be provided.

2.2 Connections Connection of units to other members, or to other units shall be of the type and configuration indicated. The design and sizing of connections for all design loads shall be by the Contractor.

2.3 Concrete Strength Precast concrete units shall have a 28-day compressive strength of 5000 psi

2.4 Concrete Proportion Selection of proportions for concrete shall be based on the methodology presented in ACI 211.1 for normal weight concrete and ACI 211.2 for lightweight concrete. The concrete proportion shall be developed using the same: 1.) type and brand of cement, 2.) the same type and gradation of aggregates, 3.) the same type and brand of admixture, that will be used in the manufacture of precast concrete units for the project. Calcium chloride shall not be used in precast concrete. Admixtures containing chloride ions, nitrates, or other substances that are corrosive shall not be used in prestressed concrete.

2.5 Reinforcing Steel: Reinforcing steel shall be galvanized if clearance to an exterior face is 1 inch or less.

2.6 Prestressing Strands: shall conform with ASTM A 416/A 416M

2.7 Inserts: shall be manufacturer's standard, suited for the application.

2.8 Plates, Angles, Anchors and Embedments: Material shall be as specified in PCI Mnl-117. Steel items, other than stainless, shall be coated with a rust-inhibiting paint or shall be hot-dip galvanized. Steel items, including items embedded in concrete, shall be either stainless steel or hot dip galvanized steel.

3.0 EXECUTION:

3.1 Erection: Precast units shall be erected in accordance with the detail drawings and without damage to other units or to adjacent members. Units shall be set true to alignment and level, with joints properly spaced and aligned both vertically and horizontally. Erection tolerances shall be in accordance with the requirements of PCI Mnl-117 and PCI Mnl-122. As units are being erected, shims and wedges shall be placed as required to maintain correct alignment. After final attachment, precast units shall be grouted as shown. After erection, welds and abraded surfaces of steel shall be cleaned and touched-up with a zinc-rich paint. Welds shall be made by a certified welder in accordance with the manufacturer's erection drawings. Pickup points, boxouts, inserts, and similar items shall be finished to match adjacent areas after erection. Erection of precast units shall



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be supervised and performed by workmen skilled in this type of work. Welding and the qualifications of welders shall be in accordance with AWS D1.1.

3.2 Cleaning: Not sooner than 72 hours erection, faces and other exposed surfaces of precast concrete discolored during erection shall be cleaned to remove dirt and stains by dry scrubbing with a stiff fiber brush, wetting the surface and vigorous scrubbing of the finish with a stiff fiber brush followed by additional washing, or by chemical cleaning compounds such as detergents or other commercial cleaners. Commercial cleaners shall be used in accordance with the manufacturer's recommendations. Cleaning procedure shall be performed on a designated test area and shall be approved prior to proceeding with cleaning work. Discolorations which cannot be removed by these procedures, will be considered defective work. Cleaning work shall be done when temperature and humidity permit surfaces to dry rapidly. Adjacent surfaces shall not be damaged during cleaning operations.



SECTION 03415 PRECAST-PRESTRESSED CONCRETE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of precast-prestressed concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Portland Cement: shall conform to ASTM C 150, Type I, II or III. The tricalcium aluminate content of the Type III cement shall be limited to 5 or 8 percent.

2.2 Blended Hydraulic Cement: shall conform to ASTM C 595.

2.3 Silica Fume: Silica fume may be furnished as a dry, densified material or as a slurry. Silica fume, unprocessed, or before processing into a slurry or a densified material, shall conform to the following requirements:

- a. Silicon dioxide content: 85-percent minimum, test method ASTM C 311.
- b. Loss on ignition: 6.0-percent maximum, test method ASTM C 311.
- c. Surface area, nitrogen adsorption, 15,000 m²/kg minimum, test method ASTM C 1069.
- d. Oversize, percent retained on 45-micrometer sieve: 5-percent maximum, test method ASTM C 430.

The Contractor shall provide at his expense the services of a manufacturer's technical representative, experienced in mixture proportioning, placement procedures, and curing of concrete containing silica fume. The manufacturer's representative shall be available for consultation by both the Contractor and the Government during mixture proportioning, planning, and production of silica-fume concrete. The rep shall be on site immediately prior to, and during at least the first placement of concrete containing silica fume and at other times, if directed.

2.4 Pozzolan: shall conform to ASTM C 618 Class F or C.

2.5 Aggregates: shall meet the requirements of ASTM C 33.

2.6 Admixtures: In no event shall admixtures containing chlorides or nitrates be used in the concrete.

2.6.1 Air-entraining admixture shall be certified to comply with ASTM C 260.

2.6.2 Water-reducing admixture shall be certified to comply with ASTM C 494 Type A.

2.6.3 Accelerating admixture shall be certified to comply with ASTM C 494 Type C.

2.7 Steel Reinforcement: Steel reinforcement shall be in accordance with Section 03205 Concrete Reinforcement.

2.8 Steel Tendons: Steel tendons shall be in accordance with Section 03230 Steel Stressing Tendons and Accessories for Prestressed Concrete.



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2.9 Concrete: Concrete shall be composed of cementitious material, water, fine and coarse aggregate, and admixtures. The cementitious material shall be portland or blended hydraulic cement and pozzolan where appropriate. The admixtures shall be an air-entraining agent, and may include a water-reducing admixture when its formulation and use are approved. Air Content shall be between 5 and 7 percent as determined in accordance with ASTM C 231. Proportions shall be selected so as to produce an average strength exceeding the design strength f_c required. Where the production facility has a standard deviation record determined in accordance with ACI 214, based on 30 consecutive strength tests of similar mixture proportions to that proposed, obtained within 1 year of the time when concrete placing is expected, it shall be used in selecting average strength. The average strength used as the basis for selecting proportions shall exceed the specified strength f_c by at least 5 percent.

2.10 Tolerances

2.10.1 The length of the member shall not deviate from the length shown in the contract drawings by more than plus or minus $3/4$ inch or plus or minus $1/8$ inch per 10 feet of length, whichever is greater.

2.10.2 The cross-sectional dimensions of a member shall, 1.) if less than 36 inches, shall not vary by more than plus or minus $1/4$ inch and, 2.) if over 36 inches, they shall not vary by more than plus or minus $3/8$ inch.

2.10.3 The horizontal alignment of the members shall not deviate from a straight line parallel to the theoretical centerline by more than $1/2$ inch or $1/8$ inch per 10 feet of length, whichever is greater. The maximum gap between two adjacent members due to sweep shall not exceed 1 inch.

2.10.4 The actual camber of beams shall not deviate from the computed camber by more than plus or minus $1/8$ inch per 10 feet but not more than plus or minus $1/2$ inch maximum total deviation.

2.10.4 The differential in camber at midspan between adjacent members shall not exceed $1/4$ inch per 10 feet of length or $3/4$ -inch maximum.

2.10.5 The position of the tendons shall not deviate from the design position by more than plus or minus $1/4$ inch.

3.0 EXECUTION:

3.1 Fabrication: Fabrication of precast-prestressed members shall follow the applicable provisions of the PCI Mnl-116s, except as specified herein.

3.1.1 All casting beds shall have concrete support on unyielding foundations.

3.1.2 Forms, both fixed and movable, shall be of steel. All forms and beds shall be thoroughly cleaned after each use.

3.1.3 Bulkheads, spacers, templates, and similar equipment having influence on the accuracy of dimensions and alignment shall be regularly inspected and maintained after each casting.

3.1.4 Accurate alignment of forms shall be maintained during the casting operation to assure compliances with tolerances specified. Leakage of the paste in form joints is not acceptable, and measures shall be taken to prevent such leakage. Measures shall also be taken to provide corner chamfers.

3.1.5 For exposed members, form ties, if used, shall be of the threaded or snap-off type so no parts will be left at the surface of the finished concrete.

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3.1.6 The tendons shall be placed, stressed, and destressed in accordance with Section 03230 Steel Stressing Tendons and Accessories for Prestressed Concrete.

3.1.7 Anchorages for posttensioning tendons will not interfere with the placement of the member such that adequate compaction of the concrete in the anchorage zone is impeded.

3.1.8 Steel bars and welded wire fabric shall be placed in accordance with Section 03205 Steel Reinforcement.

3.1.9 Concrete placement shall be in accordance with Section 03305 Cast In Place Concrete, except that once placement is started in a member it shall be carried on in a continuous operation until the member is completed. Members shall be cast in a horizontal position and casting in tiers will not be permitted. Adequate vibration shall be provided with internal and form vibrators so the cast members shall be free of rock pockets or surface blemishes resulting from inadequate vibration. Cold joints shall not be permitted in prestressed concrete members. If delays occur that result in hardening of the concrete so it will not receive a vibrator and again become plastic, the concrete shall be removed and the forms shall be washed out and refilled, otherwise partially cast members will be rejected.

3.2 Curing and Protection Concrete for the manufacturing of the precast-prestressed concrete members shall be cured and protected in accordance with Section 03305 Cast In Place Concrete or by other methods further specified here.

3.2.1 Curing with Steam at Atmospheric Pressure; Steam curing shall be under a suitable enclosure to retain the live steam to minimize moisture and heat losses. The enclosure shall allow free circulation of the steam around the sides and top of the beams. Steam jets shall be so positioned so they do not discharge directly on the concrete, forms, or test cylinders. The cycle of steam application shall conform to the following:

3.2.2 Curing After Placing and Vibrating; After placing and vibrating, the concrete shall be allowed to attain its initial set before the steam is applied. During the period between placement of the concrete and application of steam, provisions shall be made to prevent surface drying by means of a coating of membrane curing compound, moist covers, or equally effective methods. Application of the steam shall be delayed not less than 2 hours and not more than 10 hours after the time of concrete placement. If the ambient temperature is below 50 degrees F, enough heat shall be applied to maintain the concrete at its placing temperature.

3.2.3 Temperature Increase The ambient temperature within the casting enclosure shall be increased at a rate not to exceed 40 degrees F per hour. Temperature increase shall be as uniform as possible.

3.2.4 Temperature Range The temperature shall be increased until the ambient temperature in the casting enclosure is between 140 and 160 degrees F. Once this temperature range is reached, it shall be maintained until the concrete has reached the compressive strength necessary for stressing or destressing the tendons.

3.2.5 Temperature Decrease In discontinuing the steam curing, the ambient air temperature shall decrease at a rate not to exceed 40 degrees F per hour. Temperature decrease shall be as uniform as possible.

3.2.6 Recording Thermometers Recording thermometers showing the time-temperature relationship through the curing period from placing concrete to transfer of prestress shall be provided. At least one recording thermometer per casting enclosure shall be used. The desired curing time-temperature relationship shall be placed on the recording chart of the recording thermometer to aid the personnel controlling the temperature during curing. Recording charts shall be made available upon request and shall be clearly visible during the curing process.



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3.2.7 Radiant Heat Radiant heat may be applied to beds by means of pipe circulating steam, hot oil, or hot water or by electric blankets or heating elements on forms. Pipes, blankets, or elements shall not be in contact with concrete, form surface, or test cylinders.

3.2.8 Moisture Loss During the cycle of radiant heat curing, effective means shall be provided to prevent rapid loss of moisture in any part of the member. Moisture may be applied by a covering of moist burlap or cotton matting. Moisture may be retained by covering the member with a plastic sheet in combination with an insulating cover or by applying a liquid seal coat or membrane curing compound.

3.2.9 Temperature Limits Temperature limits and use of recording thermometer shall be as specified for curing with steam at atmospheric pressure.

3.2.10 Termination of Curing Termination of curing shall be as specified in Section 03305 Cast-In-Place Concrete unless the concrete has been cured by one of the two methods stated above. Termination of curing for concrete cured by either the steam at atmospheric pressure method or the radiant heat with moisture shall be determined based on the compressive strength of the concrete necessary for stressing or destressing the tendons.

3.3 Erection:

3.3.1 Seating of Precast Prestressed Concrete Members The precast prestressed concrete members shall be set into place in a manner which assures full bearing. If the bearing called for in the contract drawing is not obtained, then the members shall be removed and the situation corrected.

3.3.2 Roof and Floor Roof and floor single or double T-beams shall be erected in an increasing or decreasing magnitude of camber to minimize differential between beams. The contractor shall measure T-beam camber and number the beams prior to erection.

3.3.3 When welding or burning with a welding electrode, the ground shall be attached directly to the base metal. Under no circumstances shall the member be used as a conductor for the ground.

3.3.4 Erection Plan The erection plan shall be in sufficient detail so that adequacy of equipment, techniques, and accessories can be determined and comments offered. Acceptance of the Contractor's erection plan shall not relieve the Contractor of his responsibility for erecting precast prestressed members into position as required by the plans and specifications.



SECTION 03425 MISCELLANEOUS PRECAST ITEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of miscellaneous precast items. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Precast Items: shall include, but not be limited to, stairs, sun screens, trellis, planters, handrails, splash blocks, and bumper curbs and shall be supplied by a manufacturer normally engaged in the fabrication of these items.

2.2 Fabrication: PCI MNL-117.

2.3 Each Unit shall be complete and self-contained.

2.4 Items shall be fabricated from concrete with a minimum strength of 3,000 psi and shall be reinforced as required to withstand both construction loads and design loads.

2.5 Stairs shall be supplied in complete runs.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Provide Anchors, Devices, and Openings required to install precast units.

3.1.2 Precast Units shall be hoisted at points provided by the manufacturer and in a manner that avoids damage to the units.

3.1.3 Temporarily Brace Precast Units in proper position and alignment until permanent anchorage and supports are in place.

3.2 Erection:

3.2.1 Anchor Units in final position by bolting, welding, grouting, or as otherwise directed. Remove temporary shims, wedges, and spacers as soon as possible after anchoring is completed.

3.2.1.1 At Bolted Connections use lock washers or other acceptable means to prevent loosening of nuts.

3.2.1.2 At Welded Connections, apply rust-inhibitive coating on damaged areas, identical to shop-applied material. Use galvanizing repair coating on galvanized surfaces.

3.2.2 Cleaning: Clean exposed facings to remove dirt and stains that may be on units after erection and completion of joint treatments. Do not use cleaning materials or processes that could change the character of exposed concrete finishes.



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SECTION 03505 PRECAST LIGHTWEIGHT ROOF SLABS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of precast lightweight roof deck concrete channels, concrete planks, and gypsum planks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Channel Slabs: Slabs shall be composed of Portland cement and lightweight aggregate with minimum compressive strength 3,750 psi. Legs shall be reinforced with deformed bars; web shall have welded wire fabric reinforcement. Channels shall support a 30 psf live load plus a 20 psf superimposed dead load. Deflection shall not exceed L/240 of span.

2.2 Planks: Planks shall be composed of Portland cement and lightweight aggregate with a minimum compressive strength of 3,750 psi. Planks shall be reinforced with welded wire fabric. Planks shall support a 30 psf live load plus a 20 psf superimposed dead load. Deflection shall not exceed L/240 of span. Metal edge members, if furnished with units, shall be galvanized or galvanized and factory painted.

2.3 Gypsum Planks shall be suitable for the intended use, factory-laminated to 2-inch thickness, 2-foot wide panels. Planks shall be continuously supported along sides.

2.4 Subpurlins shall be bulb-tees, hot-rolled from high-strength rail steel, ASTM A 499.

2.5 Grout shall be lightweight concrete or gypsum concrete.

2.6 Nailable: Concrete slabs shall be capable of accepting roofing nails without shattering or spalling. Nonnailable concrete slabs shall be either cellular or aggregate concrete, flat or channel in shape.

2.7 Joint Material: Joint material shall be high-melting-point asphaltic mastic, grout, mortar, or lightweight concrete. Joints at hips and ridges may be filled with wood blocking, single thickness, structural grade, pressure-preservative treated.

3.0 EXECUTION:

3.1 Concrete Channels and Planks shall be securely attached to support steel or concrete by metal clips or other approved attachments; minimum support bearing shall be 4 inches. Open joints between channels or planks shall be filled. Planks with tongue and groove edges may not require grouting. Field-cut openings for utilities penetrations shall be accomplished in accordance with the manufacturer's recommendations. Roof deck shall be straight and true, and when laid in place must present a flat, level surface suitable for application of roofing.

3.2 Gypsum Planks shall be snugly fitted between bulb-tee subpurlins. Subpurlins shall be tack-welded or screw-attached to supporting steel or weld bar cast in supporting concrete. Joints at bulb-tees shall be grouted with gypsum grout.



SECTION 03510 GYPSUM CONCRETE DECKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gypsum concrete decks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Gypsum Concrete: ASTM C 317, Class A, 500 psi compressive strength.

2.2 Formboards:

2.2.1 Sheetrock: ASTM C 36, Type X, 5/8 inch by 24 inches by required length.

2.2.2 Mineral Fiber Board: ASTM C 612.

2.2.3 Cement Fiber Board: ASTM E 1264, Type IX, Fire Class A.

2.2.4 Glass Fiber Board: Lightweight, rigid, composed of pressed glass fibers.

2.3 Bulb Tees: Hot-rolled from high-strength rail steel, ASTM A 499. Flanges shall provide 5/8 inch minimum bearing for gypsum deck panels. Tees shall be galvanized or factory coated with manufacturer's standard primer.

2.4 Reinforcing Mesh:

2.4.1 Welded Wire Fabric: ASTM A 185, galvanized, 12 x 48-W 0.5 x W 0.5.

2.4.2 Woven Wire Fabric: ASTM A 82, galvanized, 19 gauge wire, 2-inch hexagonal mesh.

2.5 Gypsum deck plank: Planks shall be 2 inch or 2-5/8 inch nominal thickness, 24 inches wide, and the required length. Planks shall be long enough to span two main purlin spans where possible. Planks shall be provided with offset edges encased in water-resistant paper in accordance with ASTM C 442.

3.0 EXECUTION:

3.1 Support System: Sub-purlins shall be spaced to support formboard and rigidly attached to main supports. Formboards shall fit snugly at sub-purlins and at wall, curbs, and openings.

3.2 Reinforcement: Lay wire fabric continuously over subpurlins. Do not lap side of reinforcement.

3.3 Gypsum Concrete: Gypsum concrete shall be placed continuously without interruption until entire panel or section is complete. Immediately after placement, screed, level, and trowel smooth.

3.4 Fire Rated Decks: For fire rated decks gypsum deck panels shall be placed on bottom flanges of subpurlins. Gypsum deck planks shall be placed over gypsum deck panels in accordance with manufacturer's directions for fire rated system. Planks shall be placed with offset edges "up" to form a "T" receptacle for gypsum concrete.

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3.5 Protection: The installed decking units shall be protected from damage by weather and construction operations. The complete decking shall be kept clean and free of damaged or defaced units, and left ready to receive painting. Surfaces to be painted shall be dry and free of grease and oil. The top surface shall receive a paint sealer; traffic areas shall receive a second coat of floor paint.



SECTION 03520 INSULATING CONCRETE ROOF DECKS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of insulating concrete roof decks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:** Lightweight Concrete Roof Insulation, low density concrete approx.50lb/cu.ft placed with or without rigid insulation.

2.1 **Portland Cement:** ASTM C 150, Type I or III.

2.2 **Aggregate:** ASTM C 332, Type I, perlite or vermiculite. Containing no detectable asbestos as determined in 40 CFR 763, subpart E, Appendix E, Section 1.

2.3 **Water:** Clean, potable.

2.4 **Admixture:** Air-entraining, ASTM C 260.

2.5 **Reinforcement:** Welded wire fabric, ASTM A 185, galvanized, 12 x 48 - W 0.5 x W 0.5.

2.6 **Air Producing Foaming Agents:** In lieu of aggregate above, use cellular lightweight concrete standard manufacturer's products, ASTM C 260, with minimum compressive strength of 200 psi.

2.7 **Molded-Polystyrene Insulation Board:** ASTM C 578, Type I, 0.90-lb/cu. Ft. minimum density with 3 percent of area as keying slots.

2.8 **Fly Ash:** Use of fly ash, ASTM C 618, Class C or F, is not to exceed 25 percent of portland cement by weight.

3.0 EXECUTION:

3.1 **Reinforcing Mesh:** Place reinforcing mesh at right angles to structural supports, with end laps at least 6 inches and no side laps. Cut to fit around roof openings and projections. Terminate mesh at control joints.

3.2 **Place Lightweight Insulating Concrete,** using equipment and procedures to avoid segregation of mix and loss of air content. Deposit and screed lightweight concrete roof insulation in a continuous operation until an entire panel or section of roof area is completed. Do not vibrate or work mix except for screeding or floating. Leave top surface smooth, free of ridges and depressions in acceptable condition to receive subsequent roofing application. Do not place concrete roof insulation unless ambient temperature is 40 degrees F and rising. Do not place concrete roof insulation in rain or snow conditions.

3.3 **Begin Curing Operations** immediately after placement, and air cure for not less than 3 days. Prevent from freezing for 72 hours after placement.



SECTION 03530 CEMENTITIOUS WOOD FIBER ROOF DECK SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cementitious wood fiberboard and tees for roof decks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cementitious Wood Fiber Planks Structural Cement-Fiber Roof Decking Structural cement-fiber roof decking shall be shaped under pressure to required dimensions from a mixture of wood fibers and cementitious materials in proportions to produce deck units meeting the loading conditions specified. Exterior surfaces shall be suitable for applying roof. Metal edge members, if furnished with units, shall be galvanized. Flame spread shall not exceed 25 and smoke developed rating shall not exceed 50 when tested in accordance with ASTM E 84. Linear variation with change in moisture content, both linear and transverse, shall not be more than 0.2 percent when tested in accordance with ASTM D 1037. Plank edges shall be either tongue and groove or rabbeted to receive bulb-tee subpurlins.

2.2 Bulb-Tees: Hot-rolled from high-strength rail steel, ASTM A 499.

2.3 Grout: Lightweight concrete.

3.0 EXECUTION:

3.1 Subpurlin System: Planks shall be fitted between bulb-tees. Bulb-tees shall be securely fastened to supporting members. Spaces between planks at subpurlins shall be filled with lightweight concrete grout. Systems of planks and subpurlins shall support a 30 psf live load and a 10 psf superimposed dead load.

3.2 Tongue and Groove System: Planks shall be erected directly on supporting members and securely attached with metal clips or other approved fasteners. The tongue and groove of both ends and sides of plank shall be snugly fitted to eliminate open cracks.

3.3 Installation: Field-cut openings for utilities penetrations shall be accomplished in accordance with the manufacturer's recommendations. Roof deck shall be straight and true, and when laid in place must present a flat, level surface suitable for application of roofing. All roof decking units shall bear on at least two structural framing members with a 1 inch minimum bearing. Any cantilever plank shall not exceed the design span. Installation shall require a minimum of cutting. Cutting, where required, shall be at a true angle to the top of the unit. All units shall be made to fit around openings and projections, valleys, walls, and curbs, so that cut ends occur on supports and in a manner that will not damage the units. When roof deck units are welded to steel supports, welds and damaged galvanized coatings shall be cleaned and coated with zinc-rich paint. No attachment for carrying loads shall be made directly to the roof decking or subpurlins.



SECTION 03705 CONCRETE RESTORATION AND CLEANING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of concrete. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Epoxy Resin: Two-part epoxy adhesive containing 100 percent solids.

2.1.1 Bond Strength: ASTM C 882, 2,700 psi.

2.1.2 Tensile Strength: ASTM D 638, 6,600 psi.

2.1.3 Elongation: ASTM D 638, two percent.

2.1.4 Flexural Strength: ASTM D 790, 8,000 psi.

2.1.5 Compressive Strength: ASTM D 695, 10,000 psi.

2.2 Bonding Agent: Polyvinyl acetate emulsion, water-resistant when applied and cured.

2.3 Concrete: The concrete mixture shall match that of the existing concrete to be repaired unless otherwise directed and shall be designed in accordance with ACI 211.1 and ACI 211.2. The mixture proportions shall include consideration of the finishes required.

2.3.1 Portland Cement: ASTM C 150.

2.3.2 Sand: ASTM C 33.

2.3.3 Coarse Aggregate: ASTM C 33.

2.3.4 Water: Clean and potable.

2.3.5 Air-Entraining Admixture: ASTM C 260.

2.3.6 Water-Reducing and Retarding Admixture: ASTM C 494.

2.3.7 Bonding agents for use in bonding concrete and mortar patching materials to concrete and steel are specifically prohibited for use in the work.

2.4 Cleaning Agent: Commercial muriatic acid, mixed one part to ten parts potable water.

2.5 Reinforcing Steel: ASTM A 615, Grade 40 or 60.

3.0 EXECUTION:

3.1 Cleaning:

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3.1.1 Clean Concrete Surfaces of dirt, laitance, corrosion, oil, stains, or other contamination. Surface cleaning shall be accomplished by one or more of the following methods as appropriate for the contamination: 1.) wire brush using plain water or acid, 2.) sandblasting(only when subsurface), 3.) high pressure steam cleaning with or without chemical additives, 4.) high pressure water, 5.) high pressure air, or 6.) scrub brush and detergent. When acids or chemicals are used, surface shall be thoroughly rinsed and neutralized. Sandblasting equipment shall not be used in cleaning concrete and other building surfaces; and shall be subject to approval for each other specific applications such as cleaning reinforcing steel.

3.1.2 Deteriorated or Spalled Concrete:

3.1.2.1 Completely Remove all loose, deteriorated, or unsound concrete down to sound concrete.

3.1.2.2 Where Removal Exceeds 1/4 inch or where resurfacing of the entire area is not anticipated, concrete shall be removed to a minimum depth of 2 inches. If cover for reinforcing bars is 2 inches or less, remove concrete to completely expose the reinforcing in the repair area. Remove concrete to a minimum of 1-1/2-inches clear beyond reinforcing. Edges of the repair area shall be cut sharp, perpendicular to the face of the concrete surface, and at least 1 inch deep. Make the perimeter cut with a concrete saw and in a manner to not cut the reinforcing. Clean reinforcing of all rust and scale. Clean repair area of all loose or foreign material using high pressure air or water.

3.2 Resurfacing:

3.2.1 Resurfacing for concrete floors shall be with either epoxy coating or cementitious materials.

3.2.1.1 Epoxy Resurfacing shall be applied to a clean hard surface to a minimum thickness of 1/8 inch.

3.2.1.2 Cementitious Material Resurfacing shall be a minimum of 1 inch thick. Mix shall be one part Portland cement, one part sand, and 1-1/2 parts coarse gravel not exceeding 3/8-inch size crushed rock. Apply bonding compound and immediately place new surfacing. Curing shall be by burlap blanket method. Blankets shall be kept thoroughly saturated and in intimate contact with the concrete.

3.2.2 Resurfacing of Columns: Resurfacing of spalled or deteriorated column surfaces shall be with epoxy grout prepared with the addition of sand to epoxy resin to obtain a mix consistency that will not sag when placed in thin layers on vertical surfaces. Trowel finish.

3.3 Concrete Rehabilitation:

3.3.1 Concrete Patching:

3.3.1.1 Surface Shall Be Prepared as specified for deteriorated concrete cleaning.

3.3.1.2 Any Existing Reinforcing Bars that have a loss of more than 25 percent of their cross section through corrosion shall be replaced. Clean reinforcing bars by sandblasting or wire brushing.

3.3.1.3 Patch with Portland Cement Concrete if average patch thickness is 2 inches or greater; if less than 2 inches, patch with epoxy grout. Use bonding compound when placing Portland cement concrete patch.

3.3.2 Crack Repair:



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3.3.2.1 Epoxy Resin Adhesive Injection: Provide temporary surface seal on crack with entry ports spaced equal to the approximate thickness of the concrete. Inject adhesive into ports under pressure. Continue from port to port until crack is filled, working from bottom to top. Remove temporary seal and clean surface.

3.3.2.2 Epoxy Grout: The crack shall be cut out at the surface in a V-shape that extends to approximately 2 to 3 inches in width. Thoroughly blow out crack with high pressure air and wet with clean water. Completely fill the crack beyond the V-shaped portion with epoxy grout. The mix shall be thin enough to run freely into the crack for horizontal surfaces. Vertical cracks shall require a stiff mix tamped into place to fill all voids. Trowel finish.

3.4 Weather Restrictions for normal weight concrete shall be observed with special attention to both cold and hot weather concrete procedures.



SECTION 03730 CONCRETE TOPPING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of concrete floor toppings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cement: Portland cement, ASTM C 150, Type I or III.

2.2 Sand: ASTM C 33.

2.3 Coarse Aggregate: ASTM C 33, maximum size 3/8 inch.

2.4 Granolithic Material: Bonded Topping for Heavy Duty Floors: Coarse aggregate used for this purpose shall be a well graded, hard mineral, non-staining, sound diabase, trap rock, emery, granite or other natural or manufactured aggregate. Topping material shall have equivalent hardness and wearing qualities and shall have a percentage of loss not to exceed 30 after 500 revolutions when tested in accordance with ASTM C 131.

2.5 Mineral-Aggregate Topping: Material shall be factory-prepared and dry-packaged mixture of graded, crushed emery aggregate containing not less than 50 percent aluminum oxide. Mixture shall be not less than 24 percent ferric oxide, and not more than 8 percent silica; portland cement or blended hydraulic cement; plasticizers; and other admixtures to which only water needs to be added at project site. Compressive strength shall be 7000psi at 28 days and shall comply with ASTM C109/C 109M.

2.6 Iron-Aggregate Topping shall be factory prepared and dry-packaged mixture of graded iron aggregate, portland cement, plasticizers, and other admixtures to which only water needs to be added at project site. Compressive strength shall be 10,000psi at 28 days and shall comply with ASTM C109/C 109M.

3.0 EXECUTION:

3.1 Integral Topping: Topping shall be a one part cement, one part sand, and two parts aggregate mix to produce a hard topping with a minimum 28-day compressive strength of 5,000 psi.

3.1.1 Surface of Base Slab shall be roughened before placing topping.

3.1.2 Spread Topping Mixture evenly over base, bring to required depth, and strike off level with a straightedge. Consolidate surface by power-float finishing.

3.1.3 Hard-Trowel-Finish slab topping.

3.1.4 Control Joints in Topping shall be located directly above joints in base slab.

3.2 Granolithic Finish: Topping shall be a one part cement, one part sand, and 1-1/2 parts aggregate mix. Topping shall be placed same as integral topping.



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3.2.1 Prior to Final Troweling, granolithic material shall be spread evenly over the topping surface.

3.2.2 Granules shall be worked into the surface to provide complete bonding with the topping but also to provide an abrasion-resistant, non-skid surface.

3.2.3 Mineral and Iron aggregate topping materials shall be applied using manufacturers directions.

3.3 Curing: An evaporation retarding film membrane curing compound per ASTM C 309, Type 1, absorptive cover or moisture retaining cover shall be employed as recommended by manufacturer. Traffic shall be restricted from the area of completed topping for recommended curing duration.

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DIVISION 04 MASONRY



SECTION 04190 SCAFFOLDING - TUBULAR STEEL

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of tubular steel scaffolding. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Tubular steel or aluminum scaffolding system shall comply with OSHA Safety and Health Standards, Section 29 CFR, 1926/1910.

3.0 EXECUTION: (Section not used.)



SECTION 04202 UNIT MASONRY

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of facing brick, concrete block, glazed concrete unit masonry, sound-absorbing unit masonry, clay wall tile, sound-absorbing structural glazed tile, glass unit masonry, and vitrified clay flue liners. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Facing Brick:

2.1.1 Facing Brick Units shall be of standard size, texture, and color and shall conform to ASTM C 216, Grade SW and ASTM C 67.

2.1.2 Glazed Brick Units shall be of standard size and color and shall conform to ASTM C 216, Grade SW and ASTM C 126.

2.2 Concrete Block:

2.2.1 Solid Load-Bearing Concrete Block: ASTM C 145.

2.2.2 Hollow Load-Bearing Concrete Block: ASTM C 90.

2.2.3 Nonload-Bearing Concrete Block: ASTM C 129, Type I.

2.2.4 Patterned Concrete Block: Compatible with existing in dimension and appearance.

2.3 Glazed Concrete Unit Masonry:

2.3.1 Factory-Applied, Pre-Faced, Concrete Masonry Units shall be of standard shapes and sizes conforming to ASTM C 90, Grade N or Type I.

2.3.2 Facing Components shall conform to ASTM C 744.

2.3.3 Units shall be smooth and colored with satin gloss finish.

2.4 Sound-Absorbing Unit Masonry:

2.4.1 Sound-Absorbing Masonry Units shall be of standard shapes and sizes conforming to ASTM C 90 or ASTM C 129, as applicable.

2.4.2 Slots in the Masonry Unit Cavities shall be narrow slots in empty cavities or wide slots with fibrous fillers in cavities, as. Spec. SS-C-1960/1 and consisting of water-repellant steirates and pozzolanic applicable, for desired sound transmission absorption.

2.4.3 Pre-finished Units shall have ground-face or glazed surface.



2.5 Clay Wall Tile:

2.5.1 Load-Bearing Wall Tile hollow units shall be of standard shapes and sizes conforming to ASTM C 34, Grade LB or LBX.

2.5.2 Non-load-Bearing Wall Tile shall be of standard shapes and sizes conforming to ASTM C 56, Grade NB.

2.5.3 Clay Wall Tile Color shall conform to ASTM C 212 or ASTM C 126.

2.5.4 Plaster Base Finish shall conform to ASTM C 34 and ASTM C 56.

2.6 Sound-Absorbing Structural Glazed Tile: Sound-absorbing tile units shall be of standard shapes and sizes conforming to ASTM C 212 or ASTM C 126. The required Sound Transmission Class (STC) shall be in accordance with ASTM E 90.

2.7 Glass Unit Masonry:

2.7.1 Glass Block Hollow Units shall be classified for 3/4 hour of fire exposure in accordance with UL Fire Exposure Classification 9 (UL-9): "Fire Test for Window Assemblies."

2.7.2 Insulation R-Values for the following unit face sizes shall be: 6 inches by 6 inches equals R-2; 8 inches by 8 inches equals R-1.96; and 12 inches by 12 inches equals R-1.92.

2.7.3 Unit Face Pattern shall be of a standard design to provide desired light transmission, brightness, and privacy.

2.7.4 Mortar shall be Type S in accordance with ANSI A41.1, ASTM C 1329 and ASTM C 270.

2.8 Refractories: Vitriified clay flue lining shall be rectangular, round, or modular, of standard sizes, and shall conform to ASTM C 315.

2.9 Mortar Materials and Mixing:

2.9.1 Hydrated Lime: ASTM C 207, Type S or N.

2.9.2 Admixtures: Generally not recommended for use. However, cold weather admixture shall comply with ASTM C 494, Type C and liquid water repellent admixture shall be compatible with mortar manufacturer.

2.9.3 Portland Cement shall comply with ASTM C 150, Type I or II. Masonry cement shall comply with ASTM C 91.

2.9.4 Coarse Aggregate for Masonry Grout shall comply with ASTM C 404. Do not use aggregate containing any substance that will stain masonry.

2.9.5 Sand shall comply with ASTM C 144 or ASTM C 33, paragraph 3.1.

2.9.6 Mortar shall comply with ASTM C 270 and ASTM 1329, and in the proportions, measured in parts by volume, as required for the application.

2.10 Masonry Accessories:

2.10.1 Reinforcement Bars for lintels, bond beams, pilasters, and other masonry reinforcement shall comply with ASTM A 615, Grade 60.

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2.10.2 Joint Reinforcement shall be mill or hot-dipped galvanized carbon-steel wire or stainless-steel for exterior walls complying with ASTM A 951. Side rods and truss rods shall be W1.7 or W2.8 diameter.

2.10.3 Wire-Mesh Ties and Anchors shall be mill (ASTM A 641 Class 1 coating) or hot-dipped (ASTM A 153 Class B-2 coating) galvanized carbon-steel complying with ASTM A 82. Stainless-steel wire shall comply with ASTM A 580, Type 304 or 316.

2.10.4 Galvanized Steel Sheets shall comply with ASTM A 653/A 653M, G60 (Z180) and Stainless Steel Sheets shall comply with ASTM A 666, Type 304 or 316.

2.10.5 Rigid Steel Anchors shall be a minimum of 1-1/2 inch x 1/4 inch x 24 inches long with each end turned up not less than 2 inches or with cross-pins. Anchors shall be hot-dipped galvanized complying with ASTM A 153.

2.10.6 Seals and Gaskets for Control and Expansion Joint shall be preformed filler strips complying with ASTM D 1056, Grade 2A1, and preformed control joint gaskets complying with ASTM D 2000, Designation M2AA-805 and ASTM D 2287, Type PVC-65406.

2.11 Water-Repellent Materials for Concrete Block shall be solvent type silicone complying with ASTM C 920; transparent, non-staining, 5 percent silicone resin.

2.12 Patterned, Decorative Screen Units shall conform to the applicable requirements of ASTM C 90 or ASTM C 129. Units shall have uniform through-the-wall pattern, color, and texture.

3.0 EXECUTION:

3.1 Water Repellent Application shall be spray or brush in a single coat, using not less than one gallon for each 80 square feet covered. A flood coating with a rundown of material on the surface of from 6 inches to one foot shall be produced.

3.2 Window sills and coping shall be set in a full bed of mortar with faces plumb and true.



SECTION 04210 BRICKWORK

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of brickwork. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Face Brick: Compatible with existing in mechanical characteristics, permeability, and appearance and shall comply with ASTM C 216 and ASTM C 67.

2.2 Common Brick: Compatible with existing in mechanical characteristics, permeability, and appearance and shall comply with ASTM C 62.

2.3 Concrete Brick: ASTM C 55.

2.4 Mortar Materials and Mixing:

2.4.1 Hydrated Lime: ASTM C 207, Type S or N.

2.4.2 Admixtures: Generally not recommended for use. However, cold weather admixture shall comply with ASTM C 494, Type C and liquid water repellent admixture shall be compatible with mortar manufacturer.

2.4.3 Portland Cement shall comply with ASTM C 150, Type I or II. Masonry cement shall comply with ASTM C 91.

2.4.4 Coarse Aggregate for Masonry-Grout shall comply with ASTM C 404. Do not use aggregate containing any substance that will stain masonry.

2.4.5 Sand shall comply with ASTM C 144.

2.4.6 Colored Masonry Cement shall be a factory formulated mixture complying with ASTM C 979. Pigments shall not exceed 5 percent of masonry cement by weight for mineral oxides nor 1 percent for carbon black.

2.4.7 Mortar shall comply with ASTM C 270 and ASTM 1329, and in the proportions, measured in parts by volume, as required for the application.

2.5 Masonry Accessories:

2.5.1 Reinforcement Bars for lintels, bond beams, pilasters, and other masonry reinforcement shall comply with ASTM A 615, Grade 60.

2.5.2 Joint Reinforcement shall be mill or hot-dipped galvanized carbon-steel wire or stainless-steel for exterior walls complying with ASTM A 951. Side rods and truss rods shall be W1.7 or W2.8 diameter.

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2.5.3 Wire-Mesh Ties and Anchors shall be mill (ASTM A 641 Class 1 coating) or hot-dipped (ASTM A 153 Class B-2 coating) galvanized carbon-steel complying with ASTM A 82. Stainless-steel wire shall comply with ASTM A 580, Type 304 or 316.

2.5.4 Galvanized Steel Sheets shall comply with ASTM A 653/A 653M, G60 (Z180) and Stainless Steel Sheets shall comply with ASTM A 666, Type 304 or 316.

2.5.5 Rigid Steel Anchors shall be a minimum of 1-1/2 inch x 1/4 inch x 24 inches long with each end turned up not less than 2 inches or with cross-pins. Anchors shall be hot-dipped galvanized complying with ASTM A 153.

2.5.6 Cotton or Polyester Rope for weep holes shall be 1/4 to 3/8 inch diameter in length required to produce 2 inch exposure on exterior and 18 inches in cavity between wythes.

2.5.7 Wire Brick Ties shall be fabricated from 3/16 or 1/4-inch diameter hot-dipped galvanized or stainless-steel wire (mill galvanized wire ties may be used in exterior walls where humidity does not exceed 75 percent). Rectangular units with closed ends and not less than 4 inches wide. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches long may be used for masonry constructed from solid units or hollow units laid with cells horizontal.

2.6 Flashing:

2.6.1 Through-Wall Flashing shall be one of the following:

2.6.1.1 Five-Ounce Copper Sheet shall comply with ASTM B 370, cold-rolled temper, coated both sides with a factory-applied elastic asphalt compound complying with ASTM D 449.

2.6.1.2 Ten-Ounce Rib-Formed Copper Sheet shall comply with ASTM B 370, cold-rolled temper, with ribs approximately 3/16-inch high and spaced not more than 3 inches apart.

2.6.1.3 Rib-Formed 32-Gauge, Type 302 or 304 Stainless Steel Sheet shall comply with ASTM A 167. Deformations shall be approximately 3/16 inch high and shall be spaced not more than 3 inches apart.

2.6.2 Flashing beneath coping stone shall be one of the following:

2.6.2.1 Stainless Steel Sheet shall comply with ASTM A 167, Type 302 or 304, finish No. 2P, dull, 26-gauge.

2.6.2.2 Copper Sheet shall comply with ASTM B 370, cold-rolled temper, 16-ounce per square foot.

2.6.2.3 Aluminum-Sheet shall comply with ASTM B 209, alloy 3003, temper H-14, .032 inch thick.

2.6.2.4 Galvanized Steel Sheet, 26-gauge, shall comply with ASTM A 527, and coating shall comply with ASTM A 525, designation G90.

2.7 Caulking and Sealants shall comply with ASTM C 920.

2.7.1 Backup Material for sealants shall be closed-cell resilient urethane or polyvinyl-chloride foam, closed-cell polyethylene foam, closed-cell sponge of vinyl or rubber, polychloroprene tubes or beads, polyisobutylene extrusions, oilless dry jute, or rope yarn.

2.7.2 Bond Preventative Material shall be pressure sensitive polyethylene tape, aluminum foil, or wax paper.



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2.8 Water-Repellent Materials for Facing Brick Masonry shall be solvent type silicone complying with ASTM C 920; transparent, non-staining, 5 percent silicone resin.

2.9 Dovetail Anchors shall be standard twelve gage complying with ASTM A 924 for mill galvanized, ASTM A 153 for hot-dipped galvanized or ASTM A 167 for stainless steel.

2.10 Wire Mesh Wall Ties shall be 16 gage hot-dipped galvanized complying with ASTM A 641.

3.0 EXECUTION:

3.1 Brick shall be laid with completely filled mortar joints in line with and of equal width to existing jointing.

3.2 1/4 to 3/8-inch Cotton or Polyester Weep Rope, 24 inches apart, shall be provided in the head mortar in the first course above the top of steel lintels, shelf angles, and ledge supports and where flashings and waterproofing terminate in horizontal joints.

3.3 Water Repellent Application shall be spray or brush in a single coat, using not less than one gallon for each 100 square feet covered. A flood coating with a rundown of material on the surface of from 6 inches to one foot shall be produced.



SECTION 04250 TERRA COTTA

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of terra cotta. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Terra Cotta: Hard-burned, nonload-bearing clay building units.

2.2 Material for Setting Terra Cotta:

2.2.1 Cement shall be Portland cement complying with ASTM C 150, Type I, Type IA or Type II.

2.2.2 Sand for Mortar shall comply with ASTM C 144 and be tested in compliance with ASTM C 40 and C 117. Sand shall have a fineness modulus between 2.0 and 2.5.

2.2.3 Lime shall comply with ASTM C 5.

2.2.4 Hydrated Lime, if allowed, shall comply with ASTM C 207, Type S.

2.3 Mortar for the resetting of terra cotta shall be composed of one part Portland cement, 3 1/2 parts sand, and 1/2 part lime putty by volume.

3.0 EXECUTION:

3.1 Restoration of Terra Cotta Surface:

3.1.1 Remove All Loose Chips or flaking pieces from the surface. Cut mortar out of all joints to a depth of 3/8 inch from the face of the terra cotta.

3.1.2 Build Up Voids and Irregularities in the surface using successive coats of an epoxy caulk consisting of a 2-component 100 percent flexible-cured, thixotropic epoxy suitable for vertical surfaces.

3.1.3 Give All Patched Surfaces of the terra cotta two coats of an epoxy glaze consisting of 2-component, 100 percent epoxy, high-solids content, flexible cured, interior-exterior, high-gloss glaze.

3.2 Replacement of Terra Cotta:

3.2.1 Terra Cotta Units required to be replaced shall be carefully removed to avoid disturbing adjacent units.

3.2.2 Set Replacement Units plumb, level, true to line, and in a manner to match existing terra cotta.

3.3 Sealing Terra Cotta Joints:

3.3.1 Remove Joint Material to a depth of 3/8 inch or to the depth of sound material.



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3.3.2 Clean the Joints thoroughly.

3.3.3 RegROUT Joints and tool surface to match appearance of adjacent floor.

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SECTION 04405 STONework

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of stonework. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Indiana Limestone: ASTM C 568, Category II.

2.2 Marble: ASTM C 503.

2.3 Building Sandstone: Compatible with existing.

2.4 Structural Granite: ASTM C 615.

2.5 Quartz-Based Dimension Stone Standard: ASTM C 616

2.6 Masonry Accessories:

2.6.1 Fastenings for Stone: Furnish and install all anchors, dowels, clamps, clips, bolts, and other attachments necessary to fasten and anchor stone in place. Steel wire shall be galvanized carbon-steel complying with ASTM A 82, with ASTM A 153 Class B-2 coating. Stainless steel shall be used to fabricate the sizes, shapes, and types of all anchoring and fastenings, except wire.

2.6.2 Slots for Dovetail Anchors shall be of 24-gauge commercial galvanized sheet metal, formed to give double anchorage for shoulder to forms.

2.6.3 Dovetail Anchors for fastening masonry to concrete shall be compatible with anchor slots.

2.6.4 Clay or shale brick veneer shall comply with ASTM C 216, concrete masonry unit veneer with ASTM C 90, and prefaced concrete masonry unit veneer with ASTM C 744.

2.7 Epoxy Mortar Patching Materials:

2.7.1 Epoxy Adhesive shall be a two-part polyester or epoxy-resin stone adhesive with 15- to 45-minute cure at 70 degrees F, in the formulation recommended by the adhesive manufacturer for the type of stone repair indicated, and matching stone color for stone-to-stone applications.

2.7.2 High Modulus, High Strength, moisture-insensitive epoxy adhesive with a pot life of 30 minutes at 40 degrees F for mortar-to-stone applications.

2.7.3 Epoxy Performance Requirements:

2.7.3.1 Tensile Elongation: 2.5 percent minimum per ASTM D 638.

2.7.3.2 Tensile Strength: 3,500 psi minimum per ASTM D 638.



2.7.3.3 Compressive Strength: 6,000 psi minimum per ASTM D 695.

2.7.3.4 Water Absorption (24 hours): 0.5 percent ASTM D 570.

2.7.4 Stone Filler shall be stone of the same type and color as the stone being patched and shall be ground to approximately the texture of coarse sand.

2.7.5 Pigments shall be natural and synthetic iron oxides and chromium oxides, compounded for mortar mixes and of the type that will not react with the epoxy adhesive.

2.7.6 Thickening Powder shall be silicon carbide powder.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Removal of Deteriorated Material: Chip out all deteriorated stone in areas to be patched to sound material. Square cut or undercut edges to a minimum 1-inch depth to form a key for patching material.

3.1.2 Cleaning: Clean area to be patched and dry thoroughly.

3.2 Installation:

3.2.1 Patching Stone:

3.2.1.1 Brush-coat stone surfaces with mortar-to-stone adhesive. Brush-coat stone surfaces with a slurry coat of patching mortar. Comply with manufacturer's instructions. Place patching mortar in layers no thicker than 2 inches. Roughen surface of each layer to provide a key for the next layer. Build up patch 1/4 inch above surrounding stone and carve surface to match adjoining stone after mortar has hardened.

3.2.1.2 Keep each layer damp for 72 hours or until mortar has set.

3.2.2 Replacing Stone:

3.2.2.1 Cut Replacement Stone accurately to shape and dimensions with joints and bonding as required.

3.2.2.2 Exterior Sill Stones, Panels, Copings, Cornice, and Similar Stones with exposed top surfaces shall be cut to set on their natural beds and shall have a wash on the top surface.

3.2.3 Setting Stone:

3.2.3.1 Where stone is backed up with concrete or concrete blocks, coat the face of the backup material with an approved non-staining asphalt complying with ASTM D 449, Type D.

3.2.3.2 Provide expansion or control joints in stonework as required.

3.2.3.3 Butter vertical joints for full width before setting and set units in full bed of mortar, unless otherwise indicated. Tool joints after setting to match joints of surrounding stone.

3.2.4 Pointing and Cleaning:

3.2.4.1 Upon completion, all joints shall be carefully pointed.

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3.2.4.2 Clean stone surfaces using fiber brushes and tri-sodium phosphate solution.



SECTION 04510 MASONRY RESTORATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for general masonry restoration. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Abrasive Blasting Material shall be a combination of friable, finely graded, clean particles, containing approximately 97.8 percent silicates and other minerals by weight. The material shall contain no free silica nor any crushed or quarried sand.

2.1.1 Sieve analysis for wet blasting aggregate shall be:

Sieve Mesh	Percent Retained	
	Min.	Max.
28	5	15
35	22	32
48	73	90

2.1.2 Aggregate for Dry Blasting: The size of aggregate for dry blasting shall be determined by careful material analysis for the given application.

2.2 Mortar Materials:

2.2.1 Hydrated Lime: ASTM C 207, Type S or N.

2.2.2 Cement:

2.2.2.1 Portland Cement: ASTM C 150, Type I or II.

2.2.2.2 Masonry Cement: ASTM C 91.

2.2.2.3 Cement shall not have more than 0.60 percent alkali (sodium oxide) nor more than 0.15 percent water soluble alkali in the combination of lime and cement.

2.2.3 Aggregate:

2.2.3.1 Coarse Aggregate: ASTM C 404 and not containing any substance that will stain the masonry.

2.2.3.2 Sand for Use with Masonry: ASTM C 144. Sand shall not contain any substance that will stain masonry.

2.2.3.3 Sand for Use with Stone: ASTM C 33.

2.2.4 Admixtures: Do not use admixtures of any kind in mortar, unless otherwise indicated.

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2.2.5 Colored Masonry Cement: ASTM C 979. Mortar colors shall be high purity, chemically inert, color-fast, and alkali-proof mineral oxides. Color shall not exceed a pigment-to-cement ratio of 1:10 by weight; carbon black shall not exceed 3 percent of the cement weight.

2.2.6 Water shall be clean, fresh, and free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances.

2.2.7 Mortar Proportions shall be as follows as specified in ASTM C 270, Proportion Size, Type N:

Portland Cement	Hydrated L ime	Sand
1	1	6

Add pigments if required.

2.3 Grout: Grout shall be a flexible, non-shrink, non-staining grout specifically formulated for use in masking and grouting complying with ASTM C 476.

2.4 Masking Material shall be a special masking tape, compatible with the grout technique.

2.5 Caulking and Sealant shall comply with ASTM C 920.

2.6 Backup Material for sealant shall be closed-cell resilient urethane or polyvinyl-chloride foam, closed-cell polyethylene foam, closed-cell sponge of vinyl or rubber, polychloroprene tubes or beads, polyisobutylene extrusions, oil-less dry jute, or rope yarn.

2.7 Bond Preventive Material shall be pressure sensitive polyethylene tape, aluminum foil complying with ASTM D 1056 or ASTM D 1565.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 General: Clean masonry surfaces free from efflorescence, mildew, fungus, graffiti, vines, tentacles, and all other blemishes. Wire brushing or sandblasting will not be allowed for paint removal.

3.1.2 Deteriorated Material: For re-pointing, tuck pointing, masking, and grouting, cut out old mortar in brickwork to a minimum depth of 1/2 inch and cut out old mortar in stonework to a minimum depth of 1 inch. Deteriorated material shall be removed to the full depth of mortar disintegration. Following cleaning, blow joints clean to remove all dust, dirt, and remaining loose aggregate.

3.2 Masonry Cleaning:

3.2.1 Washing: A specialized aeration type nozzle shall be used to project water at 1,000 or 1,200 psi pressure. Any evidence of masonry material damage or removal shall be cause for immediate work stoppage.

3.2.2 Steam Cleaning: Scrub all surfaces to be cleaned with a mild soap or detergent. Apply steam at a pressure of 10 to 30 psi to thoroughly flush and remove all foreign matter and to neutralize and rinse away all cleaning solutions.

3.2.3 Chemical Cleaning:



3.2.3.1 Acidic Products shall be used only on acid-tolerant materials such as granite, sandstone, and unglazed brick.

3.2.3.2 Alkaline Cleaners shall be used only on acid-sensitive materials such as limestone and marble.

3.2.3.3 Surfactants shall be used only on polished granite or glazed brick.

3.2.4 Abrasive Blasting:

3.2.4.1 Wet Aggregate Blasting shall be performed using a specialized nozzle that combines specified aggregate, clean water and air. Water pressure shall not exceed 150 psi. Air pressure shall not exceed 70 psi. After cleaning, rinse surfaces to remove aggregate and loosened soil.

3.2.4.2 Dry Aggregate Blasting shall be continuous bombardment of the masonry surface with a finely divided aggregate. Air pressure shall be between 20 and 100 psi. After cleaning, rinse surfaces to remove aggregate and loosened soil.

3.2.5 Re-pointing and Tuck-pointing:

3.2.5.1 Pointing of Brickwork: Compact new mortar in deep cuts in successive layers until a uniform joint depth throughout has been attained. After deep joints have been leveled, fill all joints with mortar and pack the back corners of the joint.

3.2.5.2 Painting of Stonework: Compact new mortar in deep cuts in successive layers until a uniform joint depth throughout has been attained. After deep joints have been leveled, fill joints with a layer of mortar 1/2 inch deep and pack the back corners of the joint. Approximately 1 hour later, apply another layer of mortar completely filling the joint.

3.2.5.3 Tooling: Tool the joint to match the appearance of the adjacent mortar joints with a round jointer to produce smooth, dense, concave joints.

3.2.6 Masking and Grouting:

3.2.6.1 Masking: Mask the face of each individual masonry unit, keeping the edge of the tape 1/16 inch away from all edges of the masonry unit to allow an overlap of the grouting material onto the masonry.

3.2.6.2 Grouting: Completely fill all joints, cracks, and voids with grout.

3.2.6.3 Cleaning: Keep all exposed masonry clean and free of mortar as work progresses. Clean masonry surfaces using fiber brushes and trisodium phosphate solution. Rinse surfaces with clean water immediately after cleaning.

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DIVISION 05 METALS



Section 05020 Anchor Bolts And Expansion Anchors

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of anchor bolts and expansion anchors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Anchor Bolts and Nuts: ASTM A 307; Hot-dipped galvanized, ASTM A 153.

2.2 Flat Washers: ANSI B18.2.1, of the same material as bolt.

2.3 Expansion Anchors:

2.3.1 Lead Shield Type: Fed. Spec. FF-S-325, Group I, Type 1, Class 1.

2.3.2 Wedge Type: Fed. Spec. FF-S-325, Group II, Type 4, Class 1 or 2.

2.3.3 Self-Drilling Type: Fed. Spec. FF-S-325, Group III, Type 1.

2.4 Fabrication:

2.4.1 Anchor Bolts shall be "J" type for use in concrete or hooked type for use in masonry. All bolts shall be hot-dipped galvanized and furnished complete with nut and washer.

2.4.2 Expansion Anchors shall be of standard manufacture and unless otherwise specified shall be galvanized or cadmium-plated in accordance with Fed. Spec. FF-S-92.

3.0 EXECUTION:

3.1 Anchor Bolts shall either be cast in new concrete or regouted in place with non-shrinking grout.

3.2 Expansion Anchors shall be of the type best suited for the work. Embedment shall be as directed but in no case less than six times the bolt diameter. Minimum distance between the anchor center line and the edge of concrete shall not be less than 4-1/2 times the diameter of the hole in which anchor is installed.

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SECTION 05120 STRUCTURAL STEEL

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of structural steel. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Structural Steel:

2.1.1 Carbon Grade Steel: ASTM A 36 / A 36M.

2.1.2 High-Strength Low-Alloy Steel: ASTM A 572 / A 572M, Grade 50.

2.1.3 Corrosion-Resistant High-Strength Low-Alloy Steel: ASTM A 242 / A 242M or A 588 / A 588M, Grade 50.

2.1.4 Quenched and Tempered Alloy Steel: ASTM A 514 / A 514M.

2.1.5 Structural Tubing: ASTM A 500, Grade B, ASTM A 501, or ASTM A 618.

2.1.6 Steel Pipe: ASTM A 53, Type E or Type S, Grade B. Weight Class to be Standard, Extra Strong or Double Extra Strong as indicated. Pipe finish may be black or galvanized as indicated.

2.2 Connections:

2.2.1 High-Strength Bolts: ASTM A 325 / A 325M or ASTM A 490 / A 490M including nuts and washers.

2.2.2 Carbon Steel Bolts: ASTM A 307, Grade A.

2.2.3 Carbon Steel Nuts: ASTM A 563, Grade A, Square or Hex Style.

2.2.4 Plain Washers, Other Than Those in Contact with High-Strength Bolts: ANSI B18.22.1, Type B.

2.2.5 Direct-Tension Indicators: ASTM F959, Type 490, Un-coated

2.2.6 Welding Electrodes: Comply with AWS D 1.1 "Structural Welding Code-Steel" requirements.

2.3 Finish: Galvanized, ASTM A 123 and ASTM A 153 or ASTM A 386 or shop primer, SPC Paint 25 Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (without Lead and Chromate Pigments)

2.4 Fabrication: Fabrication shall be in accordance with the applicable provisions of the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. Fabrication and assembly shall be done in the shop to the greatest extent possible. Ends shall be square within the tolerances for milled ends specified in ASTM A 6. Non-galvanized structural steelwork, except surfaces to be field welded or friction bolted, shall be prepared for painting in accordance with the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings and primed with the specified paint.



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2.5 Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare surfaces according to Structural Steel Painting Council (SSPC) specifications as follows:

2.5.1 Hand Tool Cleaning – SSPC-SP 2

2.5.2 Power Tool Cleaning – SSPC-SP 3

2.5.3 White Metal Blast Cleaning – SSPC-SP 5

2.5.4 Commercial Blast Cleaning – SSPC-SP 6

2.5.5 Brush-Off Blast Cleaning - SSPC-SP 7

2.5.6 Picking - SSPC-SP8

2.5.7 Near-White Blast Cleaning - SSPC-SP 10

2.5.8 Power Tool Cleaning to Bare Metal - SSPC – SP 11

3.0 EXECUTION: Erection of structural steel shall be in accordance with the applicable provisions of the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.

3.1 Connections: Anchor bolts and other connections between the structural steel and foundations shall be provided and shall be properly located and built into connecting work.

3.2 Base Plates and Bearing Plates: Column base plates for columns and bearing plates for beams, girders, and similar members shall be provided. Base plates and bearing plates shall be provided with full bearing after the supported members have been plumbed and properly positioned, but prior to placing superimposed loads. Separate setting plates under column base plates will not be permitted. The area under the plate shall be dry-packed solidly with bedding mortar.

3.3 Galvanized Field Connections: Galvanized steel shapes shall be bolted connections only using galvanized bolts, nuts, and washers. Field welding of galvanized steel will not be permitted.

3.4 Field Welded Connections: Field welded structural connections shall be completed before load is applied.

3.5 Field Priming: After erection of non-galvanized structural steel, the field bolt heads and nuts, field welds, and any abrasions in the shop coat shall be cleaned and primed with paint of the same quality as that used for the shop coat.

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SECTION 05130 STEEL DECK

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel roof and floor deck. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Deck Units: Deck units shall conform to the Steel Deck Institute (SDI) publication no. 29 "Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Metal Floor Deck with Electrical Distribution". Span and lapping shall be as detailed on design drawings.

2.1.1 Roof Deck: Steel deck used in conjunction with insulation and built-up roofing shall conform to ASTM A 792/A 792M, ASTM A 611 or ASTM A 792/A 792M. Roof deck units shall be fabricated of 0.0295 inch design thickness or thicker steel or as shown on design drawings, and shall be painted, G90 coated or galvanized as required.

2.1.2 Acoustical Deck Units: Deck shall have a noise reduction coefficient of NRC 0.75 when measured in accordance with ASTM C 423 using ASTM E 795 Mounting Type F-25. Sound absorbing materials shall be either glass fiber in roll or pre-molded form for acoustical steel deck (non-cellular) or glass fiber rigid strip for acoustical steel deck (cellular) in accordance with manufacturer's standards.

2.1.3 Composite Deck: Deck to receive concrete as a filler, or for composite deck assembly, shall conform to ASTM A 653/A 653M or ASTM A 611. Deck used as the tension reinforcing in composite deck shall be fabricated of 0.0295 inch design thickness, or as shown on design drawings, and shall be zinc-coated in conformance with ASTM A 653/A 653M. Deck units used in composite deck shall have adequate embossment to develop mechanical shear bond to provide composite action between the deck and the concrete.

2.1.4 Form Deck: Deck used as a permanent form for concrete shall conform to ASTM A 653/A 653M or ASTM A 611. Deck used as a form for concrete shall be fabricated of 0.015 inch thickness or as shown on design drawings, and shall be painted with one coat of manufacturer's standard paint, G90 Coated, or zinc-coated in conformance with ASTM A 653/A 653M as shown.

2.2 Accessories: Metal accessories shall be of the same material as the deck and have minimum gauge as follows: saddles, 18-gauge; welding washers, 10-gauge; cant strip, 22-gauge; other metal accessories, 20-gauge; unless otherwise indicated.

2.3 Closure Plates: Voids above interior walls shall be closed with 22-gauge sheet metal where directed. Open deck cells at parapets, end walls, eaves, and openings through floors and roofs shall be closed with 22-gauge sheet metal.

2.4 Miscellaneous Steel Shapes: ASTM A 36 / A 36 M.

3.0 EXECUTION:

3.1 Erection of deck and accessories shall be in accordance with the SDI publication no. 29 "Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Metal Floor Deck with Electrical Distribution". The deck units shall be placed on secure supports, properly adjusted, and aligned at right angles to supports



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before being permanently secured in place. The maximum uniform distributed storage load shall not exceed the design live load.

3.2 Attachment: The deck units shall be welded or fastened with screws, powder-actuated fasteners, or pneumatically driven fasteners to supports in accordance with requirements of the SDI "Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Metal Floor Deck with Electrical Distribution". All welding of steel deck shall be in accordance with American Welding Society (AWS) D1.3 using methods and electrodes as recommended by the manufacturer of the steel deck being used.

3.3 Repair of Coatings: Touch-up paint for shop-painted units shall be of the same type used for the shop painting. Touch-up paint for zinc-coated units shall be a galvanizing repair paint with a high-zinc dust content. Welds shall be touched-up with paint conforming to Steel Structure Painting Council (SSPC) Paint 20 in accordance with ASTM A 780. Finish of deck units and accessories shall be completed by using touch-up paint wherever necessary to prevent the formation of rust. Other coating shall be repaired as recommended by manufacturer.

3.4 Openings Through Deck: Holes and openings required shall be drilled or cut, reinforced, and framed for rigidity and sufficient load-carrying capacity. Holes less than 6 inches across require no reinforcement. Openings 6 to 12 inches across shall be reinforced by 22-gauge steel sheet at least 12 inches wider and longer than the opening and be fastened to the steel deck a maximum of 12 inches on center. Openings larger than 12 inches shall be reinforced by steel angles on opposite sides of the opening and at a right angle to the deck ribs. Both sides of the angles shall be fastened to each rib. Angles shall extend at least two ribs beyond each side of the opening.

3.5 Shoring: Install temporary shoring before placing deck panels or concrete, if required to meet deflection limitations. Remove shoring only when conditions allow design deflections to be met.



SECTION 05155 STEEL JOISTS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of steel joists. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:** Manufacturer must be certified by Steel Joist Institute SJI to manufacture joists complying with SJI standard specifications and load tables. Comply with AWS requirements and procedures for; shop welding, appearance, quality of welds, and methods used in correcting welding work.

2.1 **Open Web Steel Joists:** Steel joists shall conform to Steel Joist Institute SJI-01, K-Series. Joists shall be designed to support the loads given in the standard load table of SJI-01.

2.2 **Long-span Steel Joists and Deep Long-span Steel Joists:** Steel joists shall conform to SJI-01, LH-Series or DLH-Series. Joists shall be designed to support the loads given in the standard load tables of SJI-01.

2.3 **Joist Girders:** Joist girders shall conform to SJI-01.

2.4 **Accessories and Fittings:** Accessories and fittings, including end supports and bridging, shall be in accordance with the standard specifications under which the members were designed. Supply ceiling extensions of enough strength to support ceiling construction.

2.5 **Shop Painting:** Joists and accessories shall be shop-painted with a rust-inhibiting primer paint. The primer paint shall be limited to a primer that is compatible with the specified finish paint. Do not prime paint joists or accessories scheduled to receive sprayed fire-resistive materials.

3.0 **EXECUTION:** Joists shall be accurately set, and end anchorage shall be compatible with the bearing surface and the expansion requirements. Joist bridging and anchoring shall be secured in place prior to the application of any construction loads. Any temporary loads shall be distributed so that the carrying capacity of any joist is not exceeded. Loads shall not be applied to bridging. Abraded, corroded, and field-welded areas shall be cleaned and touched up with the same type of paint used in the shop painting. After installation clean, prepare, and prime or re-prime field connections, rust spots, and abraded surfaces.



SECTION 05180 MISCELLANEOUS STANDARD METAL ARTICLES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of miscellaneous standard metal articles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wire Rope: Wire rope shall conform to ASTM A 475, high strength grade with Class A coating. Where possible, units shall have factory attached fittings. Fittings and accessories shall be hot-dip galvanized.

2.2 Safety Chains: Safety chains shall be galvanized welded steel, proof coil chain tested in accordance with ASTM A 467, Class CS. Safety chains shall be straight link style, 3/16 inch diameter minimum or as specified, 12 links per foot and with bolt type snap hooks on each end. Eye bolts for attachment of chains shall be galvanized 3/8 inch bolt with 3/4 inch eye, anchored as indicated. Two chains shall be furnished for each guarded opening.

2.3 Corner Protection: Steel angles with anchors, ASTM A 36; Galvanized, ASTM A 123.

3.0 EXECUTION: (Not Used)

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SECTION 05210 STEEL TRUSSES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of steel trusses. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. Additional related information is included in Section 05120.

2.0 PRODUCTS:

2.1 Steel Trusses:

2.1.1 Structural Carbon Steel: ASTM A 36/ A 36M, unless otherwise indicated.

2.1.2 High-Strength Low-Alloy Structural Steel: ASTM A 242 / A 242M, Grade 42.

2.2 Steel Forgings: Forgings that are to be welded shall comply with Supplementary Provision S4 of ASTM A 668.

2.3 Fasteners:

2.3.1 High Strength Bolts, Nuts and Plain Hardened Washers: ASTM A 325 / A 325M.

2.3.2 Anchor Bolts: ASTM A 307.

2.4 Filler Metal for Welding: Electrodes for manual arc welding shall comply with AWS A5.1 or AWS A5.5.

2.5 Field Repair of Shop Primer: SPC Paint 25 Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (without Lead and Chromate Pigments)

3.0 EXECUTION:

3.1 Structural Metals:

3.1.1 Comply with AISC "Specifications for Design, Fabrication and Erection of Structural Steel for Buildings" and "Code of Standard Practice," both as modified herein.

3.1.2 Piping and electrical wiring conflicting with erection of members shall be removed and placed in a new position approved by the Contracting Officer. Provide temporary utilities and coordination to prevent outages during this period.

3.1.3 Shop and field connections shall be high strength steel bolted unless otherwise indicated.

3.1.4 All metal parts shall be shop-fabricated. Assemblies shall be fitted together in the shop and delivered complete and ready for installation. Welds shall be made by operators who have been previously qualified in compliance with AWS standards to perform the type of work required. Welds exposed to view shall be dressed smooth.

3.1.5 Before members are assembled or installed, bearing surfaces to be in permanent contact shall be clean and free from dirt, scale, and corrosion. Immediately after cleaning, add a prime coat of red lead paint. Drifting to enlarge holes will not be permitted. Holes that must be enlarged to admit bolts shall be reamed.



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Poor matching of holes, caused by either shop errors or erection errors, shall be cause for rejection by the Contracting Officer. Steel erected under this contract shall be cleaned of any dirt, mud, or grease and left in a condition to receive coatings.

3.2 Strengthening of Deteriorated Members: Remove corrosion by wire brushing, sanding, or other approved method. Strengthen as directed.

3.3 Correction of Loose Connections: Remove loose rivets by cutting rivet heads off and removing the shank. If necessary, remove the rivet shank by drilling. Remove loose bolts in bolted connections. Bolts shall not be re-tightened. Install a new high strength bolt of the same size as the removed bolt or rivet, and tighten by the turn-of-the-nut method.

3.4 Repair of Bearings and Anchor Bolts: Remove corrosion by wire brushing, sanding, or other approved method. Additional repair requirements shall be as directed.

3.5 Repair of Tie Rods and Bracing: Tighten loose tie rods to the snug tight condition. Remove corrosion by wire brushing, sanding, or other approved method. Strengthen as directed.

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Section 05518 Pipe And Tube Railings

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of handrailings and ladders. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Post and Rails: Steel pipe, ASTM A 53, Type E or S, Grade B, Schedule 40.

2.2 Bars and Rungs: ASTM A 36.

2.3 Finish: Galvanized, ASTM A 123 or shop primer, Fed. Spec. TT-P-86, Type I or II; TT-P-645.

2.4 Fabrication:

2.4.1 Handrailings shall be smooth, with all projecting joints and sharp corners ground smooth. Welded joints shall be flush type. Members shall be neatly coped and continuously welded at all junctions of posts and rails. Flattening of the rail or post ends at junctions of posts and rails will not be permitted. Fittings or other connectors shall not be used at junctions of posts and rails.

2.4.2 Ladders: Rails shall be angle or flat bars. Rungs shall be round or square bars and shall project through rails. Welds shall be continuous.

2.4.3 Cages shall be provided as directed and shall be fabricated from flat bars. Vertical bars shall be inside supporting hoops. Bars shall be welded at each intersection.

3.0 EXECUTION: Hand rails and ladders shall be erected in accordance with the AISC Manual. Hand rails shall be rigidly attached to structure to provide unyielding obstruction. Ladders shall be bolted to structure unless otherwise directed.



SECTION 05520 METAL STAIRS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of metal stairs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

See Section 05520 for railing and ladder requirements.

2.0 PRODUCTS:

2.1 Steel Plates, Shapes and Bars: ASTM A 36 / A 36M.

2.2 Steel Bar Grating: ASTM A 36 and ASTM A510 for wire rod for grating crossbars.

2.3 Gray Iron Castings: ASTM A 48, Class 30.

2.4 Malleable Iron Casting: ASTM A 47.

2.5 Cast Aluminum: ASTM B 26 or B 108.

2.6 Metal Pan Treads: Pressed or structural steel pans, ASTM A 446, Grade B, shop coated, with a minimum depth of 2 inches for concrete fill.

2.7 Cast Metal Treads shall have an integral non-skid surface.

2.8 Grating and Metal Pan Treads shall have cast metal non-skid nosings.

2.9 Finish: Steel plates, shapes, bars, and grating shall be galvanized in accordance with ASTM A 386 or primed with fabricator's standard lead and chromate free shop primer as directed. Galvanizing repair paint shall be high-zinc-dust content complying with SSPC-Paint 20.

2.10 Fabrication: Stair units shall be shop welded or bolted. Units shall be shop-assembled to ensure fit. Stairs are to be shipped in the largest units practical to reduce field erection time. All fabrication shall conform to AISC Manual and ASTM A 6. Welding shall be in accordance with American Welding Society (AWS) D 1.1 and D 1.3.

3.0 EXECUTION:

3.1 Erection: Erect stairs level and plumb. Treads shall be level both front to back and across the width. Stair units shall be securely fastened to floors and landings. Field erection shall be in accordance with AISC Manual except that connections shall be bolted only.

3.2 Repair of Coatings: Connections and abrasions in the shop coating shall be touched up with an approved galvanizing repair paint or primer to match shop primer.

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SECTION 05528 ORNAMENTAL HANDRAIL AND RAILINGS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ornamental handrail and railings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Tubing, Bars, and Shapes: Finishes are to be agreed upon prior to starting fabrication.

2.1.1 Aluminum: ASTM B 221 alloy 6063-T5/ T-52 or ASTM B 429 alloy 6063-T6.

2.1.2 Steel: ASTM A 36, A 500, Grade A, A 501, or ASTM A29 Grade 1010.

2.1.3 Bronze: ASTM B 135, Alloy C23000.

2.1.4 Stainless Steel: ASTM A 554, Grade MT304; ASTM A 312, Grade TP304; ASTM A 167, Type 304.

2.1.5 Brass: ASTM B 135, Alloy C28000 and ASTM B 455, Alloy C38500.

2.2 Castings:

2.2.1 Aluminum: ASTM B 26, 356-T6.

2.2.2 Steel: Gray Iron, ASTM A 48, Class 30; Malleable Iron, ASTM A 47.

2.2.3 Bronze: ASTM B 584, Alloy C92300.

2.2.4 Stainless Steel: ASTM A 743, Grade CF8 or CF20.

2.2.5 Brass: ASTM B 584, Alloy C85700.

2.3 Wood Handrails shall be hardwood handrail of species and profile selected from manufacturer's standards, bonded to metal sub-rail, with manufacturer's standard transparent finish, unless otherwise directed.

2.4 Fasteners: Furnish fasteners of basic metal and alloy, matching finished color and texture as the metal being fastened, unless otherwise directed. Unless otherwise directed provide Phillips flat-head screws for exposed fasteners.

2.5 Bituminous Paint: SSPC-Paint 12 (cold-applied asphalt mastic).

2.6 Fabrication: Stainless steel and steel handrails shall have welded connections. Aluminum handrails shall be either welded or non-welded. Bronze and brass handrail shall have non-welded connections.

2.6.1 Welded Connections: Fabricate handrails and railings of materials indicated for interconnections of members by welding. Pre-assemble railing units, to maximum extent practicable, consistently with shipping and handling limitations. Welding shall comply with applicable AWS specifications, using method appropriate



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for metal and finish indicated. Grind exposed welds smooth and flush to match and blend with adjoining surfaces.

2.6.2 **Non-welded Connections:** Fabricate railings and handrails for interconnection of members by means of railing manufacturer's standard concealed mechanical fasteners and fittings unless otherwise directed. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

2.6.3 **Protective Lacquer:** Metal handrails shall be shop-coated with clear strippable non-yellowing lacquer, of type recommended for protection of the finished metal surface.

3.0 EXECUTION:

3.1 **Corrosion Protection:** Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint. Prevent other galvanic action and forms of corrosion by insulating metal and other materials from direct contact with incompatible materials.

3.2 **Expansion Joints:** Provide expansion joints at locations directed or at intervals not to exceed 40 feet. Provide internal sleeve type slip-joint extending 2 inches beyond joint on either side; fasten internal sleeve securely to one side, locate joint within 6 inches of post.

3.3 **Provide Anchorage Devices and Fasteners** where necessary for securing ornamental metal items to in-place construction, including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.

3.4 **Form Tight Joints** with exposed connections accurately fitted with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of the work, restore finishes to eliminate any evidence of such corrective work.

3.5 **Protection** Protect handrail finishes from damage during construction period. Remove protection and restore hand rail to like-new condition prior to acceptance of work.

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SECTION 05530 GRATING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of grating. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aluminum Grating, Banding, and Kick Plate: Rectangular, pressure-locked bearing bars, ASTM B 221/ B 221 M, 6063-T6 or 6061-T6, mill finish for bearing bars of gratings and shapes. 6061-T1 for grating crossbars.

2.2 Steel Grating:

2.2.1 Steel Plates, Shapes, and Bars: ASTM A36 / A 36M. Wire Rod for Grating Crossbars ASTM A 510 / A 510M. Galvanized Steel Sheet ASTM A 653 / A 653M, structural quality, Grade 33.

2.2.2 Bands and Kick Plate: ASTM A 36.

2.2.3 Finish: Galvanized, ASTM A 123 or painted with fabricator's standard shop primer.

2.3 Fabrication: Rectangular floor grating shall be in accordance with the "Metal Bar Grating Manual for Steel, Stainless Steel, and Aluminum Gratings and Stair Treads" MGB 531, published by the National Association of Architectural Metal Manufacturers (NAAMM). Heavy Duty Metal Bar Gratings shall comply with NAAMM MBG 532, "Heavy Duty Metal Bar Grating Manual". Where openings are directed in the grating, sections shall be laid out so that section edges will be centered on the openings. All openings shall be provided with kick plate or banding or required. All raw edges of grating shall be banded unless directed otherwise. Welding shall be in accordance with American Welding Society (AWS) D1.1, D1.2, and D1.3.

2.4 Shop Primer: Lead and chromate free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664; selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.

2.5 Grating Fasteners:

2.5.1 Ferrous and Galvanized provide type 304 or 316 stainless-steel fasteners.

2.5.2 Aluminum Provide fasteners of aluminum, nonmagnetic stainless steel, zinc-plated steel or other fastener warranted by manufacturer to be compatible with aluminum grating system.

3.0 EXECUTION:

3.1 Erection: Grating shall be anchored in place with welded stud bolts and saddle clips or other acceptable fasteners. Gratings shall be installed level and plumb without racking.



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3.2 Touchup shall be either with an approved galvanizing repair paint or a primer to match shop primer. Coat surfaces of aluminum in contact with concrete, masonry or wood with bituminous paint.

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SECTION 05540 CASTINGS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of castings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedure shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Frames, Covers, and Steps:

2.1.1 Gray Iron: ASTM A 48, Class 30.

2.1.2 Steel: ASTM A 27 / A 27M or ASTM A 148 / A 148M; Galvanized, ASTM A 123.

2.1.3 Aluminum: ASTM B 26 / B 26 M, alloy 356-T6.

2.2 Corner Protection: Steel angles with anchors, ASTM A 36; Galvanized, ASTM A 123.

2.3 Ventilation Boxes: Extruded Aluminum, ASTM B 221, 2063-T6.

2.4 Bituminous Paint: SSPC-Paint 12 (cold-applied asphalt mastic).

3.0 EXECUTION:

3.1 Frames, Steps, Corner Protection, or Other Castings to be embedded in concrete shall be accurately positioned and securely anchored to forms prior to placement of concrete.

3.2 Castings to be located in masonry or other building material shall be temporarily braced and held firm to ensure accurate placement in final construction.

3.3 Aluminum Surfaces that will be in contact with grout, concrete, masonry, wood, or dissimilar metals shall be coated with a heavy coat of bituminous paint.



SECTION 05556 ORNAMENTAL SHEET METAL

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ornamental sheet metals. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Materials:

2.1.1 Steel Sheet: ASTM A 527, galvanized or ASTM A 366/ A 366M, Class I.

2.1.2 Aluminum Sheet: ASTM B 209, Alloy 5052-H32 or ASTM B 209, Alloy 6061-T6

2.1.3 Extruded Aluminum: ASTM B 221 / B 221M, Alloy 6063-T6, T-52.

2.1.4 Extruded Bronze: ASTM B 455, Alloy UNS No. C38500 and ASTM B 135, Alloy C8000.

2.1.5 Bronze Plate or Sheet: ASTM B 36/ B 36M, alloy UNS No. C28000

2.1.6 Stainless Steel: ASTM A 554, Grade MT304; ASTM A 312, Grade TP304; ASTM A 167, Type 304.

2.2 Wall Louvers: Weather-resistant type, with bird screens and made to withstand a wind load of not less than 30 lb/sf. Wall louvers shall bear the Air Movement and Control Association (AMCA) certified rating program seal for air performance and water penetration in accordance with AMCA-500 and AMCA-511. The rating shall show a water penetration of 0.20 or less at 800 fpm.

2.2.1 Extruded Aluminum Louvers: Fabricated of extruded ASTM B 221 / B 221M 6063-T6 or 6063-T52 aluminum with a wall thickness of not less than 0.080 inch thick.

2.2.2 Formed Metal Louvers: Formed of zinc-coated steel sheet not thinner than 16 U.S. gauge, or aluminum sheet not less than 0.08 inch thick.

2.2.3 Mullions: Same material and finish as louvers.

2.2.4 Screens and Frames: Minimum 1/4-inch square mesh and minimum 16-gauge aluminum bird screen. Mount screens in removable, rewirable frames of same material and finish as the louvers.

2.3 Door Louvers: Inverted "Y" or "V" sight-proof type not less than 1-3/8 inch thick with matching metal trim. Louvers for exterior doors shall be weather-resistant type.

2.3.1 Extruded Aluminum Door Louvers: Minimum 0.050 inch thick 6063-T6 or 6063-T52 aluminum alloy. Frame and trim shall be clamp-in "L" type.

2.3.2 Formed Metal Door Louvers: Minimum 20 U.S. gauge steel sheet or minimum 0.050 inch thick sheet aluminum. Trim shall be beveled "Z" molding both sides.

2.3.3 Screens and Frames: Screen shall be aluminum, RR-W-365, Type VII. Mount screens in removable frames, capable of having screen replaced, of same material and finish as the louvers.

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2.4 Fasteners: Of same basic metal and alloy as fastened metal or 300 series stainless steel, unless otherwise indicated. Do not use metals that are incompatible with joined materials.

2.5 Finishes: Comply with National Association of Architectural Metal Manufacturers' (NAAMM) "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Protect exposed finishes from damage by applying a strippable temporary protective covering before shipping.

2.5.1 Aluminum: Factory-applied anodic coating, organic coating, or baked enamel.

2.5.1.1 Anodic Coating: AA-M10-C22-A31, Architectural Class II, clear finish or AA-M10-C22-A32, Architectural Class II, integral color finish.

2.5.1.2 Organic Coating: AAMA 605.2, 0.8 mil minimum dry film thickness, baked enamel finish.

2.5.1.3 Baked-Enamel Finish: AA-C12C42R 1X, Apply baked enamel finish complying with paint manufacturer's specifications for cleaning, conversion coating, and painting.

2.5.2 Steel: Factory-applied coating, rust-inhibitive primer and baked enamel finish coat, 1 mil minimum total dry film thickness.

2.6 Motorized Louvers: Electric motor shall be completely encased in the louver sill. Motor shall be U.L. approved, and comply with applicable NEMA standards, 120 volt, 60 hertz with a transformer.

3.0 EXECUTION:

3.1 Copper or Copper-Bearing Alloys: Paint copper or copper-bearing alloys in contact with dissimilar metal with heavy-bodied bituminous paint or separate with inert membrane.

3.2 Aluminum: Where aluminum contacts metal other than zinc, paint the dissimilar steel with a primer and two coats of aluminum paint.

3.3 Metal: Paint metal in contact with mortar, concrete, or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.

3.4 Wood: Paint wood or other absorptive materials that may become repeatedly wet and in contact with metal with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.



SECTION 05814 EXPANSION JOINT COVERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of building expansion joint covers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Frames and Covers:

2.1.1 Aluminum: ASTM B 221, 6063-T6.

2.1.2 Bronze: ASTM B 455, Alloy C 38500.

2.1.3 Stainless Steel: ASTM A 167, Type 304.

2.2 Resilient Filler: Neoprene, elasto-meric, or extruded vinyl.

2.3 Bituminous Paints: SSPC-Paint 12 (cold-applied asphalt mastic).

2.4 Fabrication: Shop assemble components and package with anchors and fittings. Provide joint components in single lengths whenever practical.

3.0 EXECUTION: Install assembly in accordance with manufacturer's printed instructions using anchors appropriate for the joining materials.

3.1 Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 Installation: Rigidly anchor expansion assembly to both sides of expansion joints to prevent misalignment.

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SECTION 05910 WATER TREATMENT PLANT DEBRIS RACKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation materials for repair and maintenance of debris racks for water treatment plant intake structures. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Manually Cleaned Racks: Repair or replacement parts for manually cleaned racks shall be galvanized or alloy steel rods, bars, or structural shapes. Galvanized material shall comply with ASTM A 153 and B 633. Alloy steel material shall comply with ASTM A 193, A 480; and A 564, as applicable.

2.2 Fasteners shall comply with ASTM A 307 or A 325 for bolts and A 502 for rivets.

2.3 Welding Electrodes shall comply with American Welding Society (AWS) D 1.1 "Structural Welding Code-Steel" requirements.

3.0 EXECUTION:

3.1 Silt Removal: Cofferdams and temporary bypass inlets shall be provided to allow de-watering. Water level shall be lowered, and silt and debris shall be pumped, shoveled, or otherwise removed from around rack. Silt and debris shall be disposed in an approved manner.

3.2 Repair or Replacement of Structural Members, Rods, and Shapes shall be by welding, bolting or riveting, as applicable to the existing construction. All welding shall be in compliance with AWS D1.1.



DIVISION 06 WOOD & PLASTIC



SECTION 06056 TIMBER BRIDGE COMPONENTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of timber bridge components. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Timber for Bridges shall comply with the specifications for timber bridges contained in the state's standard specifications.

2.2 Preservative Treatment shall comply with the specifications for preservative treatment contained in the state's standard specifications. All timber shall be treated unless specified otherwise.

2.3 Hardware and Castings:

2.3.1 Castings: Cast steel shall comply with ASTM A 27, Grade 70-36, or gray iron castings shall comply with AASHTO M105 Class No. 30, unless otherwise specified.

2.3.2 Hardware:

2.3.2.1 Machine Bolts, Drift-Bolts, and Dowels may be either wrought iron or rolled steel. Machine bolts shall have the square heads and nuts unless otherwise specified.

2.3.2.2 Cast Washers shall be made of malleable or gray iron. The outside diameter shall not be less than 3 1/2 times the bolt diameter and its thickness equal to the bolt diameter. Plate washers shall be made of wrought iron or rolled steel. The outside diameter shall not be less than 3 1/2 times the bolt diameter, and they shall not be less than 1/4 inch thick.

2.3.2.3 Nails and Spikes shall be hot-dip zinc coated per ASTM A 153 or of Type 304 stainless steel.

2.3.2.4 Finish: Unless otherwise specified, all hardware for treated timber bridges shall be galvanized or cadmium-plated. Galvanizing shall comply with ASTM A 123 or A 153. Cadmium plating of steel shall comply with ASTM B 766.

2.4 Timber Connectors shall be ring type or plate type and shall be galvanized in compliance with ASTM A 123 or A 153.

2.4.1 Split Ring: Fabricated from hot rolled steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33 of standard manufacture.

2.4.2 Tooth Ring: Stamped cold form 16-gauge steel sheet fabricated from hot rolled steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33 standard manufacture.

2.4.3 Shear-Plate Timber Connectors:



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2.4.3.1 Pressed Steel Type shall be fabricated from hot rolled steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33. Shear plates shall be of standard manufacture.

2.4.3.2 Malleable Iron Type shall be ASTM A 47, Grade No. 32510 (ASTM A 47M, Grade 22010). Casting shall be of standard manufacture.

2.5 Structural Glue-Laminated Timber shall comply with DOC PS 20, American Structural Lumber Standard, AITC 190.1 and AITC 111. Lumber for laminating shall be of such stress grade as to provide glue-laminated members with allowable stress values of 2,000 psi in bending, 1,600 psi in tension, 1,500 psi in compression parallel to grain, and 385 psi in compression perpendicular to grain for dry condition of service.

2.5.1 Adhesives shall meet requirements for wet condition of service.

2.5.2 Surfaces of Members shall be sealed with a penetration sealer or sealed with a sealer coat.

2.6 Ties: Fabricate strap ties from hot-rolled steel sheet complying with ASTM A 570 (ASTM A 570M). Hot dip galvanize after fabrication to comply with ASTM A 123 or ASTM A 153 (ASTM A 153M).

2.7 Asphalt Cement shall comply with ASTM D946 for penetration-graded material.

2.8 Surface Coarse Aggregate shall be ASTM D 692, except the gradation shall be as follows:

Sieve Size	Percent Passing (Wt.)
1/2 in.	100
3/8 in.	94-100
No. 4	15-45
No. 16	0-4

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Traffic Control: When traffic is maintained on bridge under repair or is directed over a temporary run-around, furnish, erect, and maintain all barricades, flags, torches, lights, guardrails, temporary pavement markings, and traffic control signs required for the protection of the public and for the direction of traffic. Number, type, color, size and placement of all traffic control color, size, and placement of all traffic control devices and the use of a flagman shall comply with USDOT FHA MUTCD "Traffic Controls for Highway Construction and Maintenance Operations." All traffic control devices in advance of the construction limits shall also be the responsibility of the Contractor.

3.1.2 Treated Timber: Give all cuts, abrasions, and holes made after treatment 2 applications of 60 percent creosote oil and 40 percent roofing pitch or brush coat with 2 applications of hot creosote oil and covered with hot roofing pitch. Any unfilled holes, after being treated with preservative oil, shall be plugged with treated plugs.

3.2 Erection:

3.2.1 Holes:

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3.2.1.1 Drift Bolts and Dowels: Bore holes for round drift bolts and dowels with a bit 1/16 inch less in diameter than the bolt or dowel to be used. The diameter of holes for square drift bolts or dowels shall be equal to the least dimension of the bolt or dowel.

3.2.1.2 Machine Bolts and Rods: Bore holes for field fabrication with a bit the same diameter as the bolt. Holes for fabrication prior to treatment shall be 1/16 inch larger than the bolt diameter.

3.2.1.3 Lag Screws: Bore hole with a bit not larger than the body of the screw at the base of the thread.

3.2.2 Nuts and Washers: Use a washer of the size and type specified under all bolt heads and nuts except carriage bolts. The nuts of all bolts shall be locked by scoring threads after they have been finally tightened.

3.2.3 Countersinking: Paint all recesses in treated timber formed for countersinking with hot creosote oil. Fill recesses likely to collect injurious materials with hot pitch.

3.2.4 Framing: All lumber and timber shall be accurately cut and framed to a close fit in such manner that the joints will have even bearing over the entire contact surfaces. Place stringers in position so that knots near edges will be in the top portions of the stringer. Screw type fastenings shall be screwed into place for the entire length of the fastener. Install the split ring and the shear plate in grooves cut by the Contractor. Force the toothed ring into the contact surfaces of the timbers jointed by means of pressure equipment.

3.2.5 Nailing: Nails and spikes shall be driven with just sufficient force to set the heads flush with the surface of the wood.

3.3 Maintenance and Repair Methods:

3.3.1 Timber Deck:

3.3.1.1 Remove Existing Plank Floor Deck and Fasteners and replace with new planks and fasteners. Lay the floor planks at 45 degrees to centerline of roadway. When more than one length of plank is required, stagger joints between abutting ends at least 3 feet in any two adjacent lines of plank.

3.3.1.2 Standard Wrought Washers shall be used under the heads of all lag screws and under the heads or nuts of all machine bolts. Where machine bolts are used for fastening the floor plank all nuts used shall be locknuts. Countersink heads of all lag screws and bolts in the surface of the floor. Fill recesses formed for countersinking with hot pitch.

3.3.1.3 Bituminous Surface Coat: Clean the floor of foreign materials. Apply asphalt cement at a temperature of 275 F to 350 F and at a rate of approximately 1/4 gallon per square yard of surface. The deck shall be dry at the time of bitumen application. Cover the entire surface with a thin coating of aggregate in a sufficient quantity to take up any free bitumen.

3.3.2 Hardware: Remove all corrosion by sandblasting or wire brushing. Replace all loose bolts and screws, adding washers as required. Replace deteriorated hardware.

3.3.3 Metal Tread Plates: Remove and replace treads as directed. Before installing treads, remove high spots and rough spots in the plank floor so that the treads will be in contact with the floor for their full length and width. Treads shall be laid in a heavy mop coat of asphalt filler. Treads shall be laid with a space of 1/4 inch between adjacent ends and shall be fastened by means of 3/8-inch galvanized bolts. Where bolts cannot be used, use 3/8-inch by 3-inch galvanized lag screws.



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3.3.4 Timber Railroad Bridge Deck: Remove defective ties and guardrail, including fasteners, and replace with similar ties, guardrail, and fasteners as directed.

3.3.5 Repair of Structural Timber Members: Repair, including removal and replacement, shall be as directed.



SECTION 06116 LIGHT WOODEN STRUCTURES FRAMING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for light wooden structures framing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Grading and Marking: Materials shall bear the grademark, stamp, or other identifying marks indicating grades of material and rules or standards under which they were produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification. The inspection agency for lumber shall be certified by the Board of Review, American Lumber Standards Committee, to grade species used. Except for structural laminated members, plywood, and lumber, bundle marking or certificates will be permitted in lieu of marking each individual piece. Species and grades are listed in Table 1 at the end of this section.

2.2 Sizes: Lumber sizes shall comply with DOC PS 20, "American Softwood Lumber Standards" under which produced, and unless otherwise specified, lumber shall be surfaced on four sides.

2.3 Moisture Content: At the time lumber and other materials are delivered and when installed in the work their moisture content shall be as follows:

2.3.1 Provide dressed lumber, S4S, unless otherwise indicated.

2.3.2 Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2 inch thickness or less, unless otherwise indicated.

2.3.3 Provide lumber with 15 percent maximum moisture content at time of dressing for 2 inch thickness or less, unless otherwise indicated.

2.3.4 Provide treated and untreated lumber over 2 inches in thickness, except roof planking with 25 percent maximum moisture content.

2.3.5 Provide roof planking 2 inches or more in thickness with a maximum 15 percent moisture content.

2.3.6 Materials Other Than Lumber: In accordance with standard under which product is produced.

2.4 Wood Member Design:

2.4.1 Trussed Rafters: As an option to standard rafters, trussed rafters may be provided. Connections shall be made with light metal plate connectors. Light metal plate connected wood trusses shall be designed in conformance with TPI Design Specifications for Metal Plate Connected Wood Trusses and fabricated in conformance with the TPI Quality Standard for Metal Plate Connected Wood Trusses and manufacturing tolerances of ANSI/TPI 1.

2.4.2 Non-stress Graded Members shall include plates, caps, bucks, studs, framing for skirting and other miscellaneous framing, blocking, nailers, sleepers, and grounds. Members shall be standard grade or No. 2 grade except studs may be stud grade. Non-stress member grades shall conform to the National Grading Rule



for Dimension Lumber established in conformance with the rules or standards under which produced and as applied in individual grading rules of applicable grading agencies.

2.4.3 Structural Glued Laminated Members shall be in accordance with AITC 117 and AITC 190.1. Appearance grade shall comply with AITC 110. Members shall be sealed with a penetrating sealer that is compatible with indicated finish. Use a wet-use type adhesive complying with ASTM D 2559.

2.5 Preservative Treatment: Lumber not over 5 inches thick and plywood, when in contact with soil, shall be treated in accordance with AWPB LP-22, LP-33, or LP-44; when specified to be painted or used in built-up roofing systems, AWPB LP-2 or LP-22; and for all other purposes, AWPB LP-2, LP-3, or LP-4. Except as otherwise specified, lumber over 5 inches thick shall be pressure preservative-treated in accordance with AWPB C2. Structural glued laminated timber shall be treated in accordance with AWPB C28. Wood treated with oil-borne preservatives shall be clean, free from surface oil, and properly seasoned for use in building construction. Wood treated with water-borne preservatives shall be marked with the word "Dry." Creosote or coal-tar solutions shall not be used. Surfaces of lumber that will be exposed shall not be incised. Exposed areas of treated wood that are cut or drilled after treatment shall receive a field treatment in accordance with AWPB M-4. Items of all-heart material of cedar, cypress, or redwood will not require preservative treatment, except when in direct contact with soil. Unless otherwise specified, all wood members exposed to weather or in contact with soil, water, masonry, or concrete, and all wood framing members directly above soil when the bottom elevation is 18 inches or less above soil shall be pressure preservative-treated. The following items will always be treated:

- a. All wood members set into concrete regardless of location, including flush-with-deck wood nailers for roofs.
- b. All wood members in contact with slabs-on-grade, including wood floor sleepers over waterproofed slab surface.
- c. All wood members in contact with foundation walls.
- d. Furring strips used on walls or partitions below grade.
- e. Furring strips used on exterior walls above grade.
- f. All wood members used for rough framing of openings in exterior concrete or masonry walls.
- g. All wood members used in exterior exposed construction such as steps, platforms, walkways, railings, and framing for skirting and other miscellaneous framing.
- h. Nailing strips used over fiberboard or gypsumboard wall sheathings as a base for wood shingles.

2.6 Fire-Retardant Treatment: Fire-retardant treated wood shall be pressure-treated in accordance with AWPB C20 for lumber and AWPB C27 for plywood. Treatment and performance inspection shall be by an independent and qualified testing agency that establishes performance ratings. Each piece or bundle of treated material shall bear identification of the testing agency to indicate performance in accordance with such rating. Treated materials to be exposed to rain wetting shall be subjected to an accelerated weathering technique in accordance with ASTM D 2898 prior to being tested for compliance with AWPB C20 or C27.

2.7 Connectors, Anchors, and Accessories: Fabricate from structured-steel shapes, plates, and bars complying with ASTM A 36 (ASTM A 36M); steel bars complying with ASTM A 575, Grade M 1020; and hot-rolled

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carbon steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33. Hot-dip galvanize to comply with ASTM A 123 or ASTM A 153.

3.0 EXECUTION:

3.1 All Nailing shall be in accordance with the Recommended Nailing Schedule as contained in NFOPA Manual for Wood Frame Construction.

3.2 Installation of Timber Connectors shall conform to applicable requirements of the NFOPA National Design Specification for Wood Construction.

3.3 Members shall be framed for passage of ducts and pipes and shall be cut, notched, or bored in accordance with applicable requirements of the NFOPA Manual for Wood Frame Construction.

3.4 Framing shall be kept at least 2 inches away from chimneys and 4 inches away from fireplace backwalls.

3.5 Leveling of Joists, Beams, and Girders on Masonry or Concrete shall be with slate or steel; on wood or metal, leveling shall be without shims.

Grading Rules	Species	No. 1	No. 2
NHLA	Red Oak	X	
NELMA	Northern Pine		X
	Eastern Hemlock-Tamarack		X
SPIB	Southern Pine	X	
WCLB	Douglas Fir-Larch		X
	Hem-Fir	X	
WWPA	Douglas Fir-Larch		X
	Hem-Fir	X	
	Douglas Fir-South	X	



SECTION 06140 SHEATHING, SIDING, AND SUBFLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sheathing, siding, and subflooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Materials shall bear the grademark, stamp, or other identifying marks indicating grades of material and rules or standards under which produced. Such identifying marks on material shall be in accordance with the rule or standard under which the material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification. The inspection agency for lumber shall be certified by the Board of Review, American Lumber Standards Committee, to grade species used. Bundle marking or certificates will be permitted in lieu of marking each individual piece, except for structural laminated members, plywood, and lumber. Size and moisture content shall conform to requirements of the rules or standards under which materials are produced.

2.2 Plywood shall be in accordance with DOC PS 1, Grade C-D for wall sheathing and Grade C-D with exterior glue for roof sheathing, unless otherwise specified.

2.3 Roof Decking Design Stresses shall be as specified for structural members. Decking shall be tongue and groove, V-jointed, and matched and dressed where exposed. As an option, fabricated, laminated lumber decking with interlocking tongue and groove joints may be provided.

2.4 Sheathing shall be of either fiberboard, gypsum board, plywood, V-structural-use panels, or wood for wall sheathing; and either plywood, structural-use panels, or wood for roof sheathing and skirting for temporary structures including access doors through skirting as required.

2.4.1 Fiberboard shall be in accordance with ANSI/AHA A194.1, Type cellulosic fiberboard sheathing with square edges, Class 1 (regular density) or Class 2 (intermediate density).

2.4.2 Gypsum Board shall be in accordance with ASTM C 79.

2.4.3 Structural-Use Panels shall meet the qualification requirements of APA Performance Standards and Policies for Structural-Use Panels. Panels shall conform to APA Product Guide for Performance Rated Panels for Sheathing, Exp 1 or Ext; or Structural I Rated Sheathing, Exp 1 or Ext.

2.4.4 Wood shall be center-matched, ship-lapped, or square-edge, except exposed roof sheathing shall be V-jointed, matched and dressed. Species and grade shall be in accordance with Table 1 at the end of this section.

2.5 Shear Wall Panels shall be of plywood or sheathing conforming to APA Product Guide for Performance Rated Panels for Sheathing, Exp 1 or 2, or Ext; or Structural I or II Rated Sheathing, Exp 1 or Ext.

2.6 Subflooring shall be of either plywood, structural use panels, or wood.

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2.6.1 Plywood shall conform to DOC PS 1; Grade C-D for uses not otherwise specified, Grade C-D with exterior glue for reception of underlayment as wood flooring, underlayment grade with exterior glue or C-C (Plugged), and exterior or exposure 1 grade for use as a combination subfloor-underlayment under resilient flooring.

2.6.2 Structural-Use Panels shall be APA Rated structural-use panels qualified for subflooring or combination subfloor-underlayment under APA Performance Standards and Policies for Structural-Use Panels.

2.6.3 Wood shall be center-matched, ship-lapped, or square-edge. Species and grade shall be in accordance with Table 1 at the end of this section.

2.6.4 Adhesive shall conform to APA AFG-01.

2.7 Underlayment shall be either hardboard, particleboard, or plywood.

2.7.1 Hardboard shall be in accordance with ANSI A135.4, service class 4, surface SIS, with back side sanded to produce boards of uniform thickness.

2.7.2 Particleboard shall be in accordance with ANSI A208.1, Grade PBU, thickness as indicated.

2.7.3 Plywood shall be in accordance with DOC PS 1, underlayment grade B-C Exterior with fully sanded face, thickness as indicated but not less than 1/2 inch.

2.8 Moisture Barrier of Building Paper shall be asphalt-saturated organic felt conforming to ASTM D 226, Type I (No. 15 asphalt felt), unperforated or air retarder complying with ASTM E 1677, 3 mils thick.

3.0 EXECUTION:

3.1 Nailing shall be in accordance with the Recommended Nailing Schedule as contained in NFOPA Manual for Wood Frame Construction.

3.2 Sheathing Installation:

3.2.1 Fiberboard sheathing shall be applied with edges 1/8 inch apart at joints, fitted snugly at abutting frames of openings, and nailed or stapled. Sheets 2 feet wide shall be applied horizontally with the tongued groove up and with vertical joints over supports and staggered. Sheets 4 feet wide shall be applied vertically, extended over top and bottom plates, and with all vertical and horizontal joints over supports.

3.2.2 Gypsum Board Sheathing shall be applied with edges in light contact at joints and nailed. Sheets 2 feet wide shall be applied horizontally with tongued edge up and with vertical joints over supports and staggered. Sheets 4 feet wide shall be applied vertically, extended over top and bottom plates, and with all vertical and horizontal joints over supports.

3.2.3 Plywood Sheathing shall be applied with edges 1/8 inch apart at side joints, 1/16 inch apart at end joints, and nailed at supported edges at 6 inches on center and at intermediate supports 12 inches on center. Nailing of edges shall be 3/8 inch from the edges. Wall sheathing shall extend over top and bottom plates. If applied horizontally, the vertical joints shall be made over supports and staggered. Wall sheathing over which wood shingles are to be applied shall be applied horizontally. Roof sheathing shall have face grain at right angles to supports with end joints made over supports and staggered.

3.2.4 Structural-Use Panels shall be applied with edges 1/4 inch apart at side joints, 1/8 inch apart at end joints, and nailed at supported edges at 6 inches on center and at intermediate supports 12 inches on center. Nailing of



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edges shall be 3/8 inch from the edges. Wall sheathing shall extend over top and bottom plates and, if applied horizontally, the vertical joints shall be made over supports and staggered. Wall sheathing over which wood shingles are to be applied shall be applied horizontally. Roof sheathing shall have end joints made over supports and staggered.

3.2.5 Wood Sheathing: End joints shall be made over framing members and so alternated that there will be at least two boards between joints on the same support. Each board shall bear on at least three supports. Boards shall be nailed at each support using two nails for boards 8 inches and less in width and three nails for boards more than 8 inches in width.

3.3 Subflooring Installation: A clearance of 1/4 inch shall be provided at walls. Plywood subflooring and structural-use panel subflooring may be installed with adhesive conforming to APA AFG-01 and nails spaced at 12 inches on center. Installation of subflooring with adhesives shall be in accordance with APA Design/Construction Guide: Residential and Commercial. Each plywood or structural-use panel shall have end joints made over supports and staggered. Where finish flooring of different thicknesses is used in adjoining areas, wood strips of the thickness required to bring the finish flooring surfaces to the same plane shall be used under the subfloor panels. Plywood subflooring shall be applied with the face grain at right angles to the supports, with edges 1/8 inch apart at side joints and 1/16 inch apart at end joints. Structural-use panel subflooring shall be applied over two or more supports with the long dimension across supports and with edges 1/4 inch apart at side joints and 1/8 inch apart at end joints. Wood subflooring shall bear on at least three supports.

3.4 Installation of Underlayment shall be applied with edges 1/32 inch apart at joints and a clearance of 1/4 inch at walls. Joints at underlayment shall not be located directly over parallel joints at subflooring. Power driven wire staples of lengths recommended by the underlayment manufacturer may be used in lieu of nails. Any surface roughness at nail heads or joints shall be lightly sanded to blend with the undisturbed surface. When plywood combination subfloor-underlayment is used in lieu of separate layers, it shall be installed as specified for plywood subfloor, except all joints shall be made over supports with edge joints spaced 1/8 inch apart and end joints spaced 1/16 inch apart. When plywood combination subfloor-underlayment is tongued and grooved, only end joints shall require support. Tongued and grooved combination subfloor-underlayment shall be applied with joints spaced 3/32 inch apart.

3.5 Installation of Shear Wall Plywood or Structural-Use Panels shall be installed with the long dimension parallel or perpendicular to the supports. Blocking shall be provided behind edges not located over supports.

3.6 Moisture Barrier shall be applied over all wood wall sheathing, over studs to directly receive horizontal siding or board siding, over any wall sheathing to receive an unbacked stucco base, and over square edge wood subflooring to receive wood strip flooring. Moisture barrier over sheathing shall be applied horizontally, starting at the bottom, lapped 6 inches at edges and ends, and nailed at laps 16 inches on center. Moisture barrier over subfloor shall be applied as the strip flooring installation progresses and lapped 2 inches at edges and ends.

SPECIES AND GRADE

Subflooring, Roof Sheathing, Wall Sheathing, Furring

Grading Rules	Species	Standard Comm	Const Board	No.2 Comm	No.2 Comm	No.3 Comm
NHLA	Cypress			X		
NELMA	Northern White Cedar					X
	Eastern White Pine	X		X		
	Northern Pine	X		X		

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	Balsam Fir		X	
	Eastern Hemlock-Tamarack			

NHPMA	Eastern White Pine			
	Northern Pine			
	Balsam Fir			
	Eastern Hemlock-Tamarack			

RIS	Redwood	X		
SCMA	Cypress		X	
SPIB	Southern Pine		X	

WCLB	Douglas Fir-Larch	X		
	Hem-Fir	X		
	Sitka Spruce	X		
	Mountain Hemlock	X		
	Western Cedar	X		

WWPA	Douglas Fir-Larch			X
	Hem-Fir	X		
	Idaho White Pine		X	
	Lodgepole Pine		X	
	Ponderosa Pine		X	
	Sugar Pine	X		
	Englemann Spruce		X	
	Douglas Fir South		X	
	Mountain Hemlock		X	
	Subalpine Fir	X		
	Western Cedar		X	



SECTION 06181 WOOD TRUSSES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for maintenance and repair of wood trusses. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Structural Glue-Laminated Timber shall comply with DOC PS 20, American Structural Lumber Standard, AITC 190.1 and AITC 111. Lumber for laminating shall be of a stress grade providing glue-laminated members with allowable stress values of 2,000 psi in bending, 1,600 psi in tension, 1,500 psi in compression parallel to grain, and 385 psi in compression perpendicular to grain for dry condition of service.

2.1.1 Adhesives shall meet requirements for dry condition of service.

2.1.2 Appearance of Members shall be Industrial Grade. Plywood shall comply with DOC PS 1.

2.1.3 Surfaces of Members shall be sealed with a penetrating sealer. Members shall be delivered individually wrapped. Do not unwrap until members are installed and adequate protection is provided.

2.2 Timber Connections:

2.2.1 Split-Ring Connectors shall be fabricated from hot rolled steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33. Rings shall be of standard manufacture and shall fit snugly into pre-cut groove.

2.2.2 Shear Plate:

2.2.2.1 Pressed Steel Type shall be fabricated from hot rolled steel sheet complying with ASTM A 570 (ASTM A 570M), Grade 33. Shear plates shall be of standard manufacture.

2.2.2.2 Malleable Iron Type: Casting shall comply with ASTM A 47, Grade 32510 (ASTM A 47M, Grade 22010). Casting shall be of standard manufacture.

2.3 Fasteners:

2.3.1 Provide fasteners of size and type indicated that comply with requirements specified. When exposed to weather, in ground contact, or in area of high humidity, provide fasteners with hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.

2.3.2 Miscellaneous Bolts and Screws: ASTM A 307 with ASTM A 563 (ASTM A 563M) hex nuts and flat washers. Type, size, and finish shall be best suited for the intended use.

2.3.3 Wood Screws: ASME B18.6.1.

2.3.4 Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M)

2.4 Saw Lumber:

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2.4.1 Lumber shall be one of the following species and commercial grades:

2.4.1.1 Douglas Fir-Larch North: Select structural per NLGA rules.

2.4.1.2 Southern Pine: No. 1 Dense per SPIB rules.

2.4.1.3 Douglas Fir-Larch: Select structural per WCLIB or WWPA rules.

2.4.2 Sizes, Grading and Marking shall comply with the requirements of the rules or standards under which produced, and unless otherwise indicated, lumber shall be surfaced on four sides. Dressed sizes shall be accepted as the minimum net sizes conforming to nominal sizes. Lumber shall be free from warp. All timber materials shall bear a grademark or other identifying marks indicating grades of material and standards under which produced. If lumber is treated, treatment and retention shall be indicated.

2.5 Preservative Treatment: All lumber shall be preservative-treated unless otherwise indicated. Pressure treat with water borne solution to comply with AWPAC2 for above ground use. After treatment, redry heavy timber to 19 percent maximum moisture content. Use preservative solution without water-repellent additive. Do not use chemicals containing arsenic or chromium. Where fabrication must be done after treatment, apply a field-treatment preservative to comply with AWPAM4.

2.6 Moisture Content: Provide timber with 19 percent maximum moisture content at the time of dressing or timber that is unseasoned at time of dressing but with maximum moisture content of 19 percent at the time of installation.

3.0 EXECUTION:

3.1 Wiring Conflicts: Piping and electrical wiring conflicting with erection of members shall be removed and placed in a new position approved by the Contracting Officer. Provide temporary utilities and coordination to prevent outages during this period.

3.2 Connections: Drive nails and spikes with just sufficient force to set the heads flush with the surface of the wood. Drill bolt holes a maximum of 1/16 inch larger than the diameter of the bolt. A washer not less than a standard cut washer, or in lieu thereof a metal plate or strap, shall be between the wood and the bolt head and between the wood and the nut. Lag screw holes for the unthreaded portion of the shank shall be the same diameter as the shank and the same depth as the length of the unthreaded shank. The lead hole for the threaded portion of the shank shall be properly sized for species of lumber involved. Insert the threaded portion of the lag screw into its lead hole by turning with a wrench.

3.2.1 Nails: Use 8-penny or larger nails for nailing through 1-inch thick lumber and for toe nailing 2-inch thick lumber; use 16-penny or larger nails for nailing through 2-inch thick lumber. Size and spacing of nails shall comply with NFOPA Specification for Stress-Graded Lumber and its Fastenings.

3.2.2 Wood Screws: Lead holes for withdrawal resistance shall have a diameter of 70 percent of the root diameter of the wood screw. Lead holes for lateral resistance shall have a diameter of 7/8 of the root diameter of the wood screw. The part of the hole receiving the shank shall be about 7/8 the shank diameter. Insert screws in the lead holes by turning with a screw driver or other tool.

3.2.3 Timber Connections: Install the split ring and shear plate in grooves cut by the Contractor.

3.3 Truss Connections and Splices: Tighten all loose bolts and screws, adding washers as required. Remove and replace severely corroded or deteriorated bolts and screws.



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3.4 Repair of Bearings and Anchor Bolts: Remove corrosion by wire brushing, sanding, or other approved method. Additional repair requirements shall be as directed.

3.5 Repair of Excessive Truss Deflection: Install tension turnbuckles or install a strengthening system as required to correct deflection.

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SECTION 06220 MILLWORK

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of millwork. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **General:** All millwork products shall be marked with manufacturer's identification and grade, in compliance with Architectural Woodwork Institute (AWI) quality grade. Products shall conform to applicable requirements of AWI Architectural Woodwork Quality Standards, Guide Specifications, and Quality Certification Program and Woodwork Institute of California (WIC) Manual of Millwork.

2.2 **Millwork:** Millwork shall include the following representative examples of architectural woodwork:

- a. Exterior cornices, fasciae, and soffits.
- b. Trim for exterior and interior openings.
- c. Frames for exterior and interior doors and other openings (refer to Section 08210 for specifications).
- d. Casework.
- e. Wood shelving.
- f. Stairs and railings.

2.3 **Wood Moisture Content:** Lumber for millwork shall be kiln-dried to an average moisture content range of 9 percent to 13 percent for exterior work and 6 percent to 11 percent for interior work. Kiln-dried lumber shall have a maximum moisture content of 19 percent. Kiln-dried plywood shall have a maximum moisture content of 15 percent.

2.4 **Grade of Work:** Interior millwork surfaces that are to receive transparent finishes shall be premium grade of the species selected in compliance with DOC PS 20. Millwork surfaces that are to be painted shall be custom grade of the species selected.

2.5 **Fire-Retardant Marking:** Each unit of fire-retardant treated wood (per AWPAC20) and plywood (per AWPAC27) shall be marked with the producer's label and UL label showing grade and rating.

2.6 **Preservative Treatment:** Exterior millwork and designated interior millwork shall be preservative-treated in accordance with NWWDA I.S.4, AWPAC2, and AWPAC9. Use a preservative that will not interfere with the designated finish. Apply field treatment brush coat on surfaces cut after preservative treatment complying with AWPAM4.

3.0 **EXECUTION:** Millwork shall be installed plumb, level, true, and straight with no distortions. Millwork that abuts adjoining work shall be scribed and cut to fit. Millwork shall be installed with a minimum number of joints, coped at returns, mitered at corners, and shall comply with quality standards for joinery.



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SECTION 06240 CABINETS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cabinets. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cabinets shall comply with AWI Section 400 and WIC Section 14.

2.2 Countertops shall comply with AWI Section 400 and WIC Sections 14 (wood), 16 (laminate), and 17 (solid-surfacing-material).

2.3 Materials:

2.3.1 Particleboard shall be ANSI A208.1 mat-formed particleboard, Grade 1-M-2 with minimum density of 40 lbs/cu ft, internal bond of 60 psi; and minimum screw holding capacity of 225 lbs on faces and 200 lbs on edges.

2.3.2 Plastic Laminate shall be NEMA LD 3.

2.3.3 Hardwood Plywood shall be HPVA HP-1.

2.3.4 Hardwood Lumber shall be clear, dry, sound, and free of defects, First Grade Lumber (NHLA).

2.3.5 Hardboard shall be AHA A135.4, Class 1, tempered.

2.3.6 Decorative Boards shall be low pressure melamine plastic laminate composite panels.

2.3.7 Medium Density Fiberboard shall be ANSI A208.2.

2.4 Transparent Finish Construction Wood Cabinet:

2.4.1 Solid Lumber and Plywood Face Veneer shall be selected for compatible grain and color of the species.

2.4.2 Semi-Exposed Materials:

2.4.2.1 Solid Lumber: Dry, sound, selected to eliminate appearance defects, of any species of hardwood or softwood, with color and grain characteristics similar to exposed portions.

2.4.2.2 Plywood: Species to match color and grain of exposed members; with particleboard core or veneer core.

2.4.3 Style of Face Construction: Provide base, wall, and full height units with drawer fronts, doors, and fixed panels overlaying and concealing face frames of cabinet body, as required.

2.4.4 Face Frame Style: Provide base, wall, and full height units with face frames of cabinets exposed around drawer fronts and doors.



2.4.4.1 Drawer Fronts and Doors: Surface applied or recessed flush with cabinet front, as required.

2.4.4.2 Flush Style Door Construction: Lumber core plywood, 5-ply with hardwood face veneers and cross banding.

2.4.4.3 Flush Style Drawer Fronts: Same construction as door, or solid or glued-up lumber, not less than 1/2 inch thick.

2.4.4.4 Stile and Rail Drawer Fronts and Doors: Of design selected, with stiles and rails of solid lumber, 3/4 inch thick for doors and 5/8 inch thick for drawer fronts.

2.5 Countertop Construction:

2.5.1 Exposed Surfacing Material: High pressure plastic laminate, 0.050 inch thick, general purpose type (GP50); except where post-formed countertop configuration is required, when 0.042 inch thick, post-forming type (PF42) shall be used.

2.5.2 Substrate (Core) for Exposed Surfacing Material: Particleboard.

2.5.3 Countertop Configuration: Provide countertops with front styles (nose), cove, and back-splash style, as required.

2.5.4 Countertop Thickness: Not less than 1-1/2 inches with substrate (core) not less than 3/4 inch thick.

2.6 Cabinet Hardware: ANSI/BHMA A156.9.

2.7 Accessories: Provide designated accessories.

3.0 EXECUTION: (Section not used.)

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SECTION 06250 WOOD PANELING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood paneling. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Paneling shall bear a stamp, brand, or other identifying mark indicating quality, construction and compliance with the grading rules of the respective grading and inspecting agency for the species and product indicated complying with DOC PS 20, AWI and WIC standards. Marking shall be placed on blind sides only.

2.2 Hardboard: AHA A135.4.

2.3 Medium-Density Fiberboard: ANSI A208.2.

2.4 Particleboard: ANSI A208.1.

2.5 Softwood Plywood: DOC PS 1.

2.6 Hardwood Plywood and Face Veneers: HPVA HP-1.

2.7 High-Pressure Decorative Laminate: NEMA LD 3.

2.8 Fire-Retardant-Treated Materials: Achieve flame-spread ratings and smoke developed ratings for product type complying with ASTM E 84.

3.0 EXECUTION:

3.1 Preparation: Backprime material when exposed to moisture and high relative humidity.

3.2 Installation:

3.2.1 Plywood Paneling: Where grain character or color variations are noticeable, select and arrange panels on each wall for best match of adjacent panels. Install in accordance with manufacturer's instructions.

3.2.2 Board Type Paneling: Arrange in random-width pattern unless boards are of uniform width. Install in accordance with manufacturer's instructions.

3.2.3 Hardboard Products Type Paneling: Install in accordance with manufacturer's instructions.



DIVISION 07 THERMAL & MOISTURE PROTECTION

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Section 07110 Bituminous Waterproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bituminous waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Waterproofing:

2.1.1 Primer: Asphalt waterproofing material shall comply with ASTM D 41.

2.1.2 Bitumen: A heavy-bodied bituminous compound of trowel consistency, heavily reinforced with fiber, complying with Fed. Spec. SS-C-153, Type I.

2.2 Tar Waterproofing:

2.2.1 Primer: Creosote complying with ASTM D 43.

2.2.2 Bitumen: Coal-Tar Pitch complying with ASTM D 450.

3.0 EXECUTION:

3.1 Primer:

3.1.1 Diluted Asphalt: Apply by brush or power spray in a continuous unbroken film, free from pinholes or other surface breaks.

3.1.2 Creosote: Apply by brush, roller, or power spray.

3.2 Bitumen:

3.2.1 Asphalt: Apply a 1/16 inch coating by trowel in a continuous unbroken film. Wait 24 hours and apply a second 1/16 inch coating.

3.2.2 Coal-Tar Pitch: Apply with mop or roller in a continuous, unbroken film, free from pinholes over any exposed surface area. Wait 24 hours and apply second coat.



Section 07111 Bituminous Membrane Waterproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bituminous membrane waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Membrane Waterproofing:

2.1.1 Primer: Asphalt waterproofing compound complying with ASTM D 41.

2.1.2 Joint Covering: Asphalt saturated felt, complying with ASTM D 250.

2.1.3 Membrane: Burlap fabric, complying with ASTM D 1327; open mesh fiberglass, smooth, evenly woven to permit complete penetration of asphalt compound complying with ASTM D 1668, Type I; or asphalt-coated or saturated felt, complying with ASTM D 250.

2.1.4 Bitumen: A heavy-bodied bituminous compound of trowel consistency complying with Fed. Spec. SS-C-153, Type I.

2.1.5 Protection: A rigid or semi-rigid board for protection of membrane waterproofing from penetration by sharp objects during backfilling and later settlement. The board shall be an asphaltic core board or asphalt-saturated fiberboard complying with ASTM C 208. Thickness shall be 1/8 inch.

2.2 Tar Membrane Waterproofing:

2.2.1 Primer: Creosote complying with ASTM D 43.

2.2.2 Joint Covering: Coal-tar saturated felt, complying with ASTM D 227.

2.2.3 Membrane: Burlap fabric complying with ASTM D 1327; open mesh fiberglass, smooth, evenly woven to permit complete penetration of coal-tar compound; or coal-tar coated or saturated felt.

2.2.4 Bitumen: Coal-tar pitch complying with ASTM D 450.

2.2.5 Protection: A rigid or semi-rigid board for protection of membrane waterproofing from penetration by sharp objects during backfilling and later settlement shall be provided. The board shall be an asphaltic core board or asphalt saturated fiberboard. If used with coal-tar products, the board shall be faced with a polyethylene film to separate dissimilar materials. Thickness shall be 1/8 inch.

3.0 EXECUTION:

3.1 Installation:

3.1.1 Primer:

3.1.1.1 Diluted Asphalt: Apply by brush or power spray in a continuous unbroken film, free from pinholes or other surface breaks.

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3.1.1.2 Creosote: Apply by brush, roller, or power spray.

3.1.2 Bitumen and Membrane:

3.1.2.1 Reinforce all inside and outside corners, joints, cracks, or places where stresses are likely to occur, with no less than two plies of fabric in alternate coats of bitumen.

3.1.2.2 All penetrations through the wall such as pipes, conduits, etc., shall be sealed with two additional plies.

3.1.2.3 Apply the specified number of plies of membrane material in alternate coats of bitumen.

3.1.2.4 For vertical applications, secure membranes near the top of each course.

3.1.2.5 Coat last ply of membrane with a thorough coat of bitumen.

3.2 Protection: As the membrane is completed, apply the protection course. Apply the protection board in a solid coating of asphalt or coal-tar pitch. All coatings must be dry before application of the protection board. Apply protection board by the lap method (lap each sheet 6 inches over preceding sheet) or by the batten method (butt each sheet then apply a 6-inch strip of protection board in adhesive over all joints).



SECTION 07115 PLASTIC SHEET WATERPROOFING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of plastic sheet waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Butyl Sheet shall be an impermeable butyl rubber membrane 1/16 inch thick having a tensile strength of 1,200 psi minimum, complying with ASTM D 412, and an elongation of 300 percent minimum, complying with ASTM D 412. Butyl sheet shall be resistant to ozone and remain flexible to 40 F below zero.

2.2 Neoprene Sheet shall be an impermeable, self-extinguishing, ozone-resistant material 1/16 inch thick. Neoprene shall have a tensile strength of 1,500 psi minimum, complying with ASTM D 412, and an elongation of 250 percent minimum, complying with ASTM D 412.

2.3 Ethylene Propylene Diene Monomers (EPDM) Sheet shall be an impermeable membrane resistant to ozone and ultraviolet. EPDM shall have a tensile strength of 1,400 psi minimum, complying with ASTM D 412, and an elongation of 300 percent minimum, complying with ASTM D 412.

2.4 Vinyl Sheet shall be heavy-duty polyvinyl chloride sheet, complying with ASTM D 3083.

2.5 Primers: As required.

2.6 Adhesives:

2.6.1 Adhesive for Cold Application shall be a non-setting bitumen cut-back asphalt.

2.6.2 Adhesive for Hot Application shall be asphalt complying with ASTM D 312, Type III.

2.7 Butt Joint Tape: Elastomeric vapor barrier in 6-inch wide rolls. Tape shall be self-adhesive and require no additional adhesive.

3.0 EXECUTION:

3.1 Primer: Apply primer by brushing or spraying uniformly over surface to receive membrane. Allow primer to dry before applying membrane.

3.2 Membrane:

3.2.1 At Footings, shape the membrane to conform to the surface by cutting a strip of sufficient width to seat over the footing and at least six inches up the wall.

3.2.2 On Vertical Surfaces, apply adhesive to both wall and membrane.

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SECTION 07120 FLUID-APPLIED WATERPROOFING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fluid-applied waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Two-Component Polyurethane: Two component, self-curing urethane system to form a seamless, permanently flexible and waterproof coating. Compound shall be a light-weight, 99 percent solids, liquid-applied system.

2.2 Single Component Polyurethane: One-part moisture cured elastomeric urethane for adhesion to concrete or wood. Compound shall be hard, flexible material with resistance to weather, gas, oil, and salt water having a temperature range of -65 F to +200 F.

2.3 Two-Component Polyurethane Rubber Base: Liquid-applied, elastomeric two component urethane rubber, 100 percent solids materials containing no coal-tar or asphaltic extenders. After proper mixing, with activators that are supplied as a unit, it shall cure to an elastomeric urethane rubber.

2.4 Two-Component Polysulfide Base Liquid Polymer: Two-component, chemically-curing, high-solids compound containing liquid polysulfide polymer. Product shall be furnished in two components: Part 1, consisting of the cure agent and suitable reinforcing agents; Part 2, the base component, incorporating liquid polysulfide polymer.

2.5 Modified Polyurethane Coal-Tar (Spray Grade): Two-part product, consisting of: Part 1, a blend of polyurethane resins, and Part 2, containing a selected blend of coal-tars, catalysts, and modifiers. The cured membrane shall be a seamless, low modulus, high elongation, physically and chemically resistant synthetic rubber.

2.6 Modified Polyurethane Coal-Tar (Trowel Grade): One component polyurethane coal-tar modified compound that forms a continuous seamless, flexible, impervious membrane when applied to vertical or horizontal surfaces.

2.7 Elastomeric Sheet Reinforcing: Smooth, evenly woven, open mesh glass fiber fabric weighing 1/4 ounce per square foot and which permits complete penetration of waterproofing compounds.

2.8 Protection Board: Rigid or semi-rigid board for protection of membrane waterproofing shall be an asphaltic core board or an asphalt saturated fiberboard complying with ASTM C 208. Protection board shall be 1/8 inch thick. If used with coal-tar products, the board shall be faced with a polyethylene film to separate dissimilar materials.

3.0 EXECUTION:

3.1 Two-Component Polyurethane:

3.1.1 Prime surfaces as required.

3.1.2 Spray machine mixed membrane coating directly onto the prepared surfaces to the desired thickness.



3.1.3 Apply the second spray coat after application of the first coat.

3.2 Single Component Polyurethane:

3.2.1 Prime surfaces as required.

3.2.2 Application shall be spray-applied.

3.2.3 Below grade exterior applications shall receive two coats.

3.3 Two-Component Polyurethane Rubber Base:

3.3.1 Prime surfaces as required.

3.3.2 Apply compound by hand trowel to a thickness of 1/16 inch.

3.3.3 Before membrane is completely cured, place protection board over the surface.

3.4 Two-Component Polysulfide Base Liquid Polymer:

3.4.1 Fill all joints and cracks over 1/8 inch in width with a polysulfide polymer base sealant. Apply a bond breaker over the joint and cover with 100 mil coating of the elastomeric material.

3.4.2 Apply membrane by spray in a continuous unbroken film. Surface coverage shall be at the rate of approximately 20-25 square feet per gallon to produce a thickness of 60 mils.

3.5 Modified Polyurethane Coal-Tar (Spray Grade):

3.5.1 Prime surfaces with required primer.

3.5.2 Apply with proper spray equipment in a continuous unbroken film. Application rate shall be approximately 25 sq. ft. per gallon to produce a thickness of 60 mils.

3.6 Modified Polyurethane Coal-Tar (Trowel Grade):

3.6.1 Prime surfaces with required primer.

3.6.2 Mix and apply with hand trowel in a continuous unbroken film.

3.6.3 Place protection board after membrane has attained its initial set.

3.7 Elastomeric Sheet Reinforcing for Fluid-Applied Waterproofing: Trowel fabric into first coat of membrane while membrane material is soft and pliable. Install sheet reinforcing in compliance with membrane compound manufacturer's requirements.

3.8 Protection Board:

3.8.1 Apply protection board over membrane while membrane material is still tacky.

3.8.2 Apply protection board by the lap method.



Section 07125 Metal Waterproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Lead Sheet and Strip shall be fabricated from 99 percent pure soft lead or lead alloy containing six to seven percent antimony. Four or eight pound per square foot lead shall be used for all work.

2.2 Copper Sheet and Strip shall be fabricated of 16 or 20 ounce per square foot tough-pitch copper. Copper shall be either hot-rolled soft copper or cold-rolled copper. Copper shall have a lead coating of 15 pounds per 100 square feet of copper (7-1/2 pounds on each face of copperplate).

2.3 Solder: Solder shall be 50 percent lead and 50 percent tin solder with a resin flux.

2.4 Bituminous Paint shall be high quality proper bodied bituminous (asphalt) compound of brush or spray consistency. Compound shall contain a hydrophilic wetting agent to ensure proper adhesion. Bituminous paint shall comply with ASTM D41.

3.0 EXECUTION:

3.1 Lead Pan Waterproofing:

3.1.1 Preparation: All surfaces on which lead is to be applied shall be smooth; rough projections shall be eliminated. Lead surfaces in contact with uncured concrete, mortar, or in other corrosive locations shall be given a coat of bituminous paint prior to installation.

3.1.2 Small Holes and Spot Repairs shall be accomplished by soldering the leak spots.

3.1.3 Large Damaged Areas shall be cut out and replaced with lead sheet or strip of the proper weight lead. Apply a coating of bituminous paint to the affected area after the new sheet or strip lead has been soldered in place.

3.1.4 Joints: Use optimal size of sheet or strip to compensate for expansion. Pre-tin all soldered joints and clean immediately after soldering. All joints shall be soldered.

3.1.5 Corners: Wall sheets shall end short of corners. Mold full sheet around corners and joint with wall sheets each side of corner.

3.2 Copper Waterproofing:

3.2.1 Preparation: All surfaces on which copper is to be applied shall be smooth; rough projections shall be eliminated. Give copper surfaces in contact with uncured concrete, mortar, dissimilar metals, or in other corrosive locations a coat of bituminous paint prior to installation.

3.2.2 Fabrication: Prefabricate shapes as required. Copper sheet and strip shall be bent only to rounded angles with no sharp creases.



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3.2.3 Small Holes and Spot Repairs shall be accomplished by soldering.

3.2.4 Large Damaged Areas shall be cut out and replaced with copper sheet or strip of proper weight. Apply a coating of bituminous paint to the affected area after the new sheeting or strip copper has been soldered in place.

3.2.5 Joints: Use optimal size sheet or strip to compensate for expansion. Pre-tin all soldered joints and clean immediately after soldering.



Section 07130 Bentonite Clay Waterproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bentonite clay waterproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Preformed Bentonite Clay Panels and Tubes:

2.1.1 Panels shall be made of dry bentonite granules packed into the corrugated flutes of biodegradable kraft boards. Panels shall be four feet square by 3/16 inch thick and weigh 18 pounds.

2.1.2 Tubes shall be a water soluble polyvinyl alcohol container filled with dry granular bentonite and hermetically sealed. Tubes shall be two-inch diameter by two-foot lengths and weigh approximately three pounds.

2.2 Bentonite Gel: Clay composition of hydrated aluminum silicate, which swells upon absorption of water into a thick gel.

2.3 Joint Seal: A hydrated bentonite gel for trowel application to concrete for sealing construction joints, form tie voids, and wall penetrations.

2.4 Joint-Pak Containers: A biodegradable kraft container filled with dry bentonite granules for preformed concrete joints in below grade foundation walls. Standard joint-paks shall be 1-1/4 x 1-1/4 inches, weighing approximately 1.1 pounds. Provide triangular-shaped cross section 2-3/8 x 2-3/8 x 2-3/8 inches x 2 feet long, weighing approximately 3 pounds for inside corner joints.

2.5 Chemically Modified Bentonite For Spray Application: High pressure spray combining bentonite clay with a modified asphalt binder that adheres the bentonite to vertical surfaces. Clay content shall be 1-1/2 pounds per square foot.

2.6 Moisture Barrier: 4 mil polyethylene sheeting complying with ASTM D 2103.

2.7 Protection Board: Multi-ply, semi-rigid board composed of a mineral fortified asphaltic core between a layer of asphalt saturated liner and a weathercoated glass mat liner with polyethylene film facing. Protection board shall be 4 feet by 8 feet by 1/8 inch.

2.8 Masonry Nails: 2-inch minimum by No. 9 fluted masonry nails with 1-inch minimum diameter disks complying with Fed. Spec. FF-N-105 for fastening panels to concrete and masonry walls.

3.0 EXECUTION:

3.1 Maintenance and Repair Methods:

3.1.1 Preformed Bentonite Panels:

3.1.1.1 Prior to Installation of Panels, parge all joints and cracks with joint seal to 1/8-inch minimum depth and 3-inch minimum width. Apply panels with masonry nails, joint seal, or approved mastic. Fold and



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attach panels around corners with corrugations horizontal. Lap all adjoining panel edges 1 1/2 inches and stagger vertical joints of succeeding courses.

3.1.1.2 Install Polyethylene Sheeting immediately after panels are installed to provide temporary protection to bentonite panels against moisture. Overlap sheeting four inches. Apply sheeting with adhesive.

3.1.1.3 Install Protection Board with the asphalt-saturated felt face against the waterproofing for protection from damage by maintenance and repair activities including backfilling.

3.1.1.4 Bentonite Tubes: Place bentonite tubes along the base of the first panel course on sidewall applications to provide protection at the footing-foundation joint.

3.1.2 Chemically Modified Bentonite Spray:

3.1.2.1 Remove Damaged Material if damage is extensive, and completely clean area of application.

3.1.2.2 If Small Spot Repair is all that is required, cover damaged area with bentonite panel or pour loose dry granular bentonite adjacent to the damage. 3.1.2.3 For Large Scale Repair Work, apply a spray coating of minimum 3/8-inch bentonite to the damaged surface.

3.1.2.4 At Foundation-Footing Joint Spray, application shall be two inches thick in a cove or cant configuration.

3.1.2.5 Spray Joints with a double thickness, resulting in a membrane 3/4 inch to one inch thick. For small areas, joint seal may be trowel-applied.

3.1.3 Miscellaneous Joint Seals:

3.1.3.1 Bentonite Gel shall be trowel-applied to concrete for sealing construction joints, form tie voids, and wall penetrations.

3.1.3.2 Bulk Granular Bentonite may be poured at the base joints of walls and foundations.

3.1.3.3 Press Joint-Pak Containers filled with dry granular bentonite into preformed joint cavities next to PVC waterstop in joints between two concrete pours.



Section 07160 Bituminous Dampproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bituminous dampproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Dampproofing:

2.1.1 Primer: ASTM D 41.

2.1.2 Cement, Bituminous Plastic: ASTM D 449. A heavy-bodied asphalt emulsion of brush or power spray consistency.

2.1.3 Asphalt: ASTM D 449. Hot asphalt or asphalt emulsions for mop application.

2.2 Tar Dampproofing:

2.2.1 Primer: Creosote complying with ASTM D 43.

2.2.2 Bitumen: Coal-tar pitch complying with ASTM D 450.

3.0 EXECUTION:

3.1 Preparation: Remove all materials completely, exposing the base surfaces to which the dampproofing materials are to be applied.

3.2 Installation:

3.2.1 Application of Dilute Asphalt Emulsion Primer: Brush or spray in a continuous unbroken film, free from pinholes or other surface breaks. 3.2.2 Application of Creosote Primer: Apply with a brush or roller to entire surface.

3.2.3 Interior and Exterior Cold Application: Brush or spray apply without thinning in a continuous unbroken film, free from pinholes or other surface breaks. Apply to entire primed area.

3.2.4 Exterior Hot Application:

3.2.4.1 Coal-Tar Pitch: Apply over exposed surface area with mop or roller in a continuous, unbroken film, free from pinholes.

3.2.4.2 Asphalt: Mop two coats of hot asphalt over the entire primed area. Use not less than 25 pounds per 100 square feet.



Section 07170 Silicone Dampproofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of silicone dampproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of material shall be as required to support the work.

2.0 PRODUCTS: Silicone water repellent (5 percent solution) shall be a clear, ready to use liquid consisting of polymerized silicone resins and penetrating hydrocarbon solvents specifically formulated to repel water. Silicone solution shall comply with Fed. Spec. SS-W-110.

3.0 EXECUTION:

3.1 Precautions: Immediately remove any solution that comes in contact with glass surfaces. Protect glass surfaces with polyethylene.

3.2 Installation: Apply silicone solution by brush or a low pressure spray unit. If pumped from a barrel, use an agitator. Apply in one or two coats so that the surface is flooded to the point of maximum absorption. Start at top and work down, providing a continuous rundown of 6 to 12 inches during application. Start at top with second coat as soon as drop has been made.



SECTION 07175 WATER-REPELLENT COATING DAMPPROOFING

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of water-repellent coating dampproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **General:** The materials shall be colorfast, non-yellowing, and impervious to the following solutions:

- Water.
- One percent soap solution.
- Salt solutions.
- Most dilute acids.
- Most alkalies.
- Urine.
- Color fast and non-yellowing.

2.2 **Acrylic Sealers:** Clear, water-white, non-staining sealing compound shall consist of a blend of penetrating and film-forming materials in a petroleum distillate and a methylacrylate resin and shall have a flash point (tag open cup) of 82 F minimum. The product must breathe and have the ability to be later recoated without any special treatment.

2.3 **Polymeric Resins:** Clear, colorless, inorganic polymer water repellents for impregnating and hardening the surfaces. The product must breathe and have the ability to be later recoated without any special treatment.

2.4 **Polyester Resins:** A mixture of modified polyester resins.

2.5 **Butyrate Resins:** Clear liquid, one component mixture of selected butyrate resins in a mineral spirit base.

3.0 EXECUTION:

3.1 **Preparation:** Prior to application of dampproofing, fill voids, cracks, and holes with cement mortar.

3.2 **Installation:** Coating may be applied by conventional spray equipment, airless spray equipment, brush, or roller.



SECTION 07180 CEMENTITIOUS DAMPPROOFING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cementitious dampproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Portland Cement: ASTM C 150, Type I cement shall be used when the special properties of other types are not required.

2.2 Sand: Washed silica sand graded within the following limits:

Sieve	Percent Passing
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

2.3 Water: Clean, fresh, and free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances.

2.4 Bonding Agent:

2.4.1 A Re-Emulsifiable One-Component Liquid Resinous Emulsion shall be used where area is not subject to constant dampness.

2.4.2 A Two-Component Epoxy Resin Compound shall be used in areas under damp conditions.

2.5 Waterproofing Admixtures: A calcinated solution of colloidal resins that increases impermeability, workability, and compressive strength of mortar.

3.0 EXECUTION:

3.1 Preparation: Remove all materials completely, exposing the base surfaces to which the dampproofing materials are to be applied.

3.2 Installation:

3.2.1 Bonding Agent: Apply as required.

3.2.2 Bearing Surface: Parge or apply a coating of the cementitious mixture to the areas to be dampproofed, using a brush or trowel. Minimum thickness shall be 1/4 inch.



Section 07192 Bituminous Vapor Barrier For Roofs

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bituminous vapor barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Primer: ASTM D 41.

2.2 Bitumen:

2.2.1 Asphalt: ASTM D 312, Type III, steep asphalt.

2.2.2 Coal-Tar Pitch: ASTM D 450, Type A, for slopes up to and including 1/2 inch per foot.

2.3 Bituminous Cement: Fed. Spec. SS-C-153.

2.3.1 Type I: For use with asphalt saturated felts.

2.3.2 Type II: For use with coal-tar saturated felts.

2.4 Vapor Barrier Membrane:

2.4.1 Asphalt Saturated Organic Felt: ASTM D 226, No. 15, asphalt saturated organic fiber felt weighing approximately 13 pounds per square.

2.4.2 Asphalt Saturated Inorganic Felt: ASTM D 250, No. 15, asphalt saturated asbestos fiber felt weighing approximately 13 pounds per square.

2.4.3 Coated Base Sheet: ASTM D 2626, asphalt saturated organic fiber roofing felt, both faces coated with asphalt including mineral stabilizers and mineral surfacing, weighing not less than 37 pounds per square.

2.4.4 Coal-Tar Saturated Felt: ASTM D 227, No. 15 coal-tar pitch saturated organic felt weighing minimum of 13 pounds per square.

2.4.5 Sheathing Paper: Rosin-sized sheathing paper weighing not less than 5 pounds per square or saturated felt weighing approximately 7-1/2 pounds per square.

2.5 UL Listing: Bituminous vapor barrier materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Bituminous vapor barrier materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.6 FM Listing: Bituminous vapor barrier materials of roofing systems that have been evaluated by Factory Mutual System for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Bituminous vapor barrier materials bearing FM's examination and follow-up inspection service shall be provided.



3.0 EXECUTION:

3.1 Preparation:

3.1.1 Concrete Decks: Prior to installation of vapor barrier, apply asphalt primer at the rate of 1 gallon per square over area to receive vapor barrier.

3.1.2 Precast Concrete Decks: Prior to installation of vapor barrier, cover joints between precast units with a 4-inch to 6-inch widestrip of roofing felt embedded in, and coated with, bituminous cement. Prime deck surface to receive vapor barrier with asphalt primer applied at rate of 1 gallon per square.

3.1.3 Wood Deck: Prior to installation of vapor barrier, apply one layer of sheathing paper over areas to be surfaced with vapor barrier.

3.2 Installation:

3.2.1 Laying Felts: Lay vapor barrier free of wrinkles or bubbles, at right angles to the slope of the deck.

3.2.2 Mopping: Solid mop heated bitumen under and between felts.

3.2.3 Embedment in Bitumen: Broom in felts with 18-inch or 20-inch wide soft fiber type broom.

3.2.4 Nailing Felts: Drive nails and fasteners for securing roofing flush through flat metal disks.

3.2.5 Embedding Vapor Barrier at Roof Edge: Embed vapor barrier felts in 9-inch wide solid coat of bituminous plastic cement.

3.3 Installation to Non-Nailable Deck:

3.3.1 Asphalt Saturated Felt System: Vapor barrier system shall consist of two-ply asphalt saturated felts embedded in solid moppings of asphalt applied at rate of 15 to 20 pounds per square per ply.

3.3.2 Coal-Tar Saturated Felt System: Vapor barrier system shall consist of two-ply coal-tar saturated felts embedded in solid moppings of coal-tar pitch applied at rate of 20 to 30 pounds per square per ply.

3.3.3 Coated Base Sheet System: Vapor barrier system shall consist of two-ply coated base sheet embedded in solid moppings of asphalt applied at rate of 20 pounds per square per ply.

3.4 Installation to Nailable Deck:

3.4.1 Asphalt Saturated Felt System: Vapor barrier system shall consist of two-ply asphalt saturated felt, first ply laid dry and second ply embedded in solid mopping of asphalt applied at rate of 15 to 20 pounds per square.

3.4.2 Coal-Tar Saturated Felt System: Vapor barrier system shall consist of two-ply coal-tar saturated felts, first ply laid dry and second ply embedded in solid mopping of coal-tar pitch applied at rate of 20 to 30 pounds per square.

3.4.3 Coat Base Sheet System: Vapor barrier system shall consist of two-ply coated base sheet. Apply first ply dry. Embed second ply in solid coating of asphalt applied at the rate of 15 to 20 pounds per square.

3.4.4 Attachment to Existing Vapor Barrier Membrane: Install a 25-inch wide strip of vapor barrier felt; lap existing membrane 6 inches.

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SECTION 07193 LAMINATED SHEET VAPOR BARRIER FOR ROOFS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of laminated sheet vapor barrier for roofs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Vapor Barrier:

2.1.1 Reinforced Paper Laminate: Two layers of high strength kraft papers laminated together with asphalt, reinforced with glass fiber, with vapor transmission rating of 0.2 perm or less when tested in accordance with ASTM E 96.

2.1.2 Polyethylene Sheet Laminate: Two layers of high strength kraft papers, laminated, with polyethylene sheet between, with vapor transmission rating of 0.2 perm or less when tested in accordance with ASTM E 96, Procedure A.

2.2 Adhesive: Water-resistant adhesive with a nontoxic vehicle. Adhesive shall be vapor barrier manufacturer's recommended product and shall be compatible with contact surfaces.

2.3 Asphalt: ASTM D 312, Type III, steep asphalt.

2.4 Vapor Barrier Joint Strips: Vapor barrier material cut into strips, approximately 6 inches wide.

2.5 UL Listing: Laminated sheet vapor barrier materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Laminated sheet vapor barrier materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.6 FM Listing: Laminated sheet vapor barrier materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Laminated sheet vapor barrier materials bearing FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Preparation: Surfaces to receive vapor barrier membrane shall be smooth, with no protruding surfaces that would puncture membrane.

3.2 Installation:

3.2.1 Application of Vapor Barrier with Adhesive: Lay vapor barrier sheet directly on deck in ribbons of adhesive approximately 1/2 inch wide and spaced 6 inches on center.

3.2.2 Application of Vapor Barrier with Asphalt: Lay vapor barrier sheet directly on deck in solid coat of asphalt applied at rate of 15 to 25 pounds per square.

3.2.3 Laps: Side laps shall be not less than 2 inches, and end laps shall be not less than 6 inches.

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3.2.4 Nailable Decks: Nail lapped areas, spacing nails maximum of 12 inches on center.

3.2.5 Sealing Joints: Seal joints in vapor barrier system and seal to other surfaces at extremities of coverage with vapor barrier strips.



SECTION 07194 POLYVINYL SHEET VAPOR BARRIER FOR ROOFS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of polyvinyl sheet vapor barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **Vapor Barrier:** Polyvinyl chloride sheet, minimum 4 mils thick, with vapor transmission rating of 0.2 perm or less when tested in compliance with ASTM E 96.

2.2 **Adhesive:** Water-resistant adhesive with a nontoxic vehicle specially prepared for application of polyvinyl sheet membrane to roof decks.

2.3 **Vapor Barrier Tape:** Aluminum foil, minimum 1 mil thick, laminated between two sheets of polyester film with pressure-sensitive adhesive on one face, vapor transmission of 0.015 perm or less.

2.4 **Vapor Barrier Joint Strips:** Vapor barrier material cut into strips, approximately 6 inches wide.

2.5 **UL Listing:** Polyvinyl sheet vapor barrier materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Polyvinyl sheet vapor barrier materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.6 **FM Listing:** Polyvinyl sheet vapor barrier materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Polyvinyl sheet vapor barrier materials bearing FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 **Preparation:** Surfaces to receive vapor barrier membrane shall be smooth, with no protruding surfaces that would puncture membrane.

3.2 Installation:

3.2.1 **Installation of Basic Membrane:** Lay polyvinyl sheet directly on deck in solid covering of approved adhesive.

3.2.2 **Nailable Decks.** Nail lapped areas, spacing nails maximum of 12 inches on center.

3.2.3 **Sealing Joints.** Seal joints in vapor barrier system and seal to other surfaces at extremities of coverage with vapor barrier tape or vapor barrier strips.



SECTION 07196 BITUMINOUS VAPOR BARRIERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of bituminous vapor barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Vapor Barrier: Provide one of the following:

2.1.1 A Proper-Bodied Bituminous Coating of Brush or Spray Consistency for application to interior masonry walls above or below grade, containing a hydrophilic agent which assures proper adhesion. Compound shall comply with ASTM D 449.

2.1.2 A Soft, Adhesive "Self-Healing" Hot Mop Type Asphalt that flows readily under the mop and is not susceptible to wide temperature ranges. Compound shall comply with ASTM D 449, Type B. Used with a cold-applied primer complying with ASTM D 41.

2.2 Tar Vapor Barrier: Primer shall be coal-tar pitch complying with ASTM D 43 Type B for use below ground level under uniformly moderate temperature conditions, both during the process of installation and during service. The coal-tar pitch shall be homogeneous and shall comply with the requirements prescribed in Table I, ASTM D 450.

2.3 Reinforcing shall be tar-saturated felt complying with ASTM D 227 or glass mat complying with ASTM D 1668.

3.0 EXECUTION:

3.1 Preparation: Remove all materials completely, exposing the base surfaces to which the dampproofing materials are to be applied.

3.2 Installation: Below grade applications shall receive two coats. Allow 24 hours between coats.

3.3 Reinforcing Method: Reinforce all inside and outside corners, joints, cracks, or places where stresses are likely to occur with no less than 2 plies of felt or glass mat.



SECTION 07197 LAMINATED SHEET VAPOR BARRIERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of laminated sheet vapor barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Bonded Multi-Ply Flexible Core Board:

2.1.1 Board with Core Plies of Polyvinyl Chloride shall consist of a core sheet of polyvinyl chloride suspended between two layers of pure-blown, high melt point asphalt and sandwiched between two asphalt saturated felt liners. The felt liners shall be covered with an asphalt weathercoat.

2.1.2 Semi-Rigid Asphalt Board shall consist of an asphalt core sandwiched between two saturated felt liners to which an independent weather-coating is bonded.

2.1.3 Self-Adhesive Multi-Ply Flexible Board shall consist of a 1/16-inch thick waterproof highly flexible elastomeric material with a release paper on one side. The membrane shall be bonded to a reinforcing carrier sheet, vinyl center sheet, additional bitumen, and a protective weathercoating.

2.2 Bonding Agent:

2.2.1 Hot Asphalt for bonding to vertical surfaces or sealing joints shall be a mopping asphalt with a softening point in the range of 180 to 200 F and complying with ASTM D 312, Type III.

2.3 Butt Joint Tape: Elastomeric vapor barrier shall be in 6-inch wide rolls. Tape shall be self-adhesive and require no additional adhesive.

3.0 EXECUTION: Remove all materials completely, exposing the base surfaces to which the dampproofing materials are to be applied.



SECTION 07198 PLASTIC SHEET VAPOR BARRIERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of plastic sheet vapor barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Polyethylene Sheet shall comply with ASTM D 2103.

2.2 Butyl Sheet shall be an impermeable butyl rubber membrane 1/16 inch thick having a tensile strength per ASTM D 412 of 1,200 psi minimum and an elongation per ASTM D 412 of 300 percent minimum. Butyl sheet shall be resistant to ozone and remain flexible to 40 degrees F below zero.

2.3 Neoprene Sheet shall be an impermeable, self-extinguishing, ozone-resistant material, 1/16 inch thick. Neoprene shall have a tensile strength per ASTM D 412 of 1,500 psi minimum and an elongation per ASTM D 412 of 250 percent minimum.

2.4 Ethylene Propylene Diene Monomer (EPDM) Sheet shall be an impermeable membrane resistant to ozone and ultra-violet radiation. EPDM shall have a tensile strength per ASTM D 412 of 1,400 psi minimum and a elongation per ASTM D 412 of 300 percent minimum.

2.5 Vinyl Sheet shall be a heavy-duty polyvinyl chloride sheet complying with ASTM D 3083.

2.6 Primers shall be as required.

2.7 Adhesives:

2.7.1 Adhesive for Cold Application shall be a non-setting bitumen cutback asphalt.

2.7.2 Adhesive for Hot Application shall be asphalt complying with ASTM D 312, Type III.

2.8 Butt Joint Tape shall be an elastomeric vapor barrier in 6-inch wide rolls. Tape shall be self-adhesive and require no additional adhesive.

3.0 EXECUTION:

3.1 Preparation: Remove all materials completely, exposing the base surfaces to which the damproofing materials are to be applied.

3.2 Installation:

3.2.1 Primer: Apply primer by brushing or spraying uniformly over surface to receive membrane.

3.2.2 Membrane:

3.2.2.1 At footings, shape the membrane to conform to the surface.

3.2.2.2 Apply adhesive to both the footing and to the membrane.



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3.2.2.3 On vertical surfaces, apply adhesive to both wall and membrane.

3.2.2.4 Seal joints between adjacent sheets centering 6-inch sealing tape over the joint.



SECTION 07210 BATT AND BLANKET BUILDING INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of batt and blanket building insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mineral Fiber Insulation shall comply with ASTM C 665, Type II.

2.2 Reflective Insulation shall comply with ASTM C 665, Type III.

2.3 Membrane Covering: All vapor permeable back surface coverings, membrane coverings, or facings affixed to insulation in compliance with ASTM E 84 shall have a flame spread rating not greater than 25 and a smoke developed rating not greater than 50 when tested.

2.4 Separately Applied Vapor Barriers:

2.4.1 General: Separate vapor barrier material shall have a permeability of 1.0 perm or less, in compliance with procedure "A" of ASTM E 96.

2.4.2 Ground Cover for Crawl Spaces: Ground cover for crawl space applications shall have a permeability of 0.5 perm or less, in compliance with ASTM E 154.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Separately Applied Vapor Barriers: All surfaces on which separately applied vapor barrier material is to be applied shall be free of any projections that might puncture the vapor barrier material.

3.1.2 Masonry Wall Applications: Provide wood fastening strips for fastening rigid insulation to masonry walls.

3.2 Installation. Install insulation to a thickness necessary to provide the designated or directed R-value.

3.2.1 Exterior Walls:

3.2.1.1 Insulate each space between framing members completely with batt or blanket type insulation sized to fit the full width of the space.

3.2.1.2 Install Insulation having an affixed facing with the facing toward the interior (warm-in-winter) side of the construction.



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3.2.1.3 Install Reflective Insulation with an air space of not less than 3/4 inch, adjacent to the reflective facing, when insulation thickness permits.

3.2.1.4 Crawl Spaces (Unvented): Contractor shall cut vent openings in exterior walls of crawl spaces, frame as necessary to reinforce the openings, and install wood or aluminum louvers and screening.

3.2.1.5 Crawl Spaces (Vented): Insulate each space between framing members completely with batt or blanket type insulation sized to fit the full width of the space.

3.2.1.6 Ceiling: Insulate each space between framing members completely with batt or blanket type building insulation, sized to fit the full width of the space. Install insulation around, not over, all recessed lighting fixtures in ceiling construction. Install insulation so as to permit air passage from eave vents to air space above insulation.

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SECTION 07211 LOOSE OR GRANULAR FILL INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of loose or granular fill insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mineral Fiber Insulation shall comply with ASTM C764.

2.2 Perlite Insulation shall comply with ASTM C 549, treated for water repellancy.

2.3 Vermiculite Insulation shall comply with ASTM C 516, Type II, treated for water repellancy.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Cavity Applications: Close off all openings in cavities to receive loose or granular fill insulation, except at the top so as to permanently prevent insulation from escaping.

3.1.2 Ceiling Applications: Wherever loose or granular fill insulation is to be applied over dropped soffit or other large cavities exposed to the attic, install fiberboard or other suitable material between framing members over soffit cavity to support insulation.

3.2 Installation:

3.2.1 Install insulation to a thickness necessary to provide the designated R-value.

3.2.2 Install insulation to completely fill all required ceiling and horizontal areas.



SECTION 07212 RIGID INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of rigid insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mineral Fiberboard Insulation shall comply with Fed. Spec. HH-I-558, Form A, class as specified.

2.2 Polystyrene Plastic Board Insulation shall comply with ASTM C 578, Type II.

2.3 Urethane Plastic Board Insulation shall comply with ASTM C 591.

2.4 Cellular Glass Block Insulation shall comply with ASTM C 552, Type I.

2.5 Organic Fiberboard Insulation shall comply with ASTM C 208. Organic Fiberboard Insulation shall be chemically treated to resist decay, fungus growth, and insect attack.

2.6 Corkboard Insulation shall comply with ASTM C 640.

2.7 Glass Fiberboard Insulation shall comply with Mil. Spec. MIL-I-742.

3.0 EXECUTION:

3.1 Preparation: All surfaces to which rigid insulation will be mastic-mounted shall be free from all materials that will prevent proper adhesion.

3.2 Installation: Install insulation to a thickness necessary to provide the designated R-value.

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Section 07213 Perimeter Insulation

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of perimeter insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Polystyrene Insulation Board shall comply with ASTM C 578, Type I.

2.2 Urethane Insulation Board shall comply with ASTM C 591. Urethane insulation board shall have a minimum density of 1.7 pounds per cubic foot.

2.3 Insulation Thickness shall be 1 inch, except where otherwise specified or directed.

2.4 Surface Burning Characteristics: Insulation shall have a maximum flame spread index of 25, in compliance with ASTM E 84.

2.5 Plastic Cement shall comply with Fed. Spec. SS-C-153.

2.6 Asphalt-Saturated Felts shall comply with ASTM D 226, Type I.

2.7 Adhesive or Mastic for bonding insulation shall comply with applicable fire-resistance requirements for the insulation being installed.

3.0 EXECUTION:

3.1 Preparation: The Contractor shall remove all materials and construction necessary to gain access to the work.

3.2 Installation: Apply insulation to the full thickness required over the entire area to be insulated.

3.3 Reconstruction: Restore existing slabs, construction, and finishes that have been removed for the installation of insulation or damaged to their original condition.

3.4 Restoration of Landscaping: Restore landscaping that is disturbed to its original condition.



SECTION 07215 SPRAYED-ON INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sprayed-on insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Urethane Foamed-in-Place Insulation shall be a spray-applied two-component material that when mixed together in proper proportions produces a rigid closed cell foam material.

2.1.1 Physical Properties of cured foam shall be as follows:

2.1.1.1 Nominal Density shall be 1.5 to 2.5 lbs/cu ft (ASTM D 1622).

2.1.1.2 Closed Cell Content shall be 90 percent minimum.

2.1.1.3 Compressive Strength, parallel to rise, shall be 40 psi.

2.1.1.4 Thermal Conductivity (k factor) Btuh/psf/F/in. shall be 0.17 when aged 90 days at 14 F dry heat (ASTM C 518).

2.1.1.5 Vapor Transmission shall be 3.0 perm-inch.

2.1.1.6 Water Absorption shall be 3.0 percent.

3.0 EXECUTION:

3.1 Substrates shall be cleaned prior to application of sprayed-on insulation.

3.2 Openings in Roofs to receive foamed-in-place insulation shall be closed sufficiently to prevent escape of insulation.

3.3 Protect Installed Insulation from harmful weather exposures and possible physical abuses including fire hazards.



SECTION 07223 ROOF INSULATION AND UNDERLAYMENT CELLULAR GLASS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of cellular glass. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cellular Glass Block Insulation: ASTM C 552, Type I, rigid, closed cell, noncombustible, foamed glass blocks. Sizes shall be manufacturer's standard sizes and required thickness, edges square.

2.2 Cellular Glass Board Insulation: ASTM C 552, Type IV, rigid, closed cell, noncombustible, foamed glass boards, with laminated kraft paper faces.

2.2.1 **Board Sizes:** Manufacturer's standard sizes and required thickness with 1/4-inch bevel on long edges at bottom of board.

2.2.2 **Tapered Unit Sizes:** Manufacturer's standard sizes and taper.

2.2.3 **Flame Spread Rating:** Insulation shall have maximum flame spread rating of 25 when tested in compliance with ASTM E 84.

2.3 UL Listing: Cellular glass roof insulation and underlayment materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Cellular glass roof insulation and underlayment materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.4 FM Listing: Cellular glass roof insulation and underlayment materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Cellular glass roof insulation and underlayment materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Installation: Place beveled edge of board units to the deck surface in same direction continuously throughout each course.

3.2 Insulation shall be installed to a thickness necessary to provide the designated R-value.



Section 07224 Roof Insulation And Underlayment - Mineral Fiber

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of mineral fiber. Products shall match existing material and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Insulation board shall be Fed. Spec. HH-I-526, rigid inorganic fiberboard formed with fillers and water-resistant binders.

2.1 Glass Fiberboard: Mineral fiber insulation boards formed of glass fibers shall be bonded together with asphalt and surfaced on top surface with glass-fiber reinforced asphalt mat.

2.2 Mineral Fiberboard: Mineral fiber insulation boards formed of rock or slag processed into fiber shall be bonded together with asphalt and surfaced on top surface with asphalt saturated felt.

2.3 Flame Spread Rating: Insulation shall have maximum flame spread rating of 25 when tested in compliance with ASTM E 84.

2.4 UL Listing: Mineral fiber roof insulation and underlayment materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Mineral fiber roof insulation and underlayment materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.5 FM Listing: Mineral fiber roof insulation and underlayment materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Mineral fiber roof insulation and underlayment materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION: Install insulation to a thickness necessary to provide the designated R-value.

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Section 07225 Roof Insulation And Underlayment - Composite Board

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of composite board. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Composite Board Insulation shall consist of two insulation boards chemically bonded together. Top board shall be expanded rigid polyurethane foam board complying with ASTM C 984; top surface shall be surfaced with one layer of asphalt saturated felt or glass fiber mat. Second layer shall be one of the following materials:

2.1.1 Inorganic Perlite Mineral Aggregate Board: ASTM C 728.

2.1.2 Inorganic Glass Fiberboard: Fed. Spec. HH-I-526.

2.1.3 Mineral Fiberboard: ASTM C 726.

2.2 Flame Spread Rating: Insulation shall have maximum flame spread rating of 25 when tested in compliance with ASTM E 84.

2.3 Edge Sealant: Mastic sealant of type recommended by insulation manufacturer.

2.4 UL Listing: Composite board roof insulation and underlayment materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Composite board roof insulation and underlayment materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.5 FM Listing: Composite board roof insulation and underlayment materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Composite board roof insulation and underlayment materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Installation: Install composite insulation boards with urethane surface up.

3.2 Insulation shall be installed to a thickness necessary to provide the designated R-value.



SECTION 07226 ROOF INSULATION AND UNDERLAYMENT EXPANDED PERLITE BOARD

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of expanded perlite board. Products shall match existing material and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:**

2.1 **General:** Board shall be ASTM C 728, rigid, noncombustible board formed of expanded perlite aggregate and fibers combined with water-resistant mineral binders. Boards shall have integral top surface coating of insulation manufacturer's standard type.

2.2 **Flame Spread Rating:** Insulation shall have maximum flame spread rating of 25 when tested in compliance with ASTM E 84.

2.3 **UL Listing:** Expanded perlite board roof insulation and underlayment materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Expanded perlite board roof insulation and underlayment materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.4 **FM Listing:** Expanded perlite board roof insulation and underlayment materials of roofing systems which have been evaluated by Factory Mutual System for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Expanded perlite board roof insulation and underlayment materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 **EXECUTION:**

3.1 **Insulation Board** shall be covered with wood board walkways where transport of materials will result in damage to the insulation. Remove walkways ahead of roofing operations.

3.2 **Insulation** shall be installed to a thickness necessary to provide the designated R-value.

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SECTION 07227 ROOF INSULATION AND UNDERLAYMENT FIBERBOARD

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of fiberboard. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **General:** ASTM C 208, Rigid, organic fiberboard derived from wood, cane, or other vegetable fibers, formed with fillers and water-resistant binders.

2.2 **Asphalt Impregnation:** Insulation board shall be impregnated with asphalt, applied at rate not to exceed 4 percent by weight.

2.3 **Bituminous Coating:** Insulation board shall be surfaced with manufacturer's standard bituminous coating.

2.4 **Flame Spread Rating:** Insulation shall have maximum flame spread rating of 25 when tested in compliance with ASTM E 84.

2.5 **UL Listing:** Fiberboard roof insulation and underlayment materials of roofing systems that have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Fiberboard board roof insulation and underlayment materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.6 **FM Listing:** Fiberboard roof insulation and underlayment materials of roofing systems that have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Fiberboard board roof insulation and underlayment materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 **EXECUTION:** Install insulation to a thickness necessary to provide the designated R-value.



SECTION 07256 SPRAYED-ON FIREPROOFING

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of sprayed-on fireproofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:** Products shall be provided that have been tested in accordance with ASTM E 119, UL 263, ANSI A2.1, or NFPA 251 for fire-resistance and rated by UL or other industry-recognized agency for the required resistances.

2.1 **Spray-Applied Fireproofing:** Materials shall conform to the requirements of ASTM E 1042, Type I, Category A. Spray-applied fireproofing materials shall not contain asbestos.

2.1.1 Water shall be clean, fresh, potable, and free from amounts of oils, acids, alkalies, and organic matter that would be injurious to the fireproofing.

2.2 **Performance Requirements:** Spray-applied fireproofing material shall conform to the following requirements:

2.2.1 **Deflection:** Spray-applied fireproofing shall not crack, spall, or delaminate when tested in accordance with ASTM E 759.

2.2.2 **Cohesion/Adhesion:** Spray-applied fireproofing material shall have a minimum cohesive/adhesive force of 80 psf when tested in accordance with ASTM E 736.

2.2.3 **Bond-Impact:** Spray-applied fireproofing material shall not crack, spall, or delaminate when tested in accordance with ASTM E 760.

2.2.4 **Compressive Strength:** The minimum compressive strength shall be 500 psf based upon the average load of 10 percent deformation or at ultimate load, whichever is less as tested in accordance with ASTM E 761.

2.2.5 **Air Erosion:** Gain in weight of the collecting filter shall not exceed 0.025 gram per square foot when tested in accordance with ASTM E 859.

2.2.6 **Corrosion Resistance:** No evidence of corrosion, after testing in accordance with ASTM E 937, for metal surfaces to be covered.

2.3 **Fire Hazard Classification:**

2.3.1 **Surface Burning Characteristics:** Spray-applied fire-proofing material shall have a flame spread of 25 or less, a smoke developed rating of 50 or less, and a fuel contributed rating of 50 or less when tested in accordance with ASTM E 84.

2.4 **Fire Resistance Rating** for building elements shall be as indicated and shall conform to the fire rated assemblies as listed in the UL Fire Resistance Directory.

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2.5 Substrate Primers: Provide type that is compatible with condition of each substrate to be fireproofed, including shop primers applied by metal fabricators/erectors, and is compatible with bonding adhesives and fireproofing materials.

2.6 Metal Lath: Except as otherwise indicated, provide 3.4-pound (per sq yd) expanded galvanized diamond steel lath, with reinforcing members and clips and other anchorage devices as appropriate for substrate and complying with selection requirements of applicable fire endurance tests. Provide corner beads and other lathing accessories of standard design and weight, where required.

3.0 EXECUTION:

3.1 Surface Preparation: Surfaces to be fireproofed shall be thoroughly cleaned of all dirt, grease, oil, paint, rust, and mill scale or other contaminants that will interfere with the proper bonding of the sprayed fireproofing to the substrate. Ceiling areas to be fireproofed shall be cleared of all obstructions interfering with the uniform application of the spray-applied fireproofing. Hardware such as support sleeves, inserts, clips, hanger attachment devices and the like shall be installed prior to the application of the fireproofing.

3.2 Surface Acceptability: Surfaces to receive sprayed fireproofing shall be inspected prior to application of fireproofing material and certified to be clean and in acceptable condition for application of spray-applied fireproofing.

3.3 Application: Prior to spray application, surfaces not to receive spray-applied fireproofing, including instruments, gauges, and equipment shall be covered to prevent contamination by splatter, rebound, and overspray. Exterior openings in areas to receive spray-applied fireproofing shall be covered prior to and during application of fireproofing with tarpaulins or other approved material. Fireproofing material shall be applied to a thickness as required to obtain the specified fire resistance rating and to provide a fire-protective coating of uniform density and texture. Fireproofing shall be applied in accordance with the procedure recommended by the manufacturer. Fireproofing applied to underside of steel roof deck or steel floor assemblies shall be installed only after respective roof or floor construction is complete. No roof or floor traffic shall be allowed during application and during curing period. Sealer shall be applied to clean, dry fireproofed surfaces in accordance with manufacturer's recommendations.

3.4 Cleanup: Surfaces not indicated to receive fireproofing shall be thoroughly cleaned of all sprayed material.



SECTION 07310 STEEL SHINGLES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel shingles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

1.1 Delivery, storage and handling, of steel shingle cartons shall be kept in a dry place and stacked as shipped. Shingles shall be delivered to site in manufacturer's sealed and undamaged containers, clearly marked with manufacturer's brand, name, and UL classification marking.

2.0 Products:

2.1 Shingles shall meet the following requirements; Performance Properties: UL-997 Wind Resistance, UL-1897 Uplift Resistance, UL-790 Fire Resistance, UL-2218 Hail/Impact Resistance, FM-4470 Foot Traffic/Hail Resistance, PA 201-94 Impact Resistance, PA 100-95 Wind Driven Rain Resistance, ICBO AC07-R1-0797 Penetration Resistance, ASTM-B117 Salt Fog Corrosion Resistance, ASTM-G26 Accelerated UV Resistance, ASTM-A90-95 Galvanization Performance, ASTM G23 Accelerated UV and Humidity Resistance. Coatings Performance Properties: ASTM D 3361 Accelerated Weathering, ASTM G 53 (QUV), ASTM B 117 Salt Spray, ASTM D 2247 Humidity, ASTM D 4145 Formability, ASTM D 522 (Elongation over 1/8" Cylindrical Mandrel), ASTM D 3363 Pencil Hardness, ASTM D 523 Specular Gloss, ASTM D 2794 Reverse Impact, ASTM E 84 Flame Test.

2.2 Nails, screws and rivets used shall be galvanized or stainless steel. A minimum length of nails is 1-1/2", but in a roof over, the nail must penetrate the deck by at least 3/4 inch. Nails are to be 11 or 12 gauge corrosion-resistant roofing nails with 3/8" heads. All field formed flashing shall be painted galvanized steel. All flashing must have a minimum 3" overlap and sealant must be applied at overlaps.

2.3 Sheathing on 24" centers, sheathing shall not be less than 5/8" and on 16" centers, sheathing shall not be less than 1/2"

2.4 Steel shingles shall be manufactured of painted, G90 galvanized steel including five (5) or six (6) formed simulated shingle sections of various widths and depths. Each steel shingle shall lock on all four (4) edges to provide for mechanical connection to adjacent shingle exterior. Paint finish will be one of manufacturer's standard shingle colors and the interior will be painted with a primer and wash-coat.

2.5 Shingles shall be of the following dimensions; overall width 39-3/4", overall length 12-5/8", exposed area 3.28 sq. ft. (39-3/8"x 12") weight per shingle 2.1lbs, weight per square 64lbs. Thickness – shingle and accessory material = nominal 0.0135", including G90 galvanize and paint coatings. Thickness – clip material = nominal 0.015" thickness, G90 galvanized. Paint Coating- shingle and accessories shall be manufactured using coated G90 galvanized steel. 1- Exterior finish; fluoropolymer (PVDF) with anti-corrosion primer, total 1.0 mil dry film thickness. 2- Interior finish; wash-coat with anti-corrosion primer, total 6 mil dry film thickness. Shingle coverage; shingles shall be manufactured and boxed 30 panels per carton, and 98.4 sq. ft. to a carton. Shingle accessories; Ridge/Hip, Starter/Eaves, Gable/Rake, Valley Pan and all other required accessories recommended by manufacturer.

2.6 Underlayment; 15lbs, 30lbs asphalt-saturated organic felt, shall comply with ASTM D 226.

3.0 Execution:

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3.1 Preparation: The minimum required slope is 4:12. Prior to the installation of steel shingles, new and or existing roof deck must be inspected for signs of rotting or warping and corrective actions must be taken as required. Roof over: Loose, curled, broken or lifted existing shingles shall be nailed down or replaced, if required, to provide a solid nailing base. Protruding or loose nails shall be removed or nailed down. New roof: The construction of any bay or section of roof decking shall be completed before roofing work is started. Surfaces shall be smooth, firm, dry and free from loose boards, large cracks and projecting ends that might damage the roofing. Vents and other projections through roofs shall be properly flashed and secured in position, and projecting nails shall be driven firmly home.

3.2 Installation:

3.2.1. All steel shingles and accessories are to be installed in strict accordance to manufacturer's recommendations.

3.2.2. Sheet metal standards; all detailed work demands meticulous consideration, applying proper sheet metal cutting and folding fundamentals. It is important to consider water flow and overlying materials in proper sequence.

3.2.3. UL Class "A" Fire Rated Roof; for roof applications requiring Underwriters Laboratories, Inc. Class "A" fire-rated roof, the entire roof area must be covered with 1/4" density board. The density board is to be applied directly over the sheathing or existing roof and underneath the underlayment. The density board shall have the joints staggered a minimum of 6", both horizontally and vertically from the sheathing, and shall be fastened with a minimum of six (6) roofing nails per 4' x 8' sheet or more as required to hold the density board in place. Roof shingle fasteners must be long enough to sufficiently penetrate the roof sheathing.

3.2.4. UL Class "A" with existing asphalt shingles; a 5/8" (min.) thick plywood decking shall be used with existing Class "A" asphalt glass fiber mat shingles in roof applications requiring Underwriters Laboratories Inc. Class "A" asphalt shingles.

3.2.5. UL Class "C" Fire-Rated Roof; a 5/8" (min.) sheathing and one layer of Type 30 felt underlayment shall be used in roof applications requiring Underwriters Laboratories, Inc. Class "C" fire-rated roof.

3.2.6. Underlayment; the entire roof shall be covered (prior to shingle application) with 30lbs. felt paper or equivalent. (double layer required at eaves and valleys.) All overlaps are to be 8" horizontal and vertical.

3.2.7. Ice and Water Shield; where there is a possibility of ice forming along eaves or in valleys causing a backup of water, an ice shield that consists of self-adhering polymer modified bitumen sheet, shall be used in lieu of the bottom layer of underlayment. It shall extend from the eaves edge to a point at least 24" inside the exterior wall line of the building and along the entire length of the valley, 24" back from centerline.



Section 07311 Asphalt Shingles

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of asphalt shingles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Nails shall be nonferrous metal or zinc-coated steel long enough to penetrate at least 3/4 inch into the deck sheathing.

2.2 Roll Roofing:

2.2.1 Smooth Surfaced: ASTM D 224, Type II.

2.2.2 Mineral Surfaced: ASTM D 225 and provided with 2-inch selvage.

2.3 Shingles shall meet requirements of Underwriters' Laboratories, Inc., for Class C wind-resistant shingles by equaling or exceeding the requirements of UL 55A and UL 997. Shingles shall be square-butt strips of uniform thickness or of thick-butt style, 12 by 36 inches, and either 2-tab or 3-tab design.

2.4 UL Listing: Asphalt shingle materials of roofing systems which have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Asphalt shingle materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.5 FM Listing: Asphalt shingle materials of roofing systems which have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Asphalt shingle materials bearing FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Preparation: Loose, curled, broken, or lifted asphalt shingles shall be nailed down or replaced, if required, to provide a solid nailing base. Protruding or loose nails shall be removed or nailed down.

3.2 Installation:

3.2.1 Application of Roofing When Existing Roofing is Removed:

3.2.1.1 Underlayment: Apply one layer of 15-pound asphalt-saturated felt to roof-deck sheathing.

3.2.1.2 Underlayment: Apply two layers of 15-pound asphalt-saturated felt applied to roof-deck sheathing. A solid coating of bituminous cement shall be applied between the layers of underlayment.

3.2.1.3 Shingles: Apply shingles over underlayment allowing 5-inch butt exposure, and in no case shall there be less than 2-inch head lap. **3.2.1.4 Hips and Ridges** shall be formed with 9- by 12-inch individual shingles.

3.2.1.5 Valleys:

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3.2.1.5.1 Closed Woven-Shingle Valleys shall have a single-layer lining of smooth-surfaced or mineral-surfaced roll roofing, 36 inches wide.

3.2.1.5.2 Roll Roofing Valley shall be two thicknesses of mineral-surfaced roll roofing.

3.2.2 Application of Roofing Over Existing Asphalt Shingles: Shingles shall be applied over old shingles with butt exposure, except for starter course, equal to old shingles, and in no case shall there be less than 2-inch head lap.

3.2.3 Roof Patching and Replacement: Match existing shingles in design, weight, texture, pattern, and color.



SECTION 07314 SLATE SHINGLES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of slate shingles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Nails shall be large head slater's nails, either hard copper wire nails, cut copper, cut brass, or yellow metal and shall be long enough to penetrate at least 1 inch into the deck sheathing.

2.2 Slate Shingles shall comply with ASTM C 406 and shall be of matching or designated size, thickness, color, and texture.

2.3 Asphalt-Saturated Organic Felt shall comply with ASTM D 226.

3.0 EXECUTION:

3.1 Underlayment: Apply one layer of 30-pound asphalt-saturated felt to roof-deck sheathing.

3.2 Slating:

3.2.1 Starter Course: Apply starter course at eave on cornice line with same thickness slate as main roofing material. Slate shall be approximately 3 inches longer than exposure of first course and shall be installed over a 1/4-inch thick treated wood cant.

3.2.2 First and Succeeding Courses: Apply slate over underlayment with 6-1/2 inch butt exposure with minimum 3-inch head lap. Slate shall project 1 inch at eaves and 1/2 inch at gable ends. Each course shall break joints with preceding course by minimum 3 inches.

3.2.3 Nailing: Fasten each slate with two nails. Do not drive far enough to produce a strain on the slate. Exposed nails shall be permissible only in top courses where unavoidable, and exposed nail heads shall be covered with bituminous cement.



SECTION 07321 CLAY ROOFING TILES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of clay roofing tiles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mortar: Mixture of Portland cement, sand, and pigment.

2.2 Nails: Copper or noncorrosive metal.

2.2.1 Ring Type Nails: Used on plywood sheathing.

2.2.2 Slater's Nails: Minimum of 1-1/2 inches long and shall be used on board sheathing.

2.3 Asphalt-Saturated Organic Felt shall comply with ASTM D 226.

2.4 Roofing Tiles shall be a clay or shale product that is burned to a hard dense structure, glazed or nonglazed on exposed surfaces.

3.0 EXECUTION:

3.1 Underlayment: Apply one layer of 30-pound asphalt-saturated felt to roof-deck sheathing.

3.2 Application of Slab Shingle Tiles: Install a 3/4-inch by 1-inch cant strip along eave. On top of cant install under-eave tiles, projecting 1 inch over the rear edge of gutter and flush with the gable edge. Install first course of roofing tiles flush with butt edge of under-eave tile and extend 2 inches over the gable ends. Lay field tiles in straight courses with 2-inch head lap and secure with roofing nails in all holes provided in tiles. Lay all tiles within one foot of hips, ridges, and abutting vertical surfaces in bituminous cement.

3.3 Application of Interlocking Tiles: Install cant strip or under-eave fittings as required by tile configuration. On top of cant or under-eave fitting, install first course of roofing tiles projecting 1 inch over rear edge of gutter. Lay roof tiles with straight butt lines, interlocked into adjoining tiles with a 3-inch headlap and secure with nails in all holes provided in tiles. Provide gable rake fittings at all gables.

3.4 Application of Spanish and Mission Tiles: Install cant strip over eave closure fittings and nailing strips as required by configuration of tiles. Set eave closures back 2 inches from lower edge of eave. Lay tiles in straight vertical lines up roof and with uniform exposure to weather. Give all tiles minimum lap of 3 inches, and extend eave tiles 1 inch over edge of gutters. Fit all tiles properly and secure with nails in all holes provided. Nails shall be long enough to penetrate at least 1 inch into wood base. Cement and nail cover tiles to gable rakes with bituminous cement, all the way up the gables. When eave closures and top fixtures are not required, cement eaves and joint at ridge with mortar.

3.5 Replacing Individual Spanish or Mission Roofing Tiles: Remove broken tiles by cutting nails with a ripper. Insert new tiles of the same color and size as broken one by troweling Portland cement mortar on new tile surface that will be lapped by tile in course above and on surface that will lap tile in course below. Fasten new tile in place with metal strap or wire.



SECTION 07322 CONCRETE ROOFING TILES

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of concrete roofing tiles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mortar: Mixture of Portland cement, sand, and pigment.

2.2 Nails: Copper or noncorrosive metal.

2.2.1 Ring Type Nails: Used on plywood sheathing.

2.2.2 Slater's Nails: Used on board sheathing.

2.3 Roofing Tiles: Waterproof concrete product reinforced with steel wire. Each tile shall be manufactured with nail holes. Standard rake, closures, hip, and ridge fittings same color as tile, shall be provided.

2.4 Asphalt-Saturated Organic Felt shall comply with ASTM D 226.

3.0 EXECUTION:

3.1 Underlayment: Apply one layer of 30-pound asphalt-saturated felt to roof-deck sheathing.

3.2 Application of Slab Shingle Tiles: Apply 1-inch by 1/2-inch cant strip 1/2 inch from edge of eave. On top of cant, install a starter strip of tiles projecting 1 inch over rear edge of gutters and 1 inch beyond gable ends. Install the first course of tiles flush with edges of starter strip. Lay field tiles in straight courses with a 2-inch head lap and secure with two large-head roofing nails. Lay all tiles within 1 foot of hips, ridges, and abutting vertical surfaces in bituminous cement.

3.3 Application of Interlocking Tiles: Install cant strip or under-eave fittings as required by tile configuration. On top of cant, or under-eave fitting, install first course of roof tile projecting 1 inch over the rear edge of gutter. Lay roof tiles with straight butt lines interlocked into adjoining tiles with a 3-inch headlap and secure with nails in all holes provided in the tiles. Provide gable rake fittings at all gables.



Section 07410 Preformed Roofing And Siding

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of preformed roofing and siding panels. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aluminum Roof Panels: Fabricated from roll-formed panels of aluminum alloy in accordance with ASTM B 209, tempered as required for forming operation, with a minimum thickness of 0.032 inch. Thickness of panels shall be the standard thickness as required for roofing span and design loading.

2.1.1 Color-Coated Finish. One of the following standard factory-applied, baked-on coatings:

2.1.1.1 Acrylic Enamel Coating: Epoxy primer and acrylic enamel top coat, dry film thickness not less than 0.2 mil for primer and 0.8 mil for topcoat.

2.1.1.2 Fluoropolymer Coating: Full strength 70 percent polyvinylidene fluoride finish, dry film thickness not less than 1.0 mil over a minimum 0.2 mil baked-on modified epoxy primer.

2.1.1.3 Siliconized Polyester Coating: Epoxy primer and silicone-modified polyester enamel topcoat, dry film thickness not less than 0.2 mil for primer and 0.8 mil for topcoat.

2.1.2 Factory Prime Coating: Factory-applied baked-on epoxy primer coat, not less than 0.2 mil dry film thickness applied after pretreatment.

2.1.3 Natural Finish: Stucco embossed finish, plain mill-finished or special alloy-clad sheet (Alclad), as required.

2.1.4 Corrugated Panels shall be standard 7/8 inch deep with corrugation crests at 2.67 inches on centers with either interlocking ribs or overlapping side laps at side joints, as required.

2.1.5 V-Beam Panels shall be standard V-shaped ribbed panels, nominally 4-7/8 inches on centers and 1-3/4 inches deep with either interlocking ribs or overlapping side laps at side joints, as required.

2.2 Steel Roof Panels shall be factory-painted steel metal panels which shall be zinc-coated steel conforming to ASTM A 446, Grade A, G90 zinc coating designation. Roof covering shall be 22 galvanized sheet gauge or thicker. Steel roof panels shall be factory prime-coated and color-coated with one of the color coatings specified for aluminum roof panels.

2.2.1 Corrugated Panels shall have similar dimensional and side joint characteristics as specified for aluminum roof panels.

2.2.2 Box Rib Panels shall be standard units, approximately 1-1/2 inches deep with 1-3/8 inch wide flutes and 5 box ribs at 7-13/64 inches on centers for a 36-inch wide coverage.

2.2.3 Four-Inch Ribbed Panels shall be standard units approximately 1 inch deep with 9 box ribs at 4 inches on centers for a panel width of 37-1/2 inches.

2.3 Standing Seam Roofing:



2.3.1 General: Roof-covering panels shall be fabricated of zinc-coated steel conforming to ASTM A 446, G90 coating designation or aluminum-coated steel conforming to ASTM A 463, Type 2. Roof covering shall be 24 galvanized sheet gauge or thicker. Panels shall have configurations designed for mechanically formed lock seams for securing adjacent sheets. Sealant for standing seams shall be factory-applied. Width of sheets shall provide not less than 12 inches of coverage in place. Height of standing seam shall be not less than 2-1/2 inches for slopes less than 3 inches in 12 inches, and not less than 1-3/4 inches for slopes 3 inches in 12 inches or greater.

2.3.2 Color Coating: Color finish shall consist of either a synthetic resin base coating applied to a pretreated and primed surface or a dry film coating material bonded to the metal substrate with adhesive. Dry film thickness of color coat shall be not less than 0.8 mil for exterior surface finish.

2.3.3 Accessories shall include flashing, trim, caps, and similar accessories of not less than the minimum thicknesses specified for roofing. Accessories of zinc-coated steel used with aluminum-coated steel shall be painted. Molded closure strips shall be closed-cell or solid-cell synthetic rubber, neoprene, or polyvinyl chloride premolded to match configuration of the covering.

2.3.4 Panel Clips shall be of two-piece construction with movable tabs. Clips shall provide for at least 2 inches of panel movement. Tabs shall be designed to be folded into the lock seam.

2.3.5 Fasteners shall be zinc-coated steel or corrosion-resisting steel.

2.3.5.1 Screws shall be not less than No. 14 diameter if self-tapping type and not less than No. 12 diameter if self-drilling and self-tapping type.

2.3.5.2 Blind Rivets shall be stainless steel.

2.3.5.3 Bolts shall be not less than 1/4-inch diameter, shouldered or plain shank, as required, with proper nuts.

2.4 Aluminized Steel Roof Panels:

2.4.1 General: Roof panels shall be formed of Type II aluminized sheet in accordance with ASTM A 463. Thickness shall be not less than 22-gauge material.

2.4.2 Aluminized steel corrugated panels shall be similar to standard profiles and dimensional and side joint characteristics as specified for aluminum roof panels and steel roof panels.

2.5 Plastic Roof Panels:

2.5.1 General: Preformed translucent plastic roof panels shall be glass fiber-reinforced polyester plastic panels conforming to ASTM D 3841.

2.5.2 Non-Fire Rated Translucent Plastic Roof Panels shall be manufactured of acrylic modified resins with either a smooth or embossed finish. Glass reinforcement shall be not less than 27 percent by weight and resins approximately 73 percent by weight and shall be of high quality light-stabilized polyester, modified with acrylic monomer.

2.5.3 Low Flame Spread Translucent Plastic Roof Panels shall be manufactured of light-stabilized, fire-retardant polyester approximately 75 percent by weight and modified with acrylic monomer. Glass reinforcement shall be not less than 25 percent by weight. Panels shall be classified by Underwriters'

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Laboratory with a flame spread of not greater than 25 when tested in accordance with ASTM E 84. Finish shall be smooth or embossed as required.

2.5.4 Corrosion-Resistant Opaque Panels shall be manufactured of resins composed of high quality light-stabilized polyester, modified with acrylic monomer. Where required, panels shall be the fire-retardant type classified by Underwriters' Laboratories, with a flame spread not greater than 25 when tested in accordance with ASTM E 84.

2.5.5 High Strength Opaque Fire-Retardant Panels suitable for walkable roof service shall be composed of high quality light-stabilized, fire-retardant polyester, modified with acrylic monomer. Glass reinforcement shall be a minimum of 38 percent, composed of woven continuous strand and chopped strand glass. Interior and exterior surfaces shall have a surface veil. Finish shall be embossed. All panels shall be classified by Underwriters' Laboratories, with a flame spread not greater than 25 when tested in accordance with ASTM E 84.

2.6 Aluminum Siding Panels: Aluminum siding panels shall be similar to aluminum roofing panels. Four-inch ribbed panels shall be approximately 1 inch deep with 9 box ribs at 4 inches on centers for a panel width of 37-1/2 inches.

2.7 Steel Siding Panels shall be similar to steel roofing panels, including finish and profiles (except box rib profile). Thickness shall be 24 galvanized sheet gauge or thicker.

2.8 Insulated Siding Panels:

2.8.1 Factory-assembled Sandwich Panels:

2.8.1.1 General: Interior and exterior panels shall be shop-assembled, fabricated of hot-dipped, zinc-coated, roll-formed steel sheet, ASTM A 446, Grade A, except where higher strength is required for performance, and G90 zinc coating. Thickness of interior and exterior panels shall be determined for wall spans and design loading as required.

2.8.1.2 Insulation shall be standard glass fiber blanket insulation complying with ASTM C 665, Type I, with a k-value of 0.27 at 75 F and a density of not less than 1.5 lbs/cu ft.

2.8.1.3 Assembled Panel System shall have standard continuous gasket at male legs isolating metal-to-metal contact. Panels shall be factory-caulked.

2.8.1.4 All Related Closures, Flashings, and Copings shall be manu-factured from same gauge material as exterior face metal panel and shall be properly engineered to job conditions.

2.8.1.5 Finish of Exterior Panels shall be factory prime-coated and color-coated with one of the color coatings specified for aluminum panels. Finish of interior panels shall be prime coat with a color coat as required.

2.8.2 Field-Assembled Sandwich Panels:

2.8.2.1 Interior Wall Facing Units shall be hot-dipped, zinc-coated, single rib design steel sheet, ASTM A 446, Grade A, G90 zinc coating. Interior wall facing units may be of 0.024 inch or thicker aluminum. Interior units shall be roll-formed in unit widths of 12 inches with 1-1/2 inch ribs or 24 inches with 2-inch ribs. Interlocking joints shall be provided between units. Interior wall units shall present a flush inside wall surface.



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2.8.2.2 Insulation: Rigid or semi-rigid board insulation shall conform to Fed. Spec. HH-I-558, Form A, Class 1 or 2. Blanket insulation shall conform to Fed. Spec. HH-I-558, Form B, Type I, Class 6. Insulation shall have a flame spread not in excess of 25 and a smoke developed rating not in excess of 50 when tested in accordance with ASTM E 84. Insulation shall be of sufficient thickness to provide the designated U-value.

2.8.2.3 Exterior Panel Materials shall be mill-embossed finished aluminum, galvanized steel, galvanized and painted steel, or stainless steel.

2.8.2.3.1 Aluminum Sheets shall be ASTM B 209. Where required, stucco embossed finish shall be provided. Where required, provide Alclad aluminum alloy-clad sheets where exposed without applied coatings.

2.8.2.3.2 Steel Panels shall be metal panels of zinc-coated steel conforming to ASTM A 446, Grade A, G90 zinc coating. Where color coating is required, finish shall be factory prime-coated and color-coated with one of the color coatings specified for aluminum roof panels.

2.8.2.3.3 Stainless Steel Panels shall be fabricated from ASTM A 167, sheet stock types 302 or 304 stainless steel with No. 2B surface finish. Where exposure to corrosive atmospheres or coastal areas is required, stainless steel panels shall be fabricated from ASTM 167, sheet stock type 316, with No. 2B surface finish.

2.9 Solid Vinyl Siding shall comply with ASTM D 3679, Class 2.

3.0 EXECUTION:

3.1 General: Installation shall include all standard fasteners, flashings, sealants, gaskets, closure strips, trim, and insulation associated with roofing and siding. Provide expansion joints where required.

3.2 Field-Assembled Sandwich Panel Siding shall include installation of subgirts. All panels shall be erected with flutes and ribs running vertically.

3.3 Factory-Assembled Sandwich Panels shall be erected by means of standard concealed clip attachments.

3.4 Solid Vinyl Siding shall include all accessories required for a complete installation.



Section 07463 Asbestos Cement Roofing And Siding

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of asbestos cement roofing and siding. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wall Covering and Roof Covering: Corrugated asbestos cement panels shall conform to ASTM C 221, Type A, natural gray color.

2.2 Accessories: Accessories of asbestos cement used as supplementary or finishing pieces shall conform to ASTM C 221. Molded closure strips shall be bituminous saturated fiber, closed-cell or solid-cell synthetic rubber or neoprene, or polyvinyl chloride premolded to match the configuration of the covering.

2.3 Fasteners: Fasteners exposed to weather shall be gasketed or have gasketed washers to weatherproof the penetration. Gaskets shall be neoprene, other elastomeric material, or lead approximately 1/8 inch thick. Bolts and drive screws shall be zinc-plated steel. Self-tapping screws shall be cadmium-coated or 300 series corrosion-resisting steel. Bolt clips shall be galvanized steel of standard design appropriate for the application.

2.4 Insulation Materials: Insulation shall be of sufficient thickness to provide the designated roof and wall U-values through the completed construction, when determined for winter conditions in accordance with recognized methods in agreement with the ASHRAE Handbook & Product Directory, Fundamentals. Insulation shall have a facing providing a permeability as required when tested in accordance with ASTM E 96. Facing shall be either of reinforced foil with a vinyl finish or sheet vinyl, except unreinforced foil may be used in concealed locations. Facings and finishes shall be factory-applied. Insulation, including facings and finishes, shall have a flame spread not in excess of 25 and a smoke developed rating not in excess of 50 when tested in accordance with ASTM E 84.

2.4.1 Rigid or Semi-Rigid Board Insulation shall conform to Fed. Spec. HH-I-558, Form A, Class 1 or Class 2. Exposed insulation shall have a white non-dusting and non-shedding finish.

2.4.2 Blanket Insulation shall conform to Fed. Spec. HH-I-558, Form B, Type I, Class 6.

2.5 Insulation Retainers: Insulation retainers shall be type, size, and design necessary to hold the insulation adequately. Metallic retaining members shall be nonferrous or have a nonferrous coating. Nonmetallic retaining members, including adhesives used in conjunction with mechanical retainers or at insulation seams, shall have a fire resistance classification not less than that permitted for the insulation.

2.6 Wall Liners: Wall liners shall be 0.024-inch or thicker aluminum or 26 galvanized sheet gauge or thicker steel. Wall liners shall be formed or patterned to prevent waviness and distortion and shall extend from the floor to height as required. Matching metal trim shall be provided at the base of wall lining, top of wall liner, around openings in walls and roof and over interior and exterior corners.

2.6.1 Steel Wall Liners shall be zinc-coated steel conforming to ASTM A 446, G 90 coating designation, or aluminum-coated steel conforming to ASTM A 463, Type 2.

2.6.2 Aluminum Wall Liners shall conform to ASTM B 209, temper as required for the forming operation.



2.6.3 Sealant shall be as recommended by the roofing and siding manufacturer.

3.0 EXECUTION:

3.1 Wall Covering and Roof Covering: Sheets shall be laid the straight or staggered joint method as required. Wall covering shall be applied with edge corrugations turned in and the longitudinal configurations in the vertical position. Roof covering shall be applied with the edge corrugations turned down and the longitudinal configurations in the direction of the roof slope. End laps shall be made over framing members with fasteners into framing members approximately 3 inches from the end of the overlapping sheet. Side laps and end laps of roof and wall covering and joints at accessories shall be sealed. Holes for fasteners shall be drilled only in the high part of the corrugation. Fasteners shall be driven normal to the surface and to a depth to seat the gasketed washers properly without overdriving and cracking the crests. Automatic end-welded studs shall not be used for applying wall and roof sheets. Cutting of sheets shall be accomplished with a saw equipped with a vacuum or a water jet and in accordance with OSHA 1910.1001 and 1926.103.

3.2 Molded Closure Strips shall be installed wherever covering sheets terminate in open-end configurations, exclusive of flashings.

3.3 Insulation shall be installed between covering and supporting members. Blanket insulation shall have facing at joints lapped and fastened in a manner that will provide tight joints. Exposed rigid or semi-rigid insulation in ceilings shall be fastened securely without loose joints and unsightly sags. Insulation retainers shall be fastened securely in place.

3.4 Wall Liners: Additional framing and accessories shall be provided as necessary for the installation of the wall liners.



Section 07510 Built-Up Roofing

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of built-up roofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Primer: Asphalt, ASTM D 41; coal-tar, ASTM D 43.

2.2 Bitumen:

2.2.1 Asphalt: ASTM D 312, Type I on slopes from 1/4 inch per foot up to and including 1/2 inch per foot, Type II or Type III on slopes above 1/2 inch per foot up to and including 1 inch per foot, Type III on slopes above 1 inch per foot and including 3 inches per foot.

2.2.2 Coal-Tar Bitumen for slopes from 1/4 inch per foot up to and including 1/2 inch per foot: ASTM D 450, Type III, unless Type I is approved by the Contracting Officer.

2.2.3 Cold-Process Asphalt Emulsion: A mechanical mixture of minute particles of asphalt and special clays suspended in water.

2.3 Cants: Treated fiberboard, ASTM C 208; wood blocking treated with waterborne preservative, AWPB LP-2; or foamglass. Cants shall have maximum 5-1/2 inch face dimensions at a 45 degree incline to roof plane and lengths as long as practical.

2.4 Felt:

2.4.1 Organic-Fiber Felt:

2.4.1.1 Plies: ASTM D 226, Type I, asphalt-saturated; or ASTM D 227, Type I, coal-tar saturated.

2.4.1.2 Asphalt-Saturated Base Sheet: No. 40 felt, ASTM D 2626, Type I or II.

2.4.2 Glass-Fiber Felt:

2.4.2.1 Plies: ASTM D 2178, Type III or IV where average January temperature is above 40 F and Type IV where average January temperature is below 45 F.

2.4.2.2 Asphalt-Impregnated Combination Base Sheet: ASTM D 2178, Type V.

2.4.3 Venting Base Sheet: Asphalt-saturated and coated base sheet with granular surfacing and embossed channels (or grooves) on bottom surface.

2.4.4 Cold-Process System Felts: Coated organic, glass-fiber, or a combination of both.

2.5 Flashings: Bituminous and sheet metal as required.



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2.6 Flashing Cement: Bituminous plastic cement complying with Fed. Spec. SS-C-153, Type I for use with asphalt-saturated felts and Type II for use with coal-tar saturated felts. 2.7 Cold-Process Cement: Solvent-based cement that evaporates slowly in cool damp weather, more rapidly in hot dry weather, and is standard with the cold-process glass-fiber reinforced asphalt emulsion roofing system manufacturer.

2.8 Mastic: Solvent-based mastic that evaporates slowly in cool damp weather, more rapidly in hot dry weather, and is standard with the cold-process mastic roofing system manufacturer.

2.9 Nails and Mechanical Fasteners: Industry standard, noncorrosive material, shape and size required for substrate.

2.10 Surfacing Materials:

2.10.1 Aggregate: Crushed stone, gravel, or crushed slag conforming to ASTM D 1863. Subject to approval, other materials may be used when blended to the grading requirements of ASTM D 1863.

2.10.2 Smooth Surfacing:

2.10.2.1 Fibrated, clay-stabilized, water thinned asphalt emulsion with non-asbestos reinforcing, ASTM D 1227, Type IV (clay-type).

2.10.2.2 Reflective Coating: ASTM D 2824, Type I if non-fibrated, Type II if fibrated.

2.10.3 Mineral Surfacing: Mineral surface cap sheet complying with ASTM D 3909.

2.11 Sheathing Paper: ASTM D 549, 5-pound rosin-sized paper.

2.12 Wood Nailers and Edge Blocking: Non-stress graded wood members, treated with waterborne preservative in compliance with AWFBI LP-2. 2.13 Walkway Protection Boards: Mineral surfaced bituminous composition boards, approximately 1/2 inch thick, manufactured specifically for hot bituminous application on built-up roofing as a protection course for foot traffic.

2.14 Roofing Systems:

2.14.1 Nailable Deck, Asphalt/Organic Felt Membrane With Aggregate Surfacing: NRCA Specification Plate No. 31-NAOA, Diagram B for light-weight insulating concrete decks and Diagram A for other nailable decks.

2.14.2 Nailable Deck, Asphalt/Glass-Fiber Felt Membrane:

2.14.2.1 With Aggregate Surfacing: NRCA Specification Plate No. 32-NAGA, Diagram B for lightweight insulating concrete decks and Diagram A for other nailable decks.

2.14.2.2 With Smooth Surfacing: NRCA Specification Plate No. 32-NAGA except for substitution of smooth surfacing for aggregate surfacing.

2.14.2.3 With Mineral Surfacing: NRCA Specification Plate No. 32-NAGA except for deletion of one ply of felt and substitution of mineral surfacing for aggregate surfacing.

2.14.3 Nailable Deck, Coal-Tar/Organic Felt Membrane with Aggregate Surfacing: NRCA Specification Plate No. 33-NCOA, Diagram B for light-weight insulating concrete decks and Diagram A for other nailable decks.

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2.14.4 Insulated Deck, Asphalt/Organic Felt Membrane with Aggregate Surfacing: NRCA Specification Plate No. 41-IAOA; Diagram B for insulation substrate of composite board, polyisocyanurate foam board, or polyurethane foam board; Diagram A for other insulation substrates.

2.14.5 Insulated Deck, Asphalt/Glass-Fiber Felt Membrane:

2.14.5.1 With Aggregate Surfacing: NRCA Specification Plate No. 42-IAGA; Diagram B for insulation substrate of composite board, poly-isocyanurate foam board, or polyurethane foam board; Diagram A for other insulation substrates.

2.14.5.2 With Smooth Surfacing: NRCA Specification Plate No. 42-IAGA except for addition of one ply of felt and substitution of smooth surfacing for aggregate surfacing.

2.14.5.3 With Mineral Surfacing: NRCA Specification Plate No. 42-IAGA except for substitution of mineral surfacing for aggregate surfacing.

2.14.6 Insulated Deck, Coal-Tar/Organic Felt Membrane with Aggregate Surfacing: NRCA Specification Plate No. 43-ICOA; Diagram B for insulation substrate of composite board, polyisocyanurate foam board, or polyurethane foam board; Diagram A for other insulation substrates.

2.14.7 Concrete Deck, Asphalt/Organic Felt Membrane with Aggregate Surfacing: NRCA Specification Plate No. 51-CAOA, Diagram A or B as directed.

2.14.8 Concrete Deck, Asphalt/Glass-Fiber Felt Membrane:

2.14.8.1 With Aggregate Surfacing: NRCA Specification Plate No. 52-CAGA, Diagram A or B as directed.

2.14.8.2 With Smooth Surfacing: NRCA Specification Plate No. 52-CAGA except for addition of one ply of felt and substitution of smooth surfacing for aggregate surfacing.

2.14.8.3 With Mineral Surfacing: NRCA Specification Plate No. 52-CAGA except for substitution of mineral surfacing for aggregate surfacing.

2.14.9 Concrete Deck, Coal-Tar/Organic Felt Membrane with Aggregate Surfacing: NRCA Specification Plate No. 53-CCOA; Diagram A or B as directed.

2.14.10 Temporary Roofing: NRCA Specification 10-TR; Diagram TR-N for nailable decks, Diagram TR-C for non-nailable decks (except steel) and Diagram TR-SI for steel decks.

2.14.11 Cold-Process Built-Up Membrane Roofing:

2.14.11.1 Glass-Fiber Reinforced Asphalt Emulsion System: Minimum two layers of coated ply felts with smooth surfacing (asphalt emulsion).

2.14.11.2 Mastic System: Coated ply felts (three plies on slopes less than 1 inch per foot and two plies on slopes greater than 1 inch per foot) embedded into a spray application of mastic with embedded mineral granule surfacing.

2.15 UL Listing: Built-up roofing systems and component materials of roofing systems that have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Roof covering materials shall bear the Classification



marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.16 FM Listing: Built-up roofing systems and component materials of roofing systems that have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Built-up roofing systems and component materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Mineral Surfaced Cap Sheet: Cut sheet in 12- to 18-foot lengths and leave to flatten prior to application.

3.1.2 Temporary Roofing: Remove temporary roofing completely prior to installation of permanent roofing.

3.1.3 Weather Limitations: Do not apply roofing when it is excessively windy, wet, or when the ambient temperature is less than 40 F.

3.1.4 Heating Bitumen: Asphalt shall not be heated above 475 F. Coal tar shall not be heated above 400 F. Application temperatures shall be measured at the mop bucket and/or mechanical applicator.

3.2 Application:

3.2.1 NRCA-Specified Roofing Systems shall be applied in accordance with the NRCA specifications.

3.2.2 Smooth Surfacing: Glaze-coat entire surface of completed built-up roof membrane with hot mopping of Type III asphalt, applied at same rate and concurrent with interply moppings. Allow asphalt coating to age a minimum of 7 days, then apply top coating of asphalt emulsion at an average rate of 2.5 gallons per square. If roof is to receive reflective coating, it shall be applied promptly after application and initial cure (next day) of emulsion coating at an average rate of 1.25 gallons per square.

3.2.3 Mineral Surfacing: Promptly after completion of ply-sheet membrane (same day where possible), apply one lapped course of cap sheet. Set cap sheet in uniform mopping of same hot bitumen used in ply-sheet courses, at an average rate of 15 lbs per square. Lap ends a minimum of 6 inches.

3.2.4 Cold-Process Roofing Systems:

3.2.4.1 Glass-Fiber Reinforced Asphalt Emulsion: Nail or spot-mop the first ply felt. Apply additional plies with cold-process cement brushed, sprayed, or rolled on at the rate of approximately 1-1/2 gallons per square. If precipitation is expected within 48 hours, a solid mopping of hot asphalt shall be used instead of cold-process cement. Over the base sheet assembly, the asphalt emulsion shall be spray-applied with a three-nozzle gun that has a glass fiber cutter that disperses glass fibers 3/4 inches long into the emulsion as it is spray-applied. Reinforced asphalt emulsion shall be sprayed at the rate of approximately 9 gallons of emulsion and 3 pounds of glass-fiber reinforcement per square. If the roof is designated to receive a reflective coating, it shall be applied as soon as the asphalt emulsion membrane is firm enough to support roof traffic without indentations forming in the film.

3.2.4.2 Mastic System: Embed ply felts in mastic sprayed at a rate of approximately 2-1/2 gallons per square per coat. Embed mineral surfacing in top coat of mastic.

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3.3 Accessories and Flashings: Install flashings as recommended by the NRCA Roofing and Waterproofing Manual and the SMACNA Architectural Sheet Metal Manual. Set walkways in additional pour-coat of hot bitumen after aggregate surfacing of built-up roofing membrane.

3.4 Surface Maintenance of Existing Aggregate Surfaced Roofs:

3.4.1 Preparation: Sweep surface and remove all loose and poorly embedded existing aggregate before applying new surface materials.

3.4.2 Primer: Apply thin coat of asphalt primer over affected areas. Allow to dry thoroughly before applying flood coat.

3.4.3 Flood Coat: Apply hot bitumen of type compatible with existing roofing materials, at a rate of 60 pounds per square for Type III asphalt and 75 pounds per square for coal tar.

3.4.4 Aggregate Surfacing: While bitumen is hot, embed clean surfacing aggregate of type to match existing, applied at a rate of 400 pounds per square for gravel, 300 pounds per square for slag, and 400 pounds per square for crushed stone.

3.5 Maintenance and Repair Patching (Hot-Applied Roofing):

3.5.1 Blisters: Make two cuts at right angles to each other, extending cuts 12 inches beyond edge of defective areas and to substrate surface. Fold back cut areas and allow substrate and membrane to dry. Wet insulation shall be removed and replaced with dry insulation matching the original. When dry, apply solid bitumen mopping over opened area and fold cut sections of membrane into bitumen. Totally embed membrane in bitumen.

3.5.2 Splits: Cut out membrane at least 12 inches on each side and extending 18 to 24 inches on each side and extending 18 to 24 inches beyond each end of split area. Dry lay a 6-inch wide strip of roofing felt, cemented over split area. Apply uniform coat of bitumen over dry felt, extending to embedded aggregate in all directions.

3.5.3 Disintegrated and Damaged Felts: Cut and remove disintegrated, damaged, and loose felts to extent necessary to provide sound materials. Cut out wet felts and allow wet surfaces to completely dry before installing patch materials. Replace removed felts with equal plies of felt. Felts shall be solidly mopped into place in hot bitumen and shingled into existing plies to extent possible.

3.5.4 Additional Plies: Finish defective areas by applying at least two additional plies of roofing felt, embedded in hot bitumen. Extend edges of first ply a minimum of 9 inches beyond affected area on all sides and second ply 18 inches beyond affected area on all sides.



SECTION 07530 SINGLE PLY ROOFING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of single ply roofing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Roll Roofing: ASTM D 371, Type II, for mineral surfaced; ASTM D 224, Type II, for smooth surfaced.

2.2 Elastic Sheet Roofing: Elastic sheet material shall be EPDM, hypalon, neoprene, polyvinyl chloride, chlorinated polyethylene, polyisobutylene, or modified bitumen (reinforced or unreinforced), as required. Provide products that are fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials. The elastic sheet roofing shall meet the following requirements based on type of installation.

2.2.1 For Loose-Laid Ballasted System: Manufacturer's standard thickness but not less than 45 mils, 1,400 psi minimum tensile strength (ASTM D 412), 250 percent elongation (ASTM D 412), vapor permeable, ultraviolet and ozone resistant, low temperature brittleness of -40 F (ASTM D 746).

2.2.2 For Mechanically Fastened System: Manufacturer's standard thickness but not less than 60 mils, 1,600 psi minimum tensile strength (ASTM D 412), minimum tear resistance of 150 lbs/lin in (ASTM D 624), 300 percent elongation (ASTM D 412), ultraviolet and ozone resistant, low temperature brittleness of -40 F (ASTM D 746), standard color.

2.2.3 For Fully Adhered System: Manufacturer's standard thickness but not less than 60 mils, 1,400 psi minimum tensile strength (ASTM D 412), 250 percent minimum elongation (ASTM D 412), ultraviolet and ozone resistant, low temperature brittleness of -40 F (ASTM D 746), standard or special color, as required.

2.3 Fluid-Applied Roofing: Fluid-applied materials shall be sprayed-in-place urethane roofing with two-coat elastomeric silicone rubber protective coating.

2.3.1 Urethane Foam:

PROPERTY	ASTM TEST METHOD	VALUE
Density, pcf overall	D 1622	2.5 min., 3.5max.
Compressive Strength psi parallel to rise	D 1621	40.0 min.
Thermal Conductivity (k factor) Btu/hr/ sq ft/degrees F/in.	C 177	new 0.11 max. aged 0.15 max. (6 months)

2.3.2 Elastomeric Protective Coating: Two-coat silicone rubber system, bonded to urethane foam:

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PROPERTY	ASTM TEST METHOD	VALUE
Tensile Strength, psi	D 412	500-600
Elongation, percent	D 412	100-150
Hardness	D 2240	45

2.4 Roofing Installation Accessories:

2.4.1 Roll Roofing:

2.4.1.1 Roofing Nails shall be 12-gauge galvanized with minimum 3/8-inch diameter head and 7/8-inch long shank.

2.4.1.2 Cement shall be cold process asphalt as recommended by material manufacturer.

2.4.2 Elastic Sheet Roofing:

2.4.2.1 Ballast for Loose-Laid Ballasted Systems shall be washed round riverbed gravel, ranging in size from 3/4 inch to 1-1/2 inches in diameter.

2.4.2.2 Mechanical Fasteners used with mechanically fastened system shall be screws, nails, battens, accessory components, and adhesives as appropriate for the substrate.

2.4.2.3 Adhesive for Fully Adhered System shall be compatible with substrate and project conditions and formulated to withstand a minimum 60 psf uplift force.

2.4.2.4 Protective Color Coat as required for mechanically fastened and fully adhered systems shall be ozone-resistant, liquid-applied hypalon.

2.4.2.5 Flashing Material shall be compatible with the membrane.

2.4.2.6 Membrane Seaming System shall be of manufacturer's standard materials for sealing lapped joints, including edge sealer to cover exposed spliced edges.

2.4.2.7 Cant Strips and Flashing Accessories shall be compatible with membrane, including adhesive tapes, flashing cements, and sealants.

2.4.2.8 Slip Sheet for protection of membrane from incompatible substrate shall be as recommended by membrane manufacturer.

2.4.2.9 Walkway Protection Boards, where required, shall be prefabricated concrete pavers containing no asphalt or coal-tar derivatives, suitable for use without cracking or breaking.

2.4.3 Fluid-Applied Roofing: Ceramic granules shall be No. 11 screen size dry and free from dust.

2.5 UL Listing: Single ply roofing systems and component materials that have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Single ply roof covering materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.



2.6 FM Listing: Single ply roofing systems and component materials that have been evaluated by Factory Mutual System for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Single ply roofing systems and component materials bearing FM approval marking on bundle, package, or container indicating that the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Roll Roofing: Clean wood deck completely. Ensure that all nails are driven flush with or below deck surface. Surface must be dry before placing any roofing material.

3.1.2 Elastic Sheet Roofing: Clean of dust, debris, or other substances detrimental to work. Remove sharp projections. Prime substrate as required.

3.1.3 Fluid Applied Roofing: Clean all debris from roof surface, new or existing. On existing roof, repair any roof damage to provide a clean smooth surface.

3.2 Installation:

3.2.1 Roll Roofing: Install in accordance with the National Roofing Contractors Association Steep Roofing Manual application instructions.

3.2.2 Elastic Sheet Roofing and Fluid Applied Roofing: Install in accordance with manufacturer's instructions.

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SECTION 07550 INVERTED ROOF SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of inverted roof systems. Materials shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Asphalt Primer: ASTM D 41.

2.2 Fiberglass Base Sheet: Glass fiber mat coated with weathering grade asphalt to provide a nonporous ply.

2.3 Fiberglass Felt: ASTM D 2178, Type IV.

2.4 Sheathing Paper: Single-ply 5 lb/100 sq ft, rosin-sized sheathing paper.

2.5 Base for Built-Up Membrane Applied Over Steel Deck shall be one of the following with mechanical attachment:

2.5.1 Mineral Fiberboard: ASTM C 726, 3/4 inch thick.

2.5.2 Wood Fiberboard: Organic fiberboard roof insulation in accordance with ASTM C 208, 1 inch thick.

2.5.3 Gypsum Wallboard: 1/2 inch thick, ASTM C 36.

2.6 Steep Asphalt: ASTM D 312, Type III.

2.7 Extruded Rigid Polystyrene Insulation: ASTM C 578, Type IV, 24-inch by 48-inch standard size, with drainage channel on bottom of each board.

2.8 Galvanized Roofing Nails: 11 gauge, barbed, galvanized with 7/16-inch to 5/8-inch diameter heads or other approved type.

2.9 Fabric for Application Above Insulation: 3 oz/sq yd black polyester or 3 oz/sq yd black polypropylene approved by inverted roof system manufacturer.

2.10 Ballast: Gravel or crushed stone shall be in accordance with ASTM D 448, Gradation No. 57.

2.11 UL Listing: Inverted roof systems and component materials that have been tested for application and slopes and are listed by Underwriters' Laboratories, Inc. (UL) for Class A or Class B external fire exposure shall be provided. Inverted roof systems and component materials shall bear the Classification marking (UL) on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-Up Service.

2.12 FM Listing: Inverted roof systems and component materials that have been evaluated by Factory Mutual system for fire spread, wind uplift, and hail damage are listed in the "Factory Mutual Approval Guide" for Class 1 construction. Inverted roof systems and component materials bearing FM approval



marking on bundle, package, or container indicating the material has been subjected to FM's examination and follow-up inspection service shall be provided.

3.0 EXECUTION:

3.1 Installation on Various Deck Materials:

3.1.1 On Lightweight Insulating Concrete Decks, prime concrete surface with asphaltic primer.

3.1.2 On Poured Gypsum Decks, lay one ply of approved fiberglass base sheet with edges lapped and nailed with nails approved for use with gypsum deck materials.

3.1.3 On Precast Concrete Plank Deck or Precast Concrete Tee Deck, prime concrete surfaces with asphalt primer. Prior to applying built-up roof membrane, apply 18-inch wide slip sheet of 2-ply dry-applied fiberglass felt to cover end joints where concrete planks or tees meet.

3.1.4 On Wood Decks, cover the deck with sheathing paper lapping and mechanically fastening each sheet to the deck. Over sheathing paper, apply one ply of approved fiberglass base sheet, lapping joints and nailing, using galvanized roofing nails driven through flat metal disks not less than 1 inch in diameter.

3.2 Builtup Roof Membrane Installation:

3.2.1 Starting at Low Point of Roof, uniformly mop the surface of the nailed fiberglass base sheet or primed deck surface with steep asphalt at the rate recommended for substrate (25 +/- 5 to 30 +/- 5 lbs per square). While hot, embed 3 plies of approved fiberglass felts in shingle fashion, lapping each sheet 24-2/3 inches.

3.2.2 Interply Moppings shall be continuous and applied at the rate listed above for substrate. Complete embedment of felts is required and is accomplished by dragging a broom or squeegee over the felt; no more pressure is required than that exerted by the weight of the "brooming" utensil. During cold weather, effective brooming is essential to eliminate voids and to ensure adhesion. As the work progresses, full mop the top surface of the membrane using a minimum coverage of 25 +/- 5 lbs per square. A second flood coat shall be applied at the rate of 45 lbs per square.

3.2.3 At No Time Shall Felts Be Left Exposed overnight or in inclement weather. All mopping bitumen shall be steep asphalt (Type III, 185-205 F softening point).

3.2.4 Bitumen Temperature at the Kettle shall be controlled so as not to exceed the bitumen manufacturer's recommendations. The roof membrane shall not be staged. Temporary membranes are not acceptable as a part of a completed membrane. Install completed membrane in final form on a day-to-day basis.

3.3 All Flashing shall Be Completed in each area prior to installing roof insulation. Details and installation shall conform to standard inverted roof system specifications.

3.4 Unadhered Insulation Installation:

3.4.1 General: Rigid polystyrene insulation shall be placed on the membrane as the membrane is completed to provide immediate protection. Flood coats of steep asphalt shall be allowed to cool completely prior to rigid insulation installation to ensure unadhered foam.

3.4.2 Rigid Polystyrene Insulation shall be placed directly on membrane with channel side down. End joints shall be staggered and all boards shall be tightly abutted. The maximum acceptable opening between

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boards shall be 3/8 inch. Install insulation to within 3/4 inch of all projections and cant strips. For multilayer installations, install subsequent layers unattached over the unadhered first layer. Stagger all joints in relation to underlying layer. The bottom layer shall be as thick or thicker than the top layer and must be a minimum of 2 inches thick.

3.4.3 Fabric Installation: Place fabric over rigid insulation, unadhered and unattached. Fabric shall be wetted to hold it in place until ballast is installed. Edges shall be overlapped a minimum of 1 foot. Install so that there are no parallel joints within 6 feet of the perimeter. Extend fabric 2 to 3 inches above the stone at perimeter and penetrations.

3.4.4 Thickness of Insulation: Installed thickness shall provide a U-value through completed roof structure, air-to-air, not in excess of that required by job location, as determined for winter conditions in accordance with recognized methods in agreement with ASHRAE Handbook Fundamentals.

3.5 Ballast Installation:

3.5.1 General: Fabric shall be covered with gravel or crushed stone ballast as the fabric is being installed. The stone top covering shall be 3/4 inch with not less than 10 percent nor more than 60 percent of fines smaller than 1/2 inch.

3.5.2 Stone or Gravel Ballast shall be applied at a minimum average rate of 1,000 lbs per square and shall be approximately 1-1/4 inches thick. Around roof perimeter and at penetrations and drains, 20 lbs/sq ft of stone ballast over a 4 foot wide area shall be applied. A continuous row of pavers constituting 22 lbs/lin ft can be substituted for the extra ballast around perimeter, penetrations and drains. Pavers shall be used in high traffic areas near roof and equipment access areas.



Section 07572 Wood Traffic Topping

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood traffic topping. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Lumber: Standard grade or No. 2 grade, nonstress grade lumber. Lumber and material sizes shall conform to requirements of the rules or standards under which produced.

2.1.1 Species of Nontreated Wood: Walkway members shall be fabricated of cypress or redwood.

2.1.2 Preservative Treated Wood: Walkway members shall be fabricated of preservative treated lumber, treated by pressure method in compliance with AWPB LP-2 and so marked in compliance with AWPB standard. Preservative treated members shall be air-dried or kiln-dried and marked "DRY." Treated wood that is cut after treatment shall be brush-coated with preservative used in original treatment.

2.1.3 Bitumen: Type used in roofing system.

2.1.4 Bituminous Cement: Fed. Spec. SS-C-153, bituminous plastic cement.

2.1.5 Type I: For use with asphalt roofing system.

2.1.6 Type II: For use with coal-tar roofing system.

2.1.7 Premolded Filler Strip: ASTM D 1751, minimum 3/8 inch thick.

2.1.8 Cap Sheet: Fed. Spec. SS-R-630, asphalt saturated roofing felt, coated with strip asphalt both sides and surfaced on weathering side with mineral granules. Cap sheet shall weigh not less than 70 pounds per square.

2.1.9 Prepared Roll Roofing: ASTM D 249, No. 90 asphalt saturated organic fiber felt, coated on both sides with asphalt and surfaced on weathering side with mineral granules.

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SECTION 07573 COMPOSITION TRAFFIC TOPPING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of composition traffic topping. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Composition Panels: ASTM D 517.

2.2 Adhesive: ASTM D 2822, asphaltic roofing cement.

2.3 Bitumen: Type used in roofing system.

3.0 EXECUTION:

3.1 Preparation: Cut panels at the project site only when necessary to obtain sizes of panels different from those furnished.

3.2 Installation:

3.2.1 Spaced Panels: Space panels maximum of 6 inches apart.

3.2.2 Butted Panels: Butt panels together to form continuous walkway areas.



Section 07574 Precast Concrete Or Tile Traffic Topping

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of precast concrete or tile traffic topping. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Precast Concrete Tiles:

2.1.1 Compressive Strength: Precast concrete tiles shall have a strength of 3,000 pounds per square inch at 28 days.

2.1.2 Quality Assurance: Absorption shall not exceed 8 percent by weight when tested in compliance with cold water absorption tests specified in ASTM C1195.

2.2 Quarry Tile: ANSI A137.1.

2.3 Drainage Bed: ASTM D 1863, crushed stone, maximum size 1/2 inch.

2.4 Mortar Materials:

2.4.1 Portland Cement: ASTM C 150, Type I, low alkali content.

2.4.2 Sand: ASTM C 144.

2.4.3 Hydrated Lime: ASTM C 207, Type S.

2.4.4 Setting Bed Mortar Mix: One part Portland cement, three parts damp sand.

2.4.5 Pointing Mortar: One part Portland cement, two parts fine graded sand, 1/5 part lime.

2.5 Sealant: ASTM C 920, Grade P, two-component elastomeric type compound.

3.0 EXECUTION:

3.1 Preparation: Prior to installing any roof traffic tiles, coat areas to receive tiles with a solid application of bitumen used in roofing system.

3.2 Installation:

3.2.1 Drainage Bed: In areas to receive traffic roof tiles, install 1-1/2 inch thick drainage bed.

3.2.2 Tiles: Lay tiles in 1-inch thick mortar bed. Provide 3/16-inch to 1/4-inch wide joints between tiles.



SECTION 07605 SHEET METAL

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sheet metal. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Materials and fabrication shall comply with applicable recommendations and details of SMACNA Architectural Sheet Metal Manual. 2.1 Shop- and Job-Fabricated Sheet Metal Items may include the following:

- a. Downspouts with clips, anchors, straps, and leaders.
- b. Edge strip.
- c. Flashings, including base, cap, eave, stepped, valley, apron, collar, through-wall and coping flashings.
- d. Gravel stops and fasciae, extruded or formed.
- e. Gutters, with continuous cleats, hangers, and cover plates.
- f. Louvers.
- g. Pitch pans.
- h. Reglets.
- i. Scuppers.
- j. Splash pans.
- k. Roofing, including batten seam, flat seam, standing seam, and bermuda seam types.

2.2 Aluminum:

2.2.1 Mill Finished Sheets: ASTM B 209, Alloy 3003, temper H14.

2.2.2 Colored Sheets: ASTM B 209, alloy Alclad 3003, temper H14.

2.3 Brass: ASTM B 36, copper alloy No. 260, rolled half-hard temper.

2.4 Copper: ASTM B 370, light cold-rolled temper, mill finish.

2.5 Lead Coated Copper: Cold-rolled sheet copper complying with ASTM B 370, coated with not less than 0.06 pounds per square foot of lead per side. Lead coating shall comply with ASTM B 101, Type I.

2.6 Stainless Steel: ASTM A 167, corrosion-resistant steel, annealed, AISI Type 301, No. 1 finish.

2.7 Copper Clad Stainless Steel: ASTM B 506, stainless steel sheet metal, coated with metallurgically-bonded cladding of copper on each face amounting to 10 percent of thickness (80 percent stainless steel, 20 percent copper). Core shall comply with ASTM A 176, AISI Type 430. Copper cladding shall have mill finish.

2.8 Lead-Coated Copper Clad Stainless Steel: ASTM B 506, copper clad stainless steel sheet metal, coated on one side with 0.06 pounds per square foot of lead complying with ASTM B 101, Type I.

2.9 Terne-Coated Stainless Steel: Stainless steel core complying with ASTM A 167, AISI Type 304, with terne coating of 20 percent tin and 80 percent lead on both faces.

2.10 Terne-Coated Steel: Fed. Spec QQ-T-201, Type 1 commercial quality steel sheet core with 1.45 ounces coating of 20 percent tin and 80 percent lead on both faces.



2.11 Galvanized Steel: ASTM A 526, commercial quality carbon steel sheets with minimum 0.20 percent copper content, hot-dipped galvanized to comply with ASTM A 525, G 90 coating designation. Galvanized steel designated to be finished shall be mill phosphatized and coated with manufacturer's standard baked-on finish.

2.12 Zinc-Alloy: ASTM B 69, containing not less than 0.6 percent copper and 0.14 percent titanium, standard temper.

2.13 Lead Sheet: Fed. Spec. QQ-L-201, Grade B, formed from common desilverized pig lead, complying with ASTM B 29.

2.14 Fasteners:

2.14.1 General Use Fasteners: Same material as sheet metal to which attached, or as recommended by sheet metal manufacturer.

2.14.2 Fasteners for Copper Items: Bronze, brass, or copper types.

2.14.3 Fasteners for Aluminum:

2.14.3.1 Rivets: ASTM B 316, alloy 1100, temper H14, minimum shank diameter of 0.187 inch, length as required to form a head.

2.14.3.2 Screws and Bolts: ASTM B 211, alloy 6061, temper as appropriate for particular use.

2.14.3.3 Washers: Alloy 1100, temper H18 or same aluminum alloy as aluminum sheet or fasteners being used.

2.14.3.4 Noncorrosive Fasteners: Stainless steel, AISI Type 304.

2.14.3.5 Cleats: Formed of same material and thickness as sheet metal being installed, minimum 2 inches wide and long enough to be fully incorporated into work.

2.15 Solder: ASTM B 32, of type best suited for intended purpose.

2.16 Welding Electrodes:

2.16.1 Aluminum: Welding electrodes and filler alloy of type best suited for alloy of aluminum being welded. Paste flux shall be used in welding aluminum.

2.16.2 Stainless Steel: Type recommended by stainless steel producer for type of metal sheet furnished.

2.17 Burning Rods for Lead shall be same composition as lead sheet.

2.18 Miscellaneous Materials:

2.18.1 Felt: ASTM D 226, No. 15 asphalt-saturated organic felt, unperforated.

2.18.2 Sheathing Paper: Rosin-sized paper weighing not less than 6 pounds per square.

2.18.3 Bituminous Plastic Cement: Fed. Spec. SS-C-153, Type I for use with asphaltic roofing materials and Type II for use with coal-tar roofing materials.

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2.18.4 Bituminous Coating: Fed. Spec. TT-C-494, Type II, cold-applied solvent type bituminous mastic coating for application in minimum dry film thickness of 12 mils per coat.

2.18.5 Primer Paint: Fed. Spec. TT-P-645, alkyd type zinc chromate.

2.18.6 Zinc Dust Paint: SSPC PAINT 5 galvanized sheet metal touchup paint.

2.18.7 Sealants: Non-drying mastic type as recommended for particular joint being sealed and anticipated movement within joint. One-part sealant shall be ASTM C 920, Type S, Grade NS, able to withstand an increase and decrease of at least 50% of the joint width as measured at time of application. Two-component sealant shall be ASTM C 920, Type M, Grade NS, also resistant to 50% joint movement.

2.18.8 Wood Nailers and Edge Blocking: Non-stress graded wood members, moisture-resistant, treated with waterborne preservative in compliance with AWPB LP-2 standard. Nominal dimensions of nailers shall be 1 inch by 3 inches, unless otherwise required.

2.18.9 Nonmetallic Through-Wall Flashing: Nonreinforced, homogeneous, waterproof, impermeable elastomeric sheeting having not less than 1,000 psi tensile strength nor more than 7 percent tension set at 50 percent elongation when tested in accordance with ASTM D 412. Sheeting shall resist exposure without visible deterioration when tested not less than 400 hours in accordance with ASTM D 822. Sheeting shall not crack or flake when exposed to low temperatures.

2.18.10 Miscellaneous Sheet Metal Roofing Materials:

2.18.10.1 Wood Batten Strips shall be non-stress graded wood members of nominal 2 inches by 2 inches, pressure-treated with waterborne preservatives in compliance with AWPB LP-2, or other material that is compatible with sheet metal.

2.18.10.2 Polyethylene Underlayment shall be a minimum of 6 mil chlorinated polyethylene film.

3.0 EXECUTION: Installation of sheet metal materials shall comply with applicable recommendations and details of SMACNA Architectural Sheet Metal Manual.

3.1 Nailing Strips and Edge Blocking: When deck surface is non-nailable, nailing strips and edge blocking shall be installed over surface of deck for anchorage of sheet metal materials.

3.2 Substrate Conditions: Surfaces to receive sheet metal materials shall be even, smooth, sound, thoroughly clean and dry, and free from defects that might affect application.

3.3 Fasteners shall be concealed wherever possible in exposed work.

3.4 Dissimilar Surfaces:

3.4.1 Separate Dissimilar Metals by painting each metal surface in areas of contact with bituminous coating, or provide a layer of waterproof sheathing paper or asphalt-coated felt between contact surface.

3.4.2 Separate Metal Items from treated wood and cementitious materials with bituminous coating, applied either to substrate or metal.

3.4.3 Aluminum shall not be used when it will be in contact with copper or where it will contact water that flows over copper surfaces. Protect aluminum surface in contact with wet or pressure treated wood, cementitious materials, or ferrous metals from galvanic or corrosive action by applying one coat of zinc



chromate primer and one coat of aluminum paint, or by placing layer of nonabsorptive tape or gasket between adjoining surfaces.

3.4.4 Where Asphalt-Saturated Felt has been applied under sheet metal that will be soldered or welded, cover felt with one layer of sheathing paper before installing sheet metal.

3.5 Sheet Metal Roofing:

3.5.1 Removing Existing Sheet Metal Roofing: Remove sheet metal roofing in full sections or cut damaged sections where possible to make watertight joints between existing roofing and new materials to be installed.

3.5.2 Preparing Existing Surfaces: Bent or raised portions of existing roofing shall be nailed down and repaired to extent necessary to provide smooth surface for sheet metal roofing.

3.5.3 Application of Underlayment:

3.5.3.1 Felt Underlayment: Apply one layer of asphalt-saturated roofing felt over deck surface and cover with one layer of sheathing paper. Underlayment plies shall be installed with mechanical fasteners spaced 6 inches in center at laps or adhesives as appropriate for substrate conditions.

3.5.3.2 Polyethylene Film Underlayment: Install one layer of polyethylene film underlayment over deck surface with adhesive. Cover polyethylene film with one layer of sheathing paper applied with adhesive. Mechanical fasteners shall be installed only where deck surface presents nailable conditions.

3.5.4 Coating Backside of Metal Sheets:

3.5.4.1 Bituminous Coating: Coat back side of metal roofing with bituminous coating wherever metal will be in contact with wood, ferrous metal, or cementitious construction.

3.5.4.2 Painting: Paint back side of metal roofing with zinc chromate type primer, minimum 2-mil dry film thickness.

3.5.5 Expansion Seams: Provide loose lock or slip seams, as designated. Seams shall allow 1/2-inch for expansion and shall be sealed with sealant.

3.5.6 Penetrations Through Roofing shall be flashed with sheet metal material to match roofing material.



Section 07705 Roof Accessories

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of heat and smoke vents, roof hatches, gravity ventilators, prefabricated curbs and equipment supports, and curb-set expansion joints. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Comply with SMACNA Architectural Sheet Metal Manual details for fabrication of units, including flanges and capflashing to coordinate with type of roofing indicated.

2.1 Zinc-Coated Steel: Commercial quality with 0.20 percent copper, ASTM A 525, G90 hot-dip galvanized, mill phosphatized.

2.2 Stainless Steel: AISI Type 302/304, ASTM A 167, 2D annealed finish except as otherwise indicated, tempered as required for forming and performance.

2.3 Aluminum Sheet: ASTM B 209, Alloy 3003, tempered as required for forming and performance; AA-C22A41 clear anodized finish, except mill finish prepared for painting where designated for field painting.

2.4 Extruded Aluminum: Alloy 6063-T52; 0.078 inch minimum thicknesses for primary framing and curb member legs, 0.062 inch for secondary legs; AA-C22A41 clear anodized finish on exposed members, except as otherwise designated.

2.5 Insulation: Rigid or semi-rigid board of glass fiber.

2.6 Wood Nailers: Softwood lumber, pressure-treated with water-borne preservatives for above ground use, complying with AWPB LP-2; not less than 1-1/2 inches thick.

2.7 Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal. Match finish of exposed fasteners with finish of material being fastened. Where removal of exterior exposed fasteners affords access to building, provide non-removable fastener heads.

2.8 Gaskets: Tubular or fingered design of neoprene or polyvinyl chloride, or block design of sponge neoprene.

2.9 Bituminous Coating: Fed. Spec. TT-C-494 or SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coating.

2.10 Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

2.11 Elastomeric Sealant: Type that is compatible with joint surfaces; ASTM C 920 and ASTM C 1184.

2.12 Roofing Cement: ASTM D 2822, asphaltic.

2.13 Prefabricated Heat/Smoke Vents: Provide units that have been tested, listed, and labeled by UL (Class A) or FM, as designated. Except as otherwise designated, fabricate for 40 lbs/sq ft external loading and 20 lbs/sq ft internal loading pressure. Fabricate framing of the following materials as designated, with manufacturer's standard welded or sealed mechanical corner joints, including cap flashing:

- a. Formed or extruded aluminum.
- b. Zinc-coated steel.



c. Formed or extruded aluminum or zinc-coated steel.

2.13.1 Hatch-Lid Type Units: Fabricate with single or double aluminum covers with 1 inch integral insulation and gaskets. Equip units with automatic self-lifting mechanisms and fusible links or other heat-sensitive or smoke-sensitive release devices as indicated, and with complete hardware including hold-open devices and independent manual release devices for inside and outside operation of covers.

2.13.2 Fusible-Dome Type Units: Provide manufacturer's standard shrinkback/drop-out polyvinyl chloride sheet dome unit for 210 F activation; with light transmittance of 40 percent, proven 10-year weather resistance, exterior acrylic protective coating, and maximum flame spread rating of 25 (UL 723). Equip each unit with external safety grid capable of supporting 200 pound loading. Provide glazing system for easy replacement of activated domes and for drainage of condensation to exterior.

2.14 Prefabricated Roof Hatches: Fabricate units as single-leaf type unless otherwise directed, for 40 lbs/sq ft external loading and 20 lbs/sq ft internal loading pressure. Frame with 9-inch high integral-curb double-wall construction with 1-1/2 inch insulation, cant strips, and cap flashing, with welded or sealed mechanical corner joints. Provide double-wall cover construction with 1 inch insulation core. Equip units with complete hardware set including hold-open devices, interior padlock hasps, and both interior and exterior latch handles. Provide gasketing. Fabricate units of following materials as designated:

- a. Aluminum sheets and extrusions.
- b. Zinc-coated steel sheets.
- c. Zinc-coated steel sheet curbs and aluminum covers.
- d. Aluminum or zinc-coated steel, or in combination.

2.15 Louvered Penthouse Gravity Ventilators: Provide units fabricated with weatherproof aluminum extrusion louvered walls with mitered or boxed corner construction; with aluminum sheet cover and 1 inch insulation adhesively applied on underside; and with extruded aluminum base and cap flashing for mounting on curbs which are not integral with units. Equip units with manual dampers designed for operation from floor directly below ventilator unit. Equip unit with bird or insect screens as directed, located internally to discourage nesting.

2.16 Prefabricated Vertical-Type Gravity Ventilators: Provide units fabricated from the following materials and including the following features, as designated:

- a. Zinc-coated steel sheet, prime painted.
- b. Aluminum sheet, prime painted.
- c. Aluminum sheet, mill finish.
- d. Equip with bird screens.
- e. Equip units with dampers, with manual operation device extended to 6 ft 6 in above floor.

2.17 Prefabricated Curbs/Equipment Supports: Comply with loading and strength requirements designated where units support other work. Coordinate dimensions with rough-in sheets or shop drawings of equipment to be supported. Fabricate of structural quality sheet steel (ASTM A 570) that has been prepared for painting, factory-primed, and painted with 2-mil thickness of baked-on synthetic enamel, after fabrication. Fabricate with welded or sealed mechanical corner joints and with cant strips and base profile coordinated with roof insulation thickness. Except as otherwise designated or required for strength, fabricate units of minimum 14-gauge metal and to minimum height of 12 inches.

2.18 Curb-Set Expansion Joints: Provide extruded aluminum expansion joint units designed for installation on raised curbs. Equip with curb cap, cap flashing, and waterproof bellows of 30- or 60-mil elastic flashing sheet of neoprene, EPDM, butyl rubber, or chlorinated polyethylene. Provide mineral-fiber insulation, concealed under curb cap between curbs, to form a waterproof, airtight, insulated, expansion joint system. Provide units in styles required for roof-to-roof, roof-to-wall, and wall-to-wall applications as required;

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complete with prefabricated corner and intersection units as required; equipped with special field-splice provisions to ensure permanent continuous waterproof installation of expansion joint system.

3.0 EXECUTION: Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures. Except as otherwise designated, install roof accessory items in accordance with construction details of NRCA Roofing and Waterproofing Manual.

3.1 Isolation: Where metal surfaces of units are to be installed in contact with noncompatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces or provide other permanent separation.

3.2 Flange Seals: Except as otherwise directed, set flanges of accessory units in a thick bed of roofing cement to form a seal.

3.3 Cap Flashing: Where cap flashing is required as component of accessory, install to provide adequate waterproof overlap with roofing or roof flashing. Seal with thick bead of mastic sealant, except where overlap is required to be left open for ventilation.



Section 07811 Plastic Skylights

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of plastic skylights. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Single Thickness Plastic Skylights shall be formed to a standard dome profile.

2.2 Double Thickness Plastic Skylights shall have an average 1-inch minimum air space between sheets formed to a standard dome profile, with a standard hermetic edge seal.

2.3 Color: Exterior sheets shall be colorless transparent sheet or bronze tinted transparent sheet, 25-30 percent light transmittance in accordance with ASTM D 1003. Interior sheets shall be colorless transparent sheet.

2.4 Glazing Frame, Dome Retainers, and Trim shall be extruded aluminum.

2.5 Curb Frame shall be extruded aluminum including cap flashing to receive roofing counterflashing.

2.5.1 Curb-Mounted Units shall be designed for installation on nominal 1-1/2 inch thick wood curbs.

2.5.2 Insulated Curb Units shall be self-flashing units with integral, self-supporting double wall formed or extruded or combination aluminum curb, 0.040-inch minimum sheet thickness enclosing minimum 1-inch glass fiberboard or equivalent insulation and with minimum 3-inch roof flanges; welded or sealed mechanical joints at corners.

2.5.3 Curb Height shall be 9 inches minimum above line of roofing or custom height as required. For decks that slope 1/4 inch per ft., tapered curb heights shall match slope to provide a level installation of domes.

2.6 Glazing Systems of neoprene, closed cell sponge neoprene, PVC gasketing, partially vulcanized butyl tape, or liquid-applied elastomeric sealant shall be provided.

2.7 Condensation Control on inside of domes shall be provided using fabricated units with integral internal gutters and nonlogging weeps.

2.8 Plastic for Skylights shall be cast acrylic with abrasion-resistant coating on exterior surface, for 2 percent maximum haze increase of 100 revolutions on 500 g Taber abraser in accordance with ASTM D 1044; 14,500 psi flexural strength; 180 F continuous service temperature or cast polycarbonate with 13,500 psi flexural strength; 240 F continuous service temperature; 16 ft-lb IZOD impact strength. Skylights shall meet AAMA 1601.1 recommendations for thickness of plastic domes to maintain 40 psf loading (for support of ice and snow only).

2.9 Bituminous Coating shall be in accordance with Fed. Spec. TT-C-494 solvent type bituminous mastic, nominally free of sulphur, compounded for 15-mil dry film thickness per coating.

2.10 Roofing Cement shall be asphaltic complying with ASTM D 2822.

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2.11 Mastic Sealant shall be polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

3.0 EXECUTION:

3.1 Installation of Skylights shall be coordinated with installation of roof deck or other substrates and with vapor barriers, roof insulation, roofing, and flashing as required to ensure that combined elements are waterproof and weathertight. Units shall be anchored securely to supporting structural substrates to withstand lateral and thermal stresses including inward and outward loading pressures.

3.2 Isolation: Where metal surfaces of units are required to be installed in contact with noncompatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation.

3.3 Flange Seals: Where required, set flanges of accessory units in a thick bed of roofing cement to form a seal.

3.4 Cap Flashing: Where cap flashing is required, install to provide adequate waterproofing overlap with roofing or roof flashing (as counter flashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

3.5 Cleaning: Clean exposed metal and plastic surfaces.



SECTION 07812 METAL-FRAMED SKYLIGHTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal-framed skylights. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Metal-Framed Skylight Panels shall be 2-1/4 inch thick double-faced panels consisting of glass fiber reinforced polymer, with interior and exterior faces bonded under controlled heat and pressure to a mechanically interlocked aluminum grid core. Exterior face shall have a special erosion protective surfacing.

2.1.1 Panel Performance Characteristics:

2.1.1.1 Color Stability from Weathering: Exterior face shall not change more than 3.5 adams units (Delta E by ASTM D 2244) as determined by an average of three samples after a minimum of outdoor exposure of 60 months in south Florida at 7 degrees facing south.

2.1.1.2 Interior Fire Resistance Characteristics shall be in accordance with ASTM E 84, with flame spread of 45 maximum and a smoke developed rating of 350 maximum. Burn extent shall be 1 inch or less by ASTM D 635.

2.1.1.3 Exterior Face Impact Resistance shall be 60 ft-lb minimum.

2.1.1.4 Coefficient of Linear Expansion shall be 1.24×10^{-5} in./in./F.

2.1.2 Laminate Adhesive shall be heat and pressure resin type. Minimum strength shall be 750 psi tensile strength by ASTM C 297 after two exposures to six cycles each of aging conditions prescribed by ASTM D 1037 and 500 psi shear strength average by ASTM D 1002 after five prescribed exposures.

2.1.3 Grid Core shall be 6063-T6 aluminum I-beams with 7/16-inch flange width, mechanically interlocked to ensure even muntin to muntin intersection.

2.1.4 Aluminum Frame shall be 6063-T5 aluminum with mill finish or corrosion-resistant finish as required with mitered and heli-arc welded corners. Clamp fasteners shall be stainless steel.

2.1.5 Panel U-Values determined by ASTM C 236 shall be as designated.

2.2 Pre-Engineered Self-Supporting Roof Systems shall be one of the following standard types as required:

2.2.1 Continuous Vaulted type shall be semi-circular.

2.2.2 Pyramid type shall be self-supporting.

2.2.3 Grid type shall be 4-foot minimum width by 16-foot maximum length as required.

2.2.4 Preformed Acrylic

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2.2.5 Structural Roof Design Loads shall be based on location of installation. Joint and structural systems shall be manufacturer's standard types or special designed systems as required. Roof systems shall be fastened to supports as recommended by the roof system manufacturer.

2.2.6 Flashings shall be aluminum, 0.040 inch thick minimum.

2.3 Optional Face Sheet Material for metal-framed skylight panels shall be 1/8-inch thick clear acrylic panels assembled in accordance with manufacturer's recommendations. Panel assemblies shall be limited to 4-foot by 4-foot modules composed of 12 inches by 24 inches or 8 inches by 20 inches nominal grid size as required.

2.4 Panels may be 1-9/16 inch thickness where required.

3.0 EXECUTION: (Section not used.)



Section 07920 Sealants

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sealants. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Oil-Based Calking Compound shall conform to ASTM C 570, Type I.

2.2 Two-Component Polyurethane Sealant shall be an elastomeric type compound conforming to ASTM C 920, Type M, Grade NS, resistance to joint movement as measured at time of application as required. The compound shall be supplied in pre-measured kit form for on-the-job mixing.

2.3 Butyl Rubber Sealant shall conform to ASTM C 1085, as required.

2.4 Single-Component Polysulfide Sealant shall be an elastomeric type compound conforming to ASTM C 920, Type S, Grade NS, resistance to joint movement as measured at time of application as required.

2.5 Polyisobutylene-Based or Isoprene-Isobutylene-Based Pressure-Sensitive Tape or Bead: When applied between two clean, dry surfaces of specified thicknesses and under conditions of continuous pressure that will be encountered in use, the sealant shall seal the joint from water and shall be weather-resistant. The material shall be nonbleeding at 160 F and below, shall withstand temperature ranges from minus 30 F to 200 F without loss of adhesion and without slipping, and shall have properties allowing the compound to move with the expansion and contraction of structure. The tape or bead shall be plain or contain a cloth or fiber insert. The tape or bead shall be supplied in rolls with a removable paper for cloth backing.

2.6 Silicone Rubber Base Sealant shall be an elastomeric type compound conforming to ASTM C 1184, resistance to joint movement as measured at time of application as required.

2.7 Preformed Strip Sealants:

2.7.1 Preformed Butylene Strip Sealant shall be foamed-urethane strip saturated with a butylene waterproofing material.

2.7.2 Preformed Asphalt Impregnated Strip shall be asphalt-impregnated foamed-polyurethane strip.

2.8 Acoustical Sealant: Synthetic rubber or polymeric-based material shall conform to the following:

2.8.1 Consistency: ASTM D 217, 190 to 310.

2.8.2 Aging: Slightly tacky at 160 F after 50 days.

2.8.3 Accelerated Aging: No significant change after 260 hours in weathermeter.

2.8.4 Nonstaining.

2.8.5 Solids Content: Approximately 80 to 90 percent.

2.8.6 No Oil Migration.

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2.9 Silicone RTV Foam Firestop Sealant shall be a medium-density two-part product supplied as liquid components. When components are thoroughly mixed in a one-to-one ratio by either weight or volume the sealant shall expand and cure to a foamed elastomer at room temperature in 1 to 3 minutes. Sealants for fire-rated penetration seal designs shall bear UL classification for 1, 2, or 3-hour fire-rating, as required to match rating of the penetrated construction.

2.10 Sealer: Sealer for use with oil-based calking compound shall be aluminum paint.

2.11 Primer: Primer for two-component polyurethane sealant, butyl rubber sealant, and single-component polysulfide sealant shall be as recommended by the sealant manufacturer. Primer shall have been tested for durability with the sealant to be used and on samples of the surfaces to be sealed.

2.12 Backstop Material: Backstop material shall be resilient urethane or polyvinyl-chloride foam, closed-cell polyethylene foam, closed-cell sponge of vinyl or rubber, polychloroprene tubes or beads, polyisobutylene extrusions, preformed neoprene, neoprene rod, oilless dry jute, or rope yard. Backstop material shall be nonabsorbent, nonstaining, and compatible with the sealant used. Tube or rod stock shall be rolled into the joint cavity. Preformed support strips for ceramic and quarry tile control joint and expansion joint work shall be polyisobutylene or polychloroprene rubber.

2.13 Bond-Preventive Materials shall be pressure-sensitive adhesive polyethylene tape, aluminum foil, or wax paper. Backstop material with bond-breaking characteristics may be installed in lieu of bond-preventive materials specified.

3.0 EXECUTION:

3.1 General Surface Preparation: The surfaces of joints to be sealed shall be dry. Oil, grease, dirt, chalk, particles of mortar, dust, loose rust, loose mill scale, and other foreign substances shall be removed from all joint surfaces to be sealed. Oil and grease shall be removed with solvent and surfaces shall be wiped with clean cloths.

3.2 Concrete and Masonry Surfaces: Where surfaces have been treated with curing compounds, oil, or other such materials, the materials shall be removed by sandblasting or wire brushing. Laitance, efflorescence, and loose mortar shall be removed from the joint cavity.

3.3 Steel Surfaces: Steel surfaces to be in contact with sealant shall be sandblasted or, if sandblasting would not be practical or would damage adjacent finish work, the metal shall be scraped and wire brushed to remove loose mill scale. Protective coatings on steel surfaces shall be removed by sandblasting or by a solvent that leaves no residue.

3.4 Aluminum Surfaces: Aluminum surfaces of windows and door frames in contact with sealants shall be cleaned of temporary protective coatings. When masking tape is used for a protective cover, the tape and any residual adhesive shall be removed just prior to applying the sealant. Solvents used to remove protective coatings shall be as recommended by the manufacturer of the aluminum work and shall be nonstaining.



DIVISION 08 DOORS & WINDOWS



SECTION 08110 HOLLOW METAL DOORS AND FRAMES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of hollow metal doors and frames. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: All hollow metal doors and frames shall comply with the following Specifications. The publications are referred to in the text by basic designation only

STEEL DOOR INSTITUTE (SDOI):

- SDOI SDI-100 Standard Steel Doors and Frames.
- SDOI SDI-106 Standard Door Type Nomenclature
- SDOI SDI-107 Hardware on Steel Doors (Reinforcement – Application)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM C 236 Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box
- ASTM C 976 Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box
- ASTM D 2863 Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- ASTM E 90 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
- ASTM E 283 Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

DOOR AND HARDWARE INSTITUTE (DHI)

- DHI A115.1G Installation Guide for Doors and Hardware

NATNL. ASSOC. OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

- NAAMM HMMA 862 Hollow Metal Manual; Section: Guide Specifications for Commercial Security Hollow Metal Doors and Frames
- NAAMM HMMA 865 Hollow Metal Manual; Section: Guide Specifications for Swinging Sound Control Hollow Metal Doors and Frames

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 80 Fire Doors and Windows
- NFPA 80A Protection of Buildings from Exterior Fire Exposures
- NFPA 101 Safety to Life from Fire in Buildings and Structures
- NFPA 252 Fire Tests of Door Assemblies

2.2 Hollow Metal Doors: Doors shall be SDI-100 standard types, styles, and sizes as designated. Doors shall be reinforced to receive builder's hardware in compliance with the requirements of ANSI A115. Provide glazing beads and stops for glass panels and sight-proof louvers as required. Louvers shall be non-



removable from the outside of exterior doors or the un-secure side of interior doors. Louvers shall be furnished with removable insect screens. Doors shall be galvanized. Doors to be field-finished shall receive a shop prime coat. A baked-on finish coat shall be provided for factory-finished doors. Exterior doors shall have top edges closed flush and sealed against water penetration.

2.3 Hollow Metal Frames: Hollow metal frames for doors, transoms, side lights, borrowed lights, and other openings shall be SDI-100 standard types, styles, and sizes as designated. Frames shall be provided with mitered corners and welded construction for exterior applications and knocked-down for field assembly for interior applications. Frames shall be reinforced to receive builder's hardware in compliance with the requirements of ANSI A115. Provide three wall anchors per jamb at hinge and strike levels. For wall conditions that do not allow the use of a floor anchor, an additional jamb anchor shall be provided. Rubber silencers shall be furnished for installation into factory predrilled holes in door frame. Adhesive applied silencers are not acceptable. Provide plaster guards or mortar boxes at hinges and strikes or elsewhere required. Finish shall be as specified for doors.

2.4 Fire-Rated Assemblies: Fire doors and frames shall be identified with recognized testing laboratory labels indicating the applicable fire rating. The constructed and installed assemblies shall comply with the requirements of NFPA 80, NFPA 80A and NFPA 252.

2.5 Soundproofing Metal Doors: Soundproofing metal doors shall be identified with recognized testing laboratory labels indicating the applicable STC soundproofing rating. Soundproofing rating shall be STC 45 or as required.

2.6 Hollow Metal Comb. Storm and Screen Doors: See Section 08390.

2.7 Access Doors and Panels Access doors in fire-rated walls and ceilings will be of equivalent fire ratings. Doors and panels shall be flush type unless otherwise indicated. Frames for access doors shall be fabricated of not lighter than 16 gauge steel with welded joints and finished with anchorage for securing into construction. Access doors shall be a minimum of 14 by 20 inches and of not lighter than 14 gauge steel, with stiffened edges, complete with attachments. Access doors shall be hinged to frame and provided with a flush face, screw driver operated latch. Exposed metal surfaces shall have a baked enamel finish or shop applied prime coat.

3.0 EXECUTION:

3.1 Frame Installation: Installation of frames shall comply with the provisions of SDI-105, Recommended Erection Instructions for Steel Frames. Fire-rated frames shall be installed in compliance with NFPA 80.

3.1.1 Frames shall be set plumb and true and fully insulated. The floor under the sill, if poured, shall be level and smooth.

3.2 Door Installation: Hollow metal doors shall be fit accurately in frames within clearances specified in SDI-100. Fire-rated doors shall be installed within clearances specified in NFPA 80.

3.3 Delivery and Storage: Doors and frames shall be stored in an upright position in accordance with DHI A115.1G.

3.4 Soundproofing Metal Door and Frame: Sound rated doors and frames shall be factory fabricated in accordance with NAAMM HMMA 865.

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SECTION 08115 ALUMINUM DOORS AND FRAMES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of hinged aluminum doors and frames. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Extrusions shall comply with ASTM B 221M, ASTM B 221, Alloy 6063-T5 or -T6, except alloy used for anodized color coatings shall be required to produce the specified color. Aluminum sheets and strips shall comply with ASTM B 209M; ASTM B 209, alloy and temper best suited for the purpose.

2.2 Glazed Aluminum Stile-And-Rail Doors and Frames shall be manufacturer's standard type. Adjacent glass enclosures, transoms, and/or sidelights shall be of the same style and design as the doors and frames.

2.2.1 Screws, Nuts, Washers, Rivets, and other miscellaneous fastening devices shall be of hardened aluminum, stainless steel, or other corrosion-resistant material.

2.2.2 Nominal Wall Thickness for Doors shall be not less than 0.125 inch except that the molding shall be not less than 0.062 inch.

2.2.3 Frames shall be extruded tube or open channel shapes not less than 0.125 inch thick for frames 1-3/4 inches by 4 inches and not less than 0.090 inch thick for frames 1-3/4 inches by 4-1/2 inches. Glazing beads, moldings, and trim shall be not less than 0.050 inch thick. Doors shall have extruded aluminum snap-in glass stops with vinyl insert.

2.3 Flush Aluminum Doors:

2.3.1 Doors shall be constructed of tubular frame members, fabricated with reinforced mechanical or welded joints. Limit frame exposure to 3/4 inch maximum width on door faces.

2.3.2 Core shall be resin-impregnated Kraft paper with honeycomb, rigid closed-cell polyurethane insulation, or rigid noncombustible mineral insulation board.

2.3.3 Faces shall be of aluminum sheet of 0.062-inch minimum thickness, mechanically interlocked with frame members or laminated to core and framing with waterproof glue to form door thickness of 1-3/4 inches.

2.3.4 Lights (glazed openings in doors) shall have aluminum moldings and stops, with inside removable stops.

2.3.5 Frames shall be of tubular and channel frame assemblies, with either welded or mechanical joints, reinforced as necessary to support required loads and door hardware.

2.4 Aluminum Combination Storm and Screen Doors: See Section 08390.



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2.5 Weather-stripping: Weather-stripping shall be door manufacturer's standard applied to stiles, heads, and bottoms of exterior doors and shall be easily replaced without special tools.

2.6 Finishes: Aluminum surfaces shall be provided with one of the following finishes. The coating shall have a minimum film thickness of 0.0004 inch with a minimum weight of 17 milligrams per square inch when tested in accordance with ASTM B 137. Coating shall be sealed with hot water.

2.6.1 Anodic Coating (0.4 mil to 0.7 mil): Aluminum Association (AA) AA-M12-C22-A31, Architectural Class II, Clear-Anodized or AA-M12-C22-A32, AA-M12-C22-A34, Architectural Class II, Color-Anodized.

2.6.2 Organic Coating (minimum 0.8 mil): AAMA 603.8, Baked-Enamel finish.

2.7 Special Finishes:

2.7.1 Anodic Coating (minimum 0.7 mil): AA-M12-C22-A41, AA-M12-C22-A42, or AA-M12-C22-A44, Architectural Class I, Color-Anodized.

2.7.2 Organic Coating (minimum 1.2 mil): AAMA 605.2, High Performance finish not less than 70 percent polyvinylidene fluoride resin by weight.

3.0 EXECUTION: Aluminum surfaces in contact with dissimilar materials shall be back-painted with alkali-resistant paint before erection. Comply with manufacturers written installation instructions. Install frames plumb and square, securely anchored to adjoining surface with fasteners recommended by manufacturer. Clean exposed surfaces promptly after installation.



SECTION 08220 WOOD DOORS AND FRAMES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood doors and frames. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Top and bottom edges of doors shall be sealed prior to shipment. Each door shall bear a stamp, brand, or other identifying mark indicating quality and construction of the door. The identifying mark, or a separate certification, shall include identification of the standard on which construction of the door is based, identity of the manufacturing plant, identification of the standard under which preservative treatment, if used, was made, and identification of the doors having a Type I glue bond.

2.2 Flush Doors: Solid core and hollow core flush doors shall conform to National Wood Window & Door Association - NWWDA I.S.1. For stain or natural finish, doors shall be of Good Grade veneer in accordance with NWWDA I.S.1. For paint finish, doors shall be Standard Grade in accordance with NWWDA I.S.5 or Sound Grade or hardboard-faced in accordance with NWWDA I.S.1. Unless otherwise required for fire safety, solid core doors shall have wood block core or mat-formed particleboard core conforming to NWWDA I.S.1. Hollow core and mat-formed particleboard solid core doors shall have lock blocks. Openings in exterior doors shall be weatherproof.

2.3 Paneled Doors shall conform to NWWDA I.S.5 or FHDA/7. For stain or natural finish, doors shall be Premium Grade in accordance with NWWDA I.S.5 or Selected Grade in accordance with FHDA/7. For paint finish, doors shall be Standard Grade in accordance with NWWDA I.S.5. When laminated panels are furnished, they shall not be less than three plies. Flat panels shall have a minimum finished panel thickness of 5/8 inch. Raised panels shall have a minimum finished panel thickness of 3/4 inch.

2.4 Fire Doors: Fire rated door assemblies shall bear the listing identification label of a nationally recognized testing laboratory qualified to perform tests of fire door assemblies in accordance with NFPA 252 and having a listing for the tested assemblies. Door assemblies shall be in accordance with NFPA 80. Listing identification on labels shall be constructed and permanently applied by a method, which results in their destruction, should they be removed.

2.5 Storm Doors – See Section 08390

2.6 Screen Doors – See Section 08390

2.7 Preservative Treatment: Exterior softwood doors shall be water-repellent preservative treated and so marked at the plant in accordance with NWWDA I.S.4.

2.8 Adhesives: Adhesives shall be in accordance with NWWDA I.S.1, using requirements for Type I doors for exterior doors and requirements for Type II doors for interior doors. Adhesive for doors to receive a natural finish shall be non-staining.

2.9 Accessories: All doors shall have cutouts, stops, beads, or other accessories as required to receive builder's hardware, glazing, louvers, or other design specialties and penetrations.



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2.10 Wood Frames: Wood frames shall be custom grade in species to match door face veneer species. For exterior door openings, frames shall be rabbeted from a solid board to provide an integral stop. For interior frames, applied stops are permitted unless otherwise indicated. Jamb sections shall be dadoed and screwed in place. Finish for frames and trim shall match the doors. Wood frames shall comply with Architectural Wood Institute's AWI-02 Section 900.

3.0 EXECUTION:

3.1 Fire Door Installation: Installation and operation characteristics of fire doors shall conform to NFPA 80, 80A, and 101.

3.2 Door and Frame Storage: Doors shall be stored in fully covered areas and protected from damage and from extremes in temperature and humidity. Doors shall be stored on supports to prevent warping or twisting, and to provide ventilation. Factory cartons or wrappers shall be kept intact until installation.

3.3 Door Installation: Doors shall be fit, hung, and trimmed as required. Door shall have a clearance of 1/8 inch at the sides and top and shall have a bottom clearance of 1/4 inch over thresholds and 1/2 inch at other locations unless otherwise directed. Cuts made on the job shall be sealed, immediately after cutting, using a clear varnish or sealer. Bottom of doors shall be undercut to allow clear door swing over carpeted areas. Vertical edges of doors, which have not been rounded or beveled at the factory, shall be eased when the doors are installed.

3.4 Wood Frame Installation: Frames shall be set plumb and square, and rigidly anchored in place securely seated to floor using finish type nails. Double wedge blocking shall be provided near the top, bottom, and mid-point of each jamb.

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SECTION 08312 ALUMINUM AND WOOD SLIDING GLASS DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sliding glass doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aluminum Sliding Glass Doors shall be complete units with safety glass, weatherstripping, hardware, and integral tracks and rollers for smooth operation and installation. Sliding glass door panels shall conform to AAMA 101. Classification of sliding glass doors shall be AAMA type SGD-A3 (monumental grade) provided for high performance (HP) designation.

2.2 Wood Sliding Glass Doors shall consist of wood frame sliding and fixed safety glass panels and casings of selected West Coast hardwood treated with water repellent and factory-primed for exposed wood exterior frame parts and door panels. Sill facing shall be extruded anodized aluminum with PVC thermal barrier. Operating door track shall have stainless steel cap. Each unit shall include door panels, head and sill, track rollers (ball-bearing sheaves), weatherstripping, glazing channels, hardware, and accessories.

2.3 Hardware shall include door pulls and keyless locking with interior locking lever on operating door panel.

2.4 Glazing in door panels shall be safety glass in compliance with ANSI Z97.1.

2.5 Screen Doors shall be manufacturer's standard furnished with sliding doors. Insect screen shall be 18 x 16 mesh aluminum wire conforming to Fed. Spec. RR-W-365 or plastic-coated fibrous glass standard with the manufacturer.

3.0 EXECUTION: Installation of door units shall be complete with all necessary anchors, inserts, and hardware.



SECTION 08316 SLIDING FIRE DOORS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of sliding fire doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:** Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.

2.1 Composite Sliding Fire Doors shall be standard steel face sheets bonded to and supported by rigid, dimensionally stable inorganic core, with steel reinforced edges. Finish shall be factory-primed.

2.2 Hollow Metal (Sheet Metal) Sliding Fire Doors shall be standard flush design with not less than 20-gauge steel faces over steel stiffeners or honeycomb core materials. Finish shall be factory-primed.

2.3 Tin-Clad Sliding Fire Doors shall be standard design wooden core construction with 14-inch by 20-inch maximum size, 30-gauge galvanized steel sheets not over 48 inches wide with venting as required by NFPA 80. Finish shall be galvanized.

2.4 Horizontal Sliding Steel Doors shall be standard design consisting of two thicknesses of 24-gauge galvanized corrugated sheet steel with an asbestos core and framed with galvanized structural steel shapes. Sheets shall be applied with exposed face corrugations vertical and wall side corrugations horizontal. Finish shall be galvanized.

2.5 Vertical Lift Sliding Steel Doors shall be standard design consisting of two thickness of 24-gauge galvanized corrugated sheet steel with an asbestos core and framed with galvanized structural steel shapes. Sheets shall be applied with exposed face corrugations vertical and wall side corrugations horizontal. Door shall be uprising on vertical tracks. Finish shall be galvanized.

2.6 Metal-Clad (Kalamein) Doors shall be standard horizontal sliding metal covered wood core or stiles and rails and insulated flush panels covered with steel. Finish shall be factory-primed.

2.7 Fire Door Assemblies shall be provided as complete units produced by one manufacturer.

2.7.1 Fire Doors, Frames, and Fire Door Hardware shall be types that comply with NFPA 80 and have been fire-tested and rated in accordance with ASTM E 152. Doors shall bear labels of the Underwriters' Laboratories, Incorporated or Factory Mutual Laboratories as evidence of rating.

2.7.2 Components for rated door assembly shall be listed in UL Building Materials Directory or Factory Mutual Approval Guide.

2.8 Finish: Galvanized finish shall be hot-dip galvanized minimum 0.6 ounce per square foot and shall not be factory-primed.

2.9 Fire Door Hardware: Hardware shall be labeled, automatic closing type sliding fire door assemblies complete with adjustable roller guides, binders, floor stops, cables, sheaves, counterweight, and fusible links. Fusible links shall be UL listed, 165 F for ordinary temperature classification.

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2.10 Accessories: The following items shall conform to the requirements of NFPA 80: Astragal, chafing strips, bumper shoes, rear binder, stay rolls, wedge, and automatic closer.

2.11 Power Operators: The operator shall be electrically operated and shall conform to NFPA 80 requirements. The powered actuating device shall be provided with a UL or FM listed releasing mechanism that will permit the required self-closing feature to function and automatically close the door in the event of fire irregardless of power failure or manual operation. Leading edge of door shall include a reversing safety device, reversing when obstruction encountered. Easily adjustable limit switches shall be provided to automatically stop the door in its full open or closed position. All door operating devices shall be suitable for the Class, Division, and Group shown and as defined in NFPA 70.

3.0 EXECUTION:

3.1 Installation: Fire doors shall be installed in accordance with NFPA 80 and manufacturers recommendations. Doors shall be securely anchored in place to a straight, plumb, and level condition without distortion.

3.2 Temporary Fire Protection: During the execution of this work, temporary fire barriers, alarms, or watchmen shall be provided to the degree of opening protection required by the local authority until the permanent work is completed and operational.



SECTION 08317 SECURITY VAULT DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of security vault doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS

2.1 VAULT DOOR AND FRAME: Design and construction of the door and frame assembly shall conform to FS AA-D-00600. The door shall be Class 5, with either right or left opening swing, Style K - key change combination lock. Vault doors shall meet the requirements for GSA labeling unless custom sizes are required.

3.0 EXECUTION

3.1 INSTALLATION: The vault door assembly shall be installed in strict compliance with the printed instructions and drawings provided by the manufacturer. After installation, the door, the locking mechanism, and the inner escape device shall be adjusted for proper operation.

3.2 DELIVERY AND STORAGE: Vault Door and frame assemblies shall be delivered to the site in a protective covering, clearly marked with manufacturers name and model. Storage shall be in a ventilated, dust free, dry, humidity controlled location allowing for inspection and meeting all manufacturers written requirements. Vault doors and frames shall be elevated off the floor and rest on non-absorptive strips or wood platforms. Damage to either door or frame that cannot be restored to like-new condition shall be replaced.



SECTION 08330 COILING (ROLLING) DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of coiling doors, coiling grilles, and coiling counter shutters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Doors shall be the manufacturer's standard type. Doors shall be spring counterbalanced, overhead coiling type; coiling grilles shall be overhead or side coiling type. Door shall be complete with all guides, tracks, hardware, fastenings, operating mechanisms, and accessories. Guides at jambs shall be set back a sufficient distance to provide a clear opening when doors are in the open position.

2.1 Roller Shaft: The roller shaft shall be constructed of steel pipe or commercial welded steel tubing of proper diameter and thickness for the size of the curtain. Deflection shall not exceed 0.03 inch per foot of span. Ends of roller shall be closed with cast-iron plugs, machined to fit the pipe. An oil-tempered, helical, counter-balancing steel spring, capable of producing sufficient torque to ensure easy operation of the door curtain from any position, shall be installed within the roller. Spring shall be easily adjustable.

2.2 Brackets: Brackets shall be fabricated of heavy cast iron or steel, designed to close the ends of roller-shaft housing and to form a supporting ring for hood. The bracket hubs or shaft plugs shall be equipped with prelubricated ball bearings, shielded or sealed.

2.3 Hoods: Each hood shall be constructed of steel not lighter than No. 24-gauge, formed to fit the contour of end bracket gear assembly and reinforced with steel rods or rolled beads at top and bottom edges. A weather baffle shall be provided at the lintel.

2.4 Gears: Gears shall be of the best grade gray iron, cast iron teeth machine-molded from machine-cut patterns, enclosed and protected by the hood and brackets.

2.5 Guides: The guides shall consist of steel shapes not less than 2-1/2 inches deep and not less than 3/16-inch thick and shall form a channel pocket of sufficient depth to retain the curtain in place under the wind pressure specified. Provisions for removal of the door shall be included in the design.

2.6 Head Track: Head track for side coiling grilles shall be of extruded aluminum and shall be provided with adjustable hangers spaced not more than 2 feet-6 inches on center.

2.7 Floor Track: Floor track for side coiling grilles shall be of extruded aluminum with replaceable bronze strips, flush with finish floor and shall provide a floor slot with a maximum width of 1/4 inch.

2.8 Bottom Rail: The curtain shall have a rolled-steel bottom bar consisting of two angles of equal weight, one on each side, fastened to the bottom of the curtain.

2.9 Endlocks and Windlocks: The ends of each slat shall have malleable iron endlocks of the manufacturer's standard design. The door shall have windlocks at the ends of each slat. Windlocks shall prevent curtain from leaving the guide as a result of deflection from wind pressure or other forces.

2.10 Weatherstripping: Doors exposed to weather shall have manufacturer's standard weatherstripping on jambs, top, and sill for weathertight installation.



2.11 Curtains:

2.11.1 Curtains for Coiling Service Doors shall be formed of insulated interlocking galvanized steel slats of No. 20- gauge minimum thickness or of flat steel interlocking slats. The curtains shall be designed to resist designated wind pressure without damage. The curtains shall roll up on a drum supported at the head of the opening on brackets and be balanced by helical springs.

2.11.2 Curtains for Coiling Grilles shall consist of 5/16-inch diameter mill finish aluminum, galvanized steel, or stainless steel rods spaced 2 inches on center to form brick pattern grille, with interlocking links to form a network of vertical and horizontal lines. Links shall be 9 inches apart.

2.12 Counter Doors (Roll-Up Shutters): Integral counter shutter/frame shall be manufacturer's standard. Curtains shall be aluminum, minimum 22-gauge galvanized steel, or stainless steel, minimum 22-gauge Type 302 No. 4 finish as designated. Frame shall be fully welded into a single assembly, complete with anchors; the jambs and head shall be minimum 16-gauge stainless steel or plain steel, and the sill shall be formed of 14-gauge stainless steel No. 4 finish.

2.13 Fire Doors: Doors, frames, hardware, and other accessories shall be in accordance with NFPA 80.

2.14 Operation:

2.14.1 Push-Up Operation: Doors shall have one lifting handle on each side of the door and shall be counter balanced to provide ease of operation while raising or lowering the curtain by hand. The maximum exertion or pull required shall not exceed 25 pounds. Doors over 7 feet high shall be provided with pull down straps or pole hooks.

2.14.2 Chain-Gear Operation: Chain shall be galvanized, endless type, operating over a sprocket and shall extend to within 3 feet of floor. Gears shall be high grade gray iron, cast from machine-cut patterns. Gear reduction shall be calculated to reduce chain pull required to not exceed 35 pounds.

2.14.3 Crank-Gear Operation: Crank shall be removable and located approximately 34 inches above the floor. Gears shall be of high grade gray iron, cast from machine-cut patterns. Gear reduction shall be calculated to reduce pressure exerted on crank to not over 35 pounds.

2.14.4 Motorized Operation: Electric power-operated doors shall be complete with electric motors, operators, controls, switches, and safety devices. Control equipment shall comply with NEMA ICS 2.

2.15 Finish:

2.15.1 Galvanizing: Curtain and bottom rail shall be hot-dipped galvanized with a zinc coating not less than 1.25 ounces total per square foot of flat metal, coating class 1.25 in accordance with ASTM A 525. Hood shall have either class 1.25 galvanizing as described above or be fabricated from electrolytic zinc-coated sheets conforming to ASTM A 591. Hardware items shall be galvanized according to ASTM A 153. Items galvanized after assembly shall comply with ASTM A 123.

2.15.2 Pretreatment: All zinc-coated surfaces shall be given a phosphate coating prior to application of prime paint.

2.15.3 Shop-Applied Prime Paint: All ferrous surfaces, including galvanized curtain, hood, and slats, but excluding wearing surfaces, shall be given one shop-applied prime coat of the manufacturer's standard primer in accordance with Fed. Spec. TT-P-86. Primer shall be compatible with the specified finish paint and shall not contain lead. Non-galvanized surfaces shall be wire brushed to bare metal prior to primer application.

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3.0 EXECUTION: Guides shall be securely attached to adjoining construction. Doors shall be installed with all anchors and inserts for brackets, tracks, hardware, and other accessories located accurately. Upon completion, door shall be weathertight and shall be lubricated and adjusted to operate freely.



SECTION 08356 FLEXIBLE DOORS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of flexible doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **General:** Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least 2 prior years. Each new door unit shall be a complete unit produced by one manufacturer including hardware, accessories, mounting, and installation components.

2.2 **Door Panels:** Door panels shall be constructed of the following materials or equal.

2.2.1 **Heavy-Duty, Abrasive-Resistant Rubber box beam extrusions,** 70 durometer, 1,500 psi tensile strength. Panel thickness shall be 1-3/4 inch. Lower door panel shall be reinforced with additional rubber extrusions bonded horizontally to the door facing on 8 in centers.

2.2.2 **Door Facings** shall be high strength fabric reinforced vinyl bonded to door frame. Facing shall not be mechanically fastened.

2.2.3 **The Vision Panels** shall be double glazed, damage resistant with optical clarity exceeding 90%. Vision Panels shall be mounted flush.

2.3 **Door Panels** shall be single- or double-acting, as required.

2.4 **Panel Frame:** Framing materials to which door panels shall be secured shall be galvanized steel, ASTM A 525, 11 gauge. Door panels shall be suspended between L-shaped rolled formed rails and stiles by removable bolt and nut connectors.

2.5 **Hardware** shall conform to the requirements of ASTM B 633, ASTM B 766, or ASTM A 123, as required.

2.5.1 **Hinges** shall be adjustable spring-type gravity self-lubricating hinges.

2.5.2 **Header and Jamb Seals** shall be door mounted PVC seals at head and jamb.

2.5.3 **Jamb Guards** shall be formed steel guards to enclose and protect lower hinge hardware and closures.

2.6 **Door Jamb** shall be constructed of steel tube, ASTM A 500, with integral wall anchors, galvanized in compliance with ASTM A 386 or stainless steel bent plate, Type 304, with integral wall anchors, as required.

2.7 **Finish:** All ferrous metal parts shall be finish-coated with polyurethane paint.

2.8 **Fire Hazard Classification:** All door panel materials shall have a fire hazard classification as determined by ASTM E 84. Provide materials with the following fire hazard classifications:

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Flame spread not more than 25.
Smoke developed not more than 50.

2.9 Vertical PVC Vinyl Strip Doors

2.9.1 Door shall consist of overlapping transparent minimum 1/8 inch thick PVC strips with pre-punched galvanized hanger brackets which mate with formed metal arms on the universal hardware.

2.9.2 Hardware shall provide full swivel action. A cover plate shall prevent accidental removal.

2.9.3 End Strips shall be orange to frame opening. Strips shall have rounded edges and overlap to form a seal.

3.0 EXECUTION: Products shall be installed per manufacturers written instruction. Products shall be firmly attached to adjacent materials. Products shall be installed level and plumb and shall be demonstrated to operate properly and as intended for a complete installation.



SECTION 08360 OVERHEAD DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of overhead doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Doors shall conform to the requirements of NAGDM 102 and shall be metal or wood overhead or vertical lift sectional type flush panel doors as indicated or required and shall be the products of a recognized manufacturer of the doors and accessories specified.

2.2 Door Assemblies shall be furnished with operating mechanisms, tracks, hardware, and all other necessary accessories required for complete installation and perfect operation.

2.3 Exterior Doors shall be metal sandwich construction filled with foamed-in-place insulation of sufficient density to attain the designated U-value or R-value. Doors shall have flexible neoprene weatherstripping at jambs, top, and sill.

2.4 Door Locks where required shall be five-pin cylinder locks and locking devices and shall be keyed as directed. Chain operators shall have standard devices for securing chain.

2.5 Fire Rated Doors: Where designated, doors, frames, hardware, and accessories shall bear the identifying label of the Underwriters' Laboratories, Inc., or a nationally recognized testing agency qualified to perform certificate programs indicating that units conform to the requirements of the Underwriters' Laboratories, Inc. Certificates of inspection shall be submitted in accordance with the requirements of NFPA 80 and 80A for fire doors exceeding the sizes for which label service is offered by Underwriters' Laboratories, Inc.

2.6 Manual Operation:

2.6.1 Push-Up Operation: Doors shall have one lifting handle on each side of the door and shall be counterbalanced to provide ease of operation while raising or lowering the curtain by hand. The maximum exertion or pull required shall not exceed 25 pounds. Doors over 7 feet high shall be provided with pull down straps or pole hooks.

2.6.2 Chain-Gear Operation: Chain shall be galvanized, endless type, operating over a sprocket and shall extend to within 3 feet of floor. Gears shall be high-grade gray iron, cast from machine-cut patterns. Gear reduction shall be calculated to reduce chain pull required to not exceed 35 pounds.

2.6.3 Crank-Gear Operation: Crank shall be removable and located approximately 34 inches above the floor. Gears shall be of high-grade gray iron, cast from machine-cut patterns. Gear reduction shall be calculated to reduce pressure exerted on the crank to not over 35 pounds.

2.7 Motorized Operation:

2.7.1 Electric Operators: Operators shall be furnished complete with electric motor, reduction gears, magnetic brake, friction clutch, emergency release for manual operation, heavy-duty roller chain, controls, limit switches, and other accessories.

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2.7.2 Motor: Motor shall be totally enclosed, constant duty type, instantly reversible, capable of moving door at not less than 3/4 foot per second and designed for high frequency operation.

2.7.3 Controls: Each door motor shall have an enclosed reversing across-the-line type magnetic starter having thermal overload protection, solenoid-operated brake, limit switches, and one or more remote-control switches as required. The starter shall conform to NEMA ICS 2. Remote-control switches shall be of the three-button type with the buttons marked "OPEN", "CLOSE", and "STOP." CLOSE buttons shall be momentary-contact type requiring constant pressure to maintain motion of the door.

2.7.4 Safety Device: The bottom edge of electrically operated doors shall have a safety device that will immediately reverse the door movement upon contact with an obstruction. The safety device shall be installed across the entire width of the door and shall not substitute for a limit switch.

2.8 Hot-Dipped Galvanized Sheet Steel Surfaces shall be finished according to the requirements of ASTM A 525, G-90. Hardware items shall be galvanized according to ASTM A 153. Items galvanized after assembly shall comply with ASTM A 123.

2.9 Shop Prime Coat of Rust-Inhibiting Paint shall comply with Fed. Spec. TT-P-86.

2.10 Tracks for Overhead Doors shall be designed to accommodate 2-inch or 3-inch diameter galvanized steel rollers. Tracks shall be fabricated of 13-gauge galvanized steel. Track shall have springs at the end of track to cushion the door at the end of the opening motion.

2.11 Track Supports shall be angle iron, galvanized, and installed with cross-bracing to form a rigid construction.

2.12 Counterbalance shall be torsion-spring type for standard counter-balancing with tempered spring wire and continuous steel shaft. Provide cast aluminum and smooth cable drums with galvanized steel lift cables. Entire counterbalance assembly shall be mounted on ball bearings.

3.0 EXECUTION: Panels and frames that are field repaired shall be cleaned sufficiently for good paint adherence then primed to prevent further deterioration. Galvanized coatings that are damaged shall be repaired by the application of a high zinc dust content paint formulated for regalvanizing welds in galvanized steels.



SECTION 08375 HANGAR DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of hangar doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

1. Size and arrangement of doors. Electrical and structural provisions for motor operators
2. Location and type of weather stripping, exterior covering, interior lining, and flashing
3. Location, spacing, size, and type of top guides and rails. Center-to-center dimension of leaves not less than 14 inches, and not less than 4 1/2 inches greater than total thickness of each leaf, including interior and exterior coverings. Where electrical trolley duct is required between leaves, provide additional 6 inches of clearance. Where cable system is required between leaves, provide additional one inch of clearance.
4. Location and type of personnel doors. Do not locate personnel doors between wheels and edge of hangar door leaf. Exact location to be determined by structural design of door leaf.
5. Location of bumpers and pulls.
6. That wheels will be required. Type, size, and number should not be shown since size and weight of doors will determine these.
7. Wind loads on both sides of doors and positive and negative deflection of top guides due to live loads.
8. Details of expansion joints in rails and top guides where building expansion joints occur.
9. Electrical service for motor operators, preferably 460 volts, 3-phase, 60-hertz, and location of power supply disconnect.
10. Festooned or draped cables or cable reels.
11. Access for installation, maintenance, and replacement of top rollers if hangar requires floating top rollers.
12. Door pockets: Minimum of 18 inches for doors up to 12 inches thick, 32 inches for doors more than 12 inches thick, should be allowed from center line of power leaf rail to farthest projection of interior wall of door pocket to accommodate operators and provide access.
13. Dimensions and details of tail doors, if required.
14. Minimum clearance of 4 inches between extreme faces of adjacent leaves in vicinity of interconnecting cables to allow sufficient space for cable sheaves and cable pickup.
15. Clearance of 4 inches between metal parts on vertical edges of leaves and between leaves and jambs which are weather-stripped.



16. Pocket depth, equal to width of widest door leaf, plus 3 feet net clearance for cable sheave brackets extending beyond trailing edge of leaves.

17. Rail drains for full length of bottom rails. This may be done with cross drains normal to the rails spaced about 20 feet o.c. emptying into continuous parallel floor drain. In cold areas it may be necessary to provide defrosting equipment below rails.

18. End of travel bumpers and bumper supports at end of door travel. Dimensions and locations should be in accordance with door manufacturer's approved drawings.

1.2 DESIGN REQUIREMENTS

1.2.1 Door Design [The hangar doors shall be designed by the manufacturer in accordance with the criteria specified.] Doors shall operate without binding, interference, or damage to weather-stripping. Doors shall fit closely and be free from warping.

1.2.2 Steel Design

1.2.3 Loading Design doors as a system to withstand an external wind load of 20 pounds per square foot (psf) or the design wind load indicated for the building, whichever is greater, and an internal wind load of not less than one-half of the external wind load. In both cases, the deflection shall not exceed the height of the door divided by 120. The deflection due to design wind load shall not exceed length divided by 120 for any door member. Fiber stresses due to combined dead load and wind load shall not exceed the recommended design stresses for the material used and type of loading sustained.

1.2.4 Connections Design connections at top and bottom guide rails to withstand an external and an internal wind load of not less than 33 psf, or the design wind load for the building, whichever is greater, and a seismic load equal to 0.5 times the weight of the door.

1.2.5 Cold-Formed Steel Members</TTL>__ Cold-formed steel main members and girts shall be not less than 1/4 inch thick.

1.5 DELIVERY, STORAGE, AND HANDLING Deliver materials which are not shop installed on the doors in original rolls, packages, containers, boxes, or crates bearing the manufacturer's name, brand, and model number. Store materials and equipment in dry locations with adequate ventilation, free from dust and water, and so as to permit access for inspection and handling. Handle doors carefully to prevent damage. Remove damaged items that cannot be restored to like-new condition and provide new items.

PART 2 PRODUCTS

2.1 HANGAR DOORS

2.1.1 Structural Steel NOTE: Specify stainless steel only if local experience indicates that steel guides will rust and interfere with door operation. Include the following paragraphs in Section 05120, "Structural Steel.

1 Top Guides and Bottom Rails for Hangar Doors:

1.1 Top Guides: Maintain nominal elevation within plus or minus 1/4 inch and nominal center-to-center dimension within plus or minus 1/8 inch, with variation from nominal no greater than 1/8 inch in 20 feet. Joints of head guides are not required to be welded, but shim and grind so adjoining guide surfaces are not out of line more than 1/16 inch. Top guide tolerances shall be met after dead load is imposed on



building frame. [Top guide surfaces which will be in contact with rollers during door operation shall be stainless steel framing or structural members.]

1.2 Hanging Head Flashing: Galvanized steel, not lighter than 18 gage, reinforced as required. Coordinate with hangar door manufacturer. Show exact location and configuration on top guide shop drawings. Top guide and head flashing system shall be shop assembled to verify accuracy of fit and fastener location, and disassembled for shipping. Install head flashing after doors are in place.

1.3 Bottom Rails: Standard A.S.C.E. or A.R.E.A. weighing not less than [_____] pounds per yard. Do not install rails until top guide system has been installed. Anchor rails as indicated. Set rails to elevation within plus or minus 1/4 inch, with variations from elevation no greater rate than 1/8 inch in 20 feet. Nominal design relationship between top guides and bottom rails to be maintained without exception. Center-to-center dimensions of bottom rails to be maintained within plus or minus 1/8 inch with variation from nominal no greater than 1/8 inch in 20 feet. Weld rail joints and grind smooth or provide with splice plate in accordance with ASCE standards AISC S335 and ASTM A 36/A 36M

2.1.2 Formed Steel AISI SG-673

2.1.3 Sheet Steel ASTM A 569/A 569M hot-rolled steel sheet, commercial quality, or ASTM A 366/A 366M cold-rolled steel sheet, commercial quality.

2.1.4 Galvanized Steel ASTM A 653/A 653M, coating designation G 90 galvanized steel sheet, commercial quality.

2.1.5 Exterior Covering NOTE: Choose one of the following options. NOTE: Designer's options. Use the first paragraph if the covering is to be provided by the hangar door manufacturer, as when new doors are required for an existing building. Use the second paragraph if the hangar doors are a part of a new building which will have preformed metal siding. Ascertain that the project specification contains the referenced section and that the section is edited to include the covering for the hangar doors. [Flat [sheet steel] [galvanized steel sheet], not lighter than 13 gage [Preformed metal siding as specified in Section 07410, "Metal Roof and Wall Panels."]

2.1.6 Interior Covering NOTE: Choose one of the following options.</NPR>_<AST>_</NTE><NTE>_<AST>_</NPR>NOTE: Designer's Options. Use the first paragraph if the covering is to be provided by the hangar door manufacturer, as when new doors are required for an existing building. Use the second paragraph if the hangar doors are a part of a new building which will have preformed metal liner panels. Ascertain that the project specification contains the referenced section and that the section is edited to include the covering for the hangar doors.[Flat [sheet steel] [galvanized steel] liner sheets, not lighter than 16 gage. [Preformed metal siding is specified in Section 07410, "Metal Roof and Wall Panels."]

2.1.7 Insulation NOTE: Choose one of the following options.</NPR>_<AST>_</NTE><NTE>_<AST>_</NPR>NOTE: Designer's Options. Use the first paragraph if the insulation is to be provided by the hangar door manufacturer, as when new doors are required for an existing building. Use the second paragraph if the hangar doors are a part of a new building which will have preformed metal siding and liner panels. Ascertain that the project specification contains the referenced section and that the section is edited to include the insulation for the hangar doors. NOTE: Specify same "U" value as required for walls of the building. Specify STC value as required to keep noise level within the hangar at not more than 85 dB

a. The value will depend upon type of aircraft, apron traffic patterns, and proximity of run-up areas. [Provide insulation that:

a. Contains no asbestos;

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- b. Is permanently secured in place behind the exterior covering; and
- c. Has a flame spread rating of 75 or less and a smoke-developed rating of 100 or less when tested in accordance with ASTM E 84. Do not use cellular plastics as exposed finish material. The doors shall have an air-to-air "U" value of not more than [_____] and a sound transmission class (STC) of not less than [_____.] [Batt or blanket insulation as specified in Section 07212, "Mineral Fiber Blanket Insulation
- 2.1.8 Hardware Provide hangar door hardware to accommodate actual dead loads plus wind loads specified. Provide top guide rollers, bottom wheels, interleaf bumpers, tractor pulls, track cleaners, and top bumpers as required for a complete and operational installation.
- 2.1.8.1 Wheel Assemblies Bottom wheels shall be of steel plate or cast steel, having a minimum tread diameter as required for the actual wheel loading. Where the height-to-width ratio of the door leaf exceeds three, wheel assemblies shall be vertically adjustable. Construct wheel assemblies to permit removal of the wheel without removing the door leaf from its position on the rail.
- a. Treads: Machine wheel treads concentric with bearing seats. The clear distance between flanges shall not exceed the width of the rail by more than 1/8 inch at the tread nor more than 1/4 inch at the edge of the flange. Machine internal bearing seats accurately for a press fit. Heat treat wheels 18 inches or greater in diameter to obtain a rim hardness of 320 Brinell.
- b. Wheel bearings: Provide tapered roller or spherical bearings, either internal or cartridge type, arranged so that both horizontal and vertical loads shall be transferred to the rail only through the bearing. Bearings shall be tightly sealed and equipped with high-pressure grease fittings.
- 2.1.8.2 Fixed Pancake Top Guide Rollers NOTE: Specify stainless steel rollers only if local experience indicates that steel rollers will rust and interfere with door operation. Horizontal type; each with single or double steel rollers of a suitable diameter and thickness for satisfactory performance under the designated load conditions and top guide system used. Provide permanently lubricated bearings. [Rollers shall be stainless steel.]
- 2.1.8.3 Vertical Floating Head Top Guide Rollers Provide top-roller assemblies to:
- a. Move up and down within the specified live load positive and negative deflection of the roof in the vicinity of the door opening;
- b. Allow easy removal through the top of the guide system; and
- c. Include both horizontal and vertical rollers built into a frame which is connected in such a manner as to transmit the specified wind loads from the door to the hangar structure and to prevent disengagement of the door from the top guide. [Rollers shall be stainless steel.]
- 2.1.9 Personnel Doors NOTE: Personnel doors, their frames, and hardware shall be specified in the respective sections of the project specification. Provide self closing door hardware. The hangar door manufacturer shall provide structural frames and electrical interlock for personnel doors. <SPT =2.1.9.1>
- 2.1.9.1 Doors and Frames Specified in Section 08110, "Steel Doors and Frames."
- 2.1.9.2 Hardware for Personnel Doors Specified in Section 08710, "Door Hardware."
- 2.1.9.3 Electrical Interlock Provide each personnel door with an electrical interlock switch to prevent motor operation of the leaf or group in which it is located when the personnel door is open. Provide an



identified indicator light at each door leaf control station indicating when the personnel door is in the open position.

2.1.10 Weather Stripping Provide adjustable and readily replaceable material. Provide [as indicated] [on vertical edges, sills, and heads] to afford a weathertight installation.

2.1.10.1 Neoprene Use flap-type, two-ply, cloth-inserted neoprene or extruded, double flap, single or dual opposed solid neoprene material on vertical edges and sills. The two-ply material shall have a minimum thickness of 1/8 inch and shall be retained continuously for its full length and secured with rust-resistant fasteners 12 inches o.c. Extruded weather stripping with heavy center section shall be attached at 12 inches o.c., but continuous bar may be omitted. Clearance between metal parts on vertical edges of leaves and between leaves and jambs which are to be weather-stripped shall be as indicated.

2.1.10.2 Metallic Form head weather stripping material between each leaf and the top guide system of not lighter than 18 gage galvanized sheet steel or flap-type, cloth-inserted neoprene, as indicated.

2.1.10.3 Hanging Head Flashing NOTE: Delete paragraph if hangar doors have vertical floating top rollers. Hanging head flashing must be designed and fabricated to accommodate total positive and negative deflection of roof in vicinity of door opening. Stiffened hanging head flashing shall be designed to fasten to top guides; material shall be 13 gage galvanized steel stiffened by supporting frames to adequately withstand specified wind loads without permanent deformation. Material must be furnished and installed by same trade that furnishes top guide system, so preparation for fasteners can be done at fabrication shop. However, to minimize possibility of damage to the material, installation must be done after doors are in final position on rails. Provide with the top guide system specified in Section 05120, "Structural Steel." Provide cloth-inserted neoprene weathering fastened to top of door leaves to engage the head flashing when doors are closed.

2.1.11 Fasteners Either zinc-coated or cadmium-plated steel.

2.1.12 Sealant Single-component or multicomponent elastomeric type conforming to ASTM C 920, Type S or M, Grade NS, Class 12.5, Use NT. Provide a sealant that has been tested on the types of substrate to which it will be applied.

2.1.13 Primer Red iron oxide, zinc oxide type, SSPC Paint 25.

2.1.14 Starters Provide magnetic reversing starters in NEMA ICS 1, Type 12 enclosures equipped with access door-controlled, fused safety disconnect switches. Starters shall be factory wired with overload and under-voltage protection, mechanical and electrical interlocks, auxiliary contacts, relays and timing devices as required, control circuit transformers, and a numbered terminal strip. The control circuit transformer shall reduce the voltage in the control circuits to 115 volts or less, and shall conform to UL 506

2.1.15 Electrical Provide conduit, wire, flexible cables, boxes, devices, and accessories [, and install trolley duct,] under Section 16402, "Interior Distribution System." If permanent electrical power is not available when door installation is complete, provide temporary power under Section 16402, "Interior Distribution System," for testing and adjusting the doors.

2.2 FABRICATION

2.2.1 Doors

2.2.1.1 Frames and Framing Door leaves shall be of welded or bolted construction. Joints shall develop 100 percent of the strength of the framing members. Vertical members shall be continuous throughout the height of the door. When required, prepare splices to facilitate field assembly in accordance with standard

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practice. Frames and framing members shall be true to dimensions and square in all directions; no leaf shall be bowed, warped, or out of line in the vertical or horizontal plane of the door opening by more than 1/8 inch in 20 feet. Provide diagonal bracing so that the completed leaf assembly will be braced to withstand shipping, assembly, and operational loads. Exposed welds and welds which interfere with the installation of various parts such as cover sheets shall be ground smooth.

2.2.1.2 Exterior Covering and Interior Liner Sheets</TTL>__ Flat sheets shall be fastened to the frame either by edge welding, plug welding, or threaded fasteners 12 inches o.c. Where flat sheets are attached as either exterior covering or interior liner sheets, the clear unsupported area shall not exceed 25 square feet. Make edges of exterior sheets weathertight with sealant

2.2.2 Locking Devices Do not provide locking devices on motor-operated hangar doors.

2.2.3 Tractor Pulls Provide tractor pulls so that leaves can be towed by a tractor or similar equipment in the event of power failure.

2.2.4 Track Cleaners Provide a device to clear debris from the rail head and wheel flange grooves as the leaf is moved.

2.2.5 Insulation Secure insulation to doors with clips, studs, or adhesive. Protect insulation within 8 feet of floor with steel liner sheets secured to framing 12 inches o.c. at edges with zinc-coated, self-tapping screws.

2.2.6 Cable System for Group Doors The minimum size for the cable which interconnects the leaves shall be 3/8 inch; the cables shall be improved plow steel with lubricated hemp centers or wire rope cores. Sheaves over which the cables operate shall have a diameter of at least 18 cable diameters and either sealed ball-or roller-type bearings or graphite bronze bearings of a sufficient capacity for the operating loads. Grease fittings shall be provided for the sheave bearings unless permanently lubricated bearings are used.

2.3 OPERATION</TTL>_<NTE>_<AST>_<NPR>NOTE: Type of operation will depend upon use and configuration of the hangar. Delete inapplicable paragraphs.

2.3.1 Hangar Door Types</TTL>__ Hangar doors shall be [unidirectional] [biparting] [as indicated.]. __

2.3.1.1 Individually Operated Doors</TTL>__ Each door leaf shall have a separate, traction-drive operating unit driving one or more of the bottom wheels. Each leaf shall have a motor-mounted, spring-set, solenoid-released motor brake. Each leaf shall move independently of the other leaves. Provide doors that require operating personnel to walk with the leaf as it moves.

2.3.1.2 Floating Group Doors</TTL>_<NTE>_<AST>_<NPR>NOTE: Consider visual appearance when using the anchored or wraparound cable system. The cables used to move the door leaves are exposed to view.</NPR>_<AST>_<NTE>_ Each group of three or more leaves shall have a separate, traction-drive operating unit located in each end leaf of the floating group doors, which drives one or more wheels of the end leaf, and a wraparound cable system on the intermediate leaves coupled to each end leaf; or an interleaf pickup system. Movement of either end leaf shall allow stacking and unstacking of the other end and shall also allow intermediate leaves to move in concert. The group of leaves traveling abreast may then be positioned as desired in the opening. Provide necessary cables, fittings, cable sheaves, housings, guards, pickups, brackets, anchors, and miscellaneous hardware.

2.3.1.3 Anchored Group Doors</TTL>__ Each group of leaves shall have a traction-drive operating unit located in the lead leaf of the group and driving one or more wheels of the lead leaf. [The leaves in each group shall start to move at the same time and arrive at their fully open or fully closed positions



simultaneously]. Provide necessary cables, fittings, sheaves, housings, guards, pickups, brackets, anchors, and miscellaneous hardware.

2.3.2 Operating Units</TTL>_<NTE>_<AST>_<NPR>NOTE: Delete "lead" for individually operated doors. Leave in for group doors.</NPR>_<AST>_<NTE>_ Each operating unit shall move its [lead] leaf at a speed of approximately 60 feet per minute at zero wind load conditions and to be operable up to and including a maximum wind load of 8 pounds per square foot</ENG>. The operating units shall consist of either a separate motor and gear reducer or a gearhead motor, high-speed shaft brake, and necessary roller chains and sprockets. The systems shall be provided with overload protection for the drive units and a means for emergency tractor towing operation. __<ITM INDENT=-0.33>a. Motors shall be single speed, squirrel-cage type of sufficient size to operate the leaves under zero wind load conditions at not more than 75 percent of their rated capacity.</ITM>__<ITM INDENT=-0.33>b. Gear reduction units shall allow a reversal of effort through the gears without damage to the units.</ITM>__<ITM INDENT=-0.33>c. Operating mechanisms shall be covered on the interior of the leaf by a hinged 16 gage flat steel cover.

2.3.3 Braking Systems</TTL>__ Braking systems shall be designed to ensure stoppage of the leaves under normal, dry rail conditions within the safety edge overtravel limit. The braking systems shall be either a magnetic, spring-set, solenoid-released brake or hydraulic type. Provide a hand release to release the brake when it becomes necessary to move the leaf with an outside force. The hand release shall be an automatic reset type so that the brake will be operable during subsequent electrical operation of the door.

2.3.4 Controls</TTL>__ Doors shall be controlled by constant pressure push buttons mounted on the door leaves. Removing pressure from the button shall stop the movement of the leaves. The control equipment shall conform to <RID>NEMA ICS 1</RID> and <RID>NEMA ICS 2</RID>. Interior push buttons shall be mushroom head type, mounted in heavy-duty, oil-tight enclosures conforming to <RID>NEMA ICS 6</RID>, Type 13, except that enclosure for reversing starter with disconnect switch shall be Type 1 or Type 12. [Exterior push buttons shall be in watertight enclosures conforming to <RID>NEMA ICS 6</RID>, Type 4.]

2.3.4.1 Push Buttons for Individually Operated Doors</TTL>__ The leaves mounted on the outer rails shall have the push buttons mounted on the exterior face; the leaves on the inner rails shall have the buttons mounted on the interior face; and the leaves on the middle rails shall have the buttons mounted on both the exterior and interior faces. The button at each edge of a leaf shall allow the leaf to travel with that edge as the leading edge only. The controls shall not be reversible. Location of each control button shall be as indicated.

2.3.4.2 Push Buttons for Floating Group Doors</TTL>__ Each group shall be controlled by push button stations mounted at each end of each group of leaves. Stations shall contain one button for stacking the leaves, one button for unstacking the leaves, and a third button for moving the leaves in a group. The leaves mounted on the outer rail shall have the push buttons mounted on the exterior face. The leaves mounted on the inner rail shall have the push buttons mounted on the interior face. Location of each control station shall be shown on manufacturer's drawings.

2.3.4.3 Push Buttons for Anchored Group Doors</TTL>__ Each group shall be controlled by a two-button push button station marked "OPEN" and "CLOSE" mounted near the inside leading edge of the lead leaf.

2.3.5 Limit Switches</TTL>__ Provide limit switches to prevent overtravel and bumping. Safety edges shall not be used as limit switches.

2.3.5.1 Plunger-Type Limit Switches</TTL>__ Provide [at each edge of each leaf of individually operated doors] [at each end of each group of floating group doors]. Limit switches shall be actuated by 3/4 inch diameter stainless steel rods of adjustable length, guided at both ends with nonmetallic bearings

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and with tape-type constant force springs to return the rods to their normal position after actuation. The actuating rods shall have sufficient overtravel so that the leaves cannot bump one another or any portion of the building or be damaged when being towed. Each rod shall be adjustable 6 inches plus or minus from its normal position. __</SPT =2.3.5.1><SPT =2.3.5.2>

2.3.5.2 Lever Arm Type Limit Switches</TTL>__ Provide for anchored group doors to stop the travel of each group in the fully open and fully closed positions. The limit switches shall be: __<ITM INDENT=-0.33>a. Positive acting, snap action, lever arm type with actuating cams designed with sufficient overtravel to permit the group to come to a complete stop without overtraveling the limit switches.</ITM>__<ITM INDENT=-0.33>b. Mounted on the leaves, and the actuating cams mounted either on the top guides or on adjacent door leaves.</ITM>__</SPT =2.3.5.2></SPT =2.3.5><SPT =2.3.6>

2.3.6 Safety Edges</TTL>_<NTE>_<&AST>_<NPR>NOTE: Edit to suit type of door operation required.</NPR>_<&AST>_<NTE>_ Provide fail-safe safety edges on [each edge of each leaf of individually operated doors] [each leading and trailing edge of drive leaves for floating group doors] [the leading edge of the drive leaf of anchored group doors] from one inch above the floor to the top of the door leaf. For leaves 12 inches thick or less, provide a single run of safety edge. For leaves over 12 inches thick, provide a double run of safety edge spaced to provide the maximum degree of safety in stopping the leaves. __<ITM INDENT=-0.33>a. Design: Provide safety edges to provide a minimum of 3 1/2 inches of over-travel after actuation until solid resistance is met. Safety edges shall be electric.</ITM>__<ITM INDENT=-0.33>b. Operation: Actuation of the safety edge on leading edge of a group of leaves shall stop movement of the group. Actuation of a safety edge shall lock out the motor control in the direction of travel until reset, but shall permit the door to be reversed away from the obstruction which tripped the safety edge. Safety edges shall be alive only when doors are moving. Safety edges shall be reset by moving doors away from the obstruction. The lower portion of the safety edges to a height of approximately 5 feet shall be independently removable for convenience in servicing or repair. The remainder of the edge may be in one piece up to a maximum of 20 feet.

2.3.6.1 Electrical Safety Edges</TTL>__ Connect the safety edge in series with the necessary relays and resistors to make the system complete. The service shall be not more than 24 volts and the circuit shall be normally energized so that the malfunction of any of the component parts will make the door inoperative. __</SPT =2.3.6.1></SPT =2.3.6><SPT =2.3.7>

2.3.7 Warning Device</TTL>__ Provide a clearly audible signal on each [individually operated leaf] [group of leaves]. The warning device shall:

- a. Operate when the push button is actuated for movement of the door in either direction;
- b. Sound 5 seconds before the door moves, and while the door is moving; and
- c. Consist of not less than a 6 inch diameter bell or equivalent decibel-rated horn, loud enough to be heard in the hangar and on the apron.

2.3.8 Emergency Operation</TTL>__ Hangar doors[, including tail doors,] shall be constructed and equipped so that they can be operated-manually or by tractors from the hangar floor in case of power failure. Manual operation of hangar doors shall be designed to avoid damage to safety edges. __</SPT =2.3.8><SPT =2.3.9>

2.3.9 Electrical Work</TTL>_<NTE>_<&AST>_<NPR>NOTE: Insert the following into Section 16402, "Interior Distribution System."</NPR>__<NPR>"HANGAR DOORS: Provide field wiring [and trolley duct installation] for hangar doors under this section in accordance with door manufacturer's written instructions, drawings and diagrams, and NFPA 70 and NEMA ICS 1. Provide conduit, wiring, boxes,



cables, devices, and accessories under this section. If permanent electrical power is not available when door installation is complete, provide temporary power for testing and adjusting doors for proper operation. [Trolley ducts will be furnished by door manufacturer and installed under this section in accordance with door manufacturer's approved drawings.] [Draped or festooned cables or cable reels shall be provided under this section. Cable shall be extra-flexible Type SD, and shall have a spring-loaded, automatic take-up reel, coil-cord, draped cable, or equivalent device.] [as indicated.]"</NPR>_<&AST>_</NTE>_

The door manufacturer shall provide the proper electrical equipment and controls built in accordance with the latest NEMA standards. Equipment, control circuits, and safety edge circuits shall conform to NFPA 70. Where located 18 inches or less above the floor, they shall be explosion-proof as defined in NFPA 70, Article 513. Manual or automatic control devices necessary for motor operation of the doors shall be provided, including push button stations, limit switches, combination fused disconnect switches and magnetic reversing starters, control circuit transformers, relays, timing devices, warning devices, and trolley ducts with collectors or trolleys.

2.3.9.1 Trolley Ducts</TTL>_</NTE>_<&AST>_</NPR>NOTE: Individually motor-operated doors and floating group doors should always be provided with a trolley duct system to bring power to door leaves. Anchored group doors, if opening width is not excessive, can be equipped with draped or festooned cables or cable reels. If opening width exceeds 120 feet, a trolley duct system should be used. Trolley duct systems should be specified to be furnished by door manufacturer but installed under Section 16402, "Interior Distribution System" in accordance with door manufacturer's drawings. Only door manufacturer is properly qualified to know where to place trolley duct so there is adequate clearance and noninterference. Provide one or more runs of trolley duct as required for the door system provided. Ducts shall have solid copper conductors in a protective steel [or polyvinyl chloride] housing. Locate ducts as shown on door manufacturer's drawings. Provide adequate clearances in the top guide system for the ducts

a. Each run shall consist of the required number of sections of straight track, a section of dropout track, feed boxes, end caps, couplings, hangers, and other accessories to make the system complete and workable. Provide expansion tracks in each run where the system crosses a building expansion joint in the roof construction and in the top guides

b. Furnish one track-supported tandem trolley or self-supporting collector for each [individually motor-operated door] [group of doors], complete with spring-loaded brush contacts. Provide trolley pulling brackets and corrosion-protected chains attached from each side of the pulling bracket to each side of the tandem trolley or support bracket for self-supporting collectors

2.3.9.2 Electrical Cables NOTE: Draped or festooned cables and cable reels should be specified to be furnished and installed under Section 16402, "Interior Distribution System." Flexible cables or cable reels shall be provided under Section 16402, "Interior Distribution System," in accordance with the door manufacturer's approved drawings and wiring diagrams.

PART 3 EXECUTION

3.1 PROTECTIVE COATINGS

After fabrication, clean metal surfaces in accordance with SSPC SP 6 (Commercial Blast).

3.1.2 Shop Painting After cleaning, coat steel surfaces other than machine-finished parts with priming paint. Keep paint off of finished bearing surfaces. Before assembly, prime surfaces that will be inaccessible after assembly. Handle painted materials with care to avoid scraping or breaking the protective film. Make match-marks on painted surfaces only.

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3.2 ERECTION Assemble doors and accessories in accordance with approved shop drawings. Do not erect doors until the work of other trades in preparing the opening has been completed, the hangar roof is under full dead load, and the top guide and rail systems are within specified tolerances. After completing erection and before starting field painting, clean interior and exterior door surfaces. Clean abraded surfaces, field welds, and field bolts; and coat with priming paint. Field painting as specified in Section 09900, "Paints and Coatings."

3.3 FIELD QUALITY CONTROL

3.3.1 Manufacturer's Field Services Provide an authorized representative of the door manufacturer to supervise erection of doors.

3.3.2 Tests Immediately after the door installation is complete, the door manufacturer or his representative shall perform a complete operating test in the presence of the Contracting Officer. Correct defects disclosed by the test. Retest the doors and adjust them until the entire installation is fully operational and acceptable to the Contracting Officer



SECTION 08379 WOOD SAFETY GLASS DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood safety glass doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Safety Glass shall be clear, heat-strengthened, and fully tempered plate or float glass in compliance with the requirements of ANSI Z97.1, 16 CFR 1201, and the Safety Glazing Certification Council. Provide tinted or reflective tempered safety glass as required.

2.2 Wood for Door Frame, Stiles, and Rails shall be Douglas fir, redwood, cedar or select hardwood. Exposed wood surfaces shall be sanded, cleaned, and factory-primed ready for final finish coat. PVC clad wood safety glass doors shall be provided as required.

2.3 Provide Factory-Primed and Finish-Painted Wood Surfaces when no other field painting is required.

2.4 Hardware shall be manufacturer's standard style and designed for the door swing, door size, glass thickness, door weight, and area for access and egress. Hardware fittings of door shall match the hardware finish of the adjacent area.

2.4.1 Provide Heavy-Duty Hardware in heavy pedestrian or high traffic areas.

2.4.2 Door Push-Pull Sets or Handles and Hardware Accessories shall be manufacturer's standard design. Provide floor closer with selective hold-open feature. Locks and deadbolts shall be keyed from both sides of bottom door rail or strike side of door stile.

2.4.3 Where Aluminum Hardware Finish is required, aluminum finish shall be anodized.

2.4.4 Panic Exit Devices or Electric Strikes shall be furnished where required.

3.0 EXECUTION: (Section not used.)

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SECTION 08385 SOUND RETARDANT DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of material for sound retardant doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General:

2.1.1 Each Door Location shall be complete with frame and integral acoustical type hardware accessories, mounting, and installation components.

2.1.2 Door Unit shall conform to ASTM E 90 to achieve the required Sound Transmission Classification (STC) and certified according to ASTM E 413.

2.2 Steel Sound Retardant Doors: Door assembly shall conform to SDI-100 and ANSI A115.

2.3 Wood Sound Retardant Doors: Door assembly shall conform to Architectural Woodwork Institute AWI-01 Custom Grade and ASTM E 90.

2.4 Perimeter Seals and Door Bottoms Seal material for heads, jambs, and door bottoms shall be a closed-cell, expanded cellular rubber conforming to ASTM D 1056, Type S, Grade SBE-42 or SCE-42.

3.0 EXECUTION: Door units shall be installed complete with all necessary anchors and inserts, hardware, and other accessories. Upon completion of installation, doors shall be free from warp, twist, or distortion. Perimeter seals and automatic door-bottom seals shall be installed and adjusted to provide positive compression contact with the entire sealing surface with no gaps, openings, or breaks. Hinges or hardware shall not distort or pinch the perimeter seal during operation of the door.



SECTION 08386 ALUMINUM SAFETY GLASS DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of aluminum safety glass doors. Products shall match existing materials and/or as shall be directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aluminum Safety Glass Doors shall be manufacturer's standard and shall comply with the requirements of ANSI Z97.1, Fed. Spec. DD-G-1403, and the Safety Glazing Certification Council (SGCC) standards for heat strengthened and fully tempered safety glass.

2.2 Safety Glass Doors shall have clear tempered safety glass and shall be manufacturer's stock design in standard sizes. Glazing for door tolerance shall be dimension plus 1/16 inch, minus 1/8 inch. All door glazing shall be set in aluminum frames of sufficient strength to withstand heavy duty use.

2.3 Finish for Aluminum Frames shall be anodized AA-C22A 41RIX or AA-M21C22A 42RIX, as required, minimum 0.7 mil thickness with clear methacrylate lacquer coating, minimum 0.5 mil thick.

2.4 Hardware shall be manufacturer's standard finish to match aluminum frame door stiles and rails. Push-pull set shall be manufacturer's stock design flat plate units, approximately 6 inches by 10 inches, engraved with "push" and "pull." Custom designed push-pull (handles) set and required fittings shall be provided where required.

2.4.1 Lockset with Deadbolt in lower rail engaging cut-out in threshold shall be keyed from both sides. Where required, provide a lockset with deadbolt in lock side of glass door, keyed from both sides.

2.4.2 For Pairs of Doors, provide a deadbolt in lower rail of each door that will engage a cut-out in the threshold and key from both sides.

2.4.3 Where Floor Recessed Checking Floor Hinges are required, provide top pivot hardware. Where overhead closers are required, provide bottom pivot hardware. Provide checking floor hinges with sealed floor box, finished cover plate, separate adjustment screws for checking speed, and hold open device.

2.5 Threshold shall be manufacturer's standard, finished to match door rails and sized to suit door opening.

2.6 Anchorages and Fastenings shall be manufacturer's standard concealed. Finish heads of exposed fasteners shall match finish of adjacent metal surfaces.

2.7 Locate and Provide Holes and Cutouts to receive hardware before tempering safety glass. Do not permit any cutting, drilling, or other glass alterations after tempering operation.

3.0 EXECUTION: (Section not used.)

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SECTION 08390 SCREEN AND STORM DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal, aluminum or wood screen and storm doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 The Manufacturer shall be a recognized producer of screen and storm doors. All work performed shall meet the requirements of local codes and regulations.

2.3 Hollow Metal Combination Storm and Screen Doors: Doors shall be flush foam insulated panels capable of receiving removable screen or glass inserts. Doors shall be not less than 20-gauge steel, minimum 1-3/8 inch thick, and minimum 3-1/2 inch stiles and rails. Screen insert shall be aluminum wire-cloth or plastic coated glass fiber screening. Glazing shall be 1/4 inch thickness.

2.4 Aluminum Combination Storm and Screen Doors: Doors shall consist of a master frame with two intermediate horizontal rails, one fixed metal panel, and two glass and two screen removable insert panels. Master frame shall be a minimum 1 inch thick and stiles shall be a minimum 2-3/4 inches wide. Doors shall have a mill finish.

2.5 Wood Combination Storm and Screen Doors: Doors shall be manufacturer's standard solid core door not less than 1-3/4 inches thick with 5-inch minimum stiles and top rail. Upper panel shall be arranged to receive removable glass and screen inserts. Screen insert shall be aluminum wire-cloth or plastic coated glass fiber screening. Glazing shall be 1/4 inch thickness.

2.6 Door Accessories: Doors shall be reinforced to receive, and shall be provided with a spring-loaded chain door stop, a latch with a night lock, a hydraulic closer, 1-1/2 pair butts, door pull, and an adjustable sweep with a vinyl seal. Doors shall be finished as specified for hollow metal doors.

3.0 EXECUTION: Doors shall be securely attached to adjacent materials. Doors shall be plumb and true without warping.



SECTION 08410 ENTRANCES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of entrance assemblies. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Entrance shall be a complete unit produced by one manufacturer recognized as producer of glass entrance panels with glass doors, weather-stripping, and hardware on operating door panel.

2.2 Extrusions for Door Construction shall be AA 6063-T5 alloy with clear anodized 204-R1-A1 finish and 22,000 psi ultimate tensile strength. Main member extrusions shall be not less than 0.125 inch in wall thickness.

2.3 Aluminum Sheet Material for Door Construction shall be plain flat sheet for exposed faces of flush and panel doors of not less than 0.062-inch thickness.

2.4 Fasteners shall be aluminum, stainless steel, or other non-corrosive metal fasteners compatible with the framing material. Exposed fasteners shall be Phillips flat-head screws matching fastened material.

2.5 Steel Reinforcement and Brackets shall be manufacturer's special formed units with 2.0 ounce hot-dip zinc coating complying with ASTM A 153, applied after fabrication.

2.6 Frames shall be extruded tube sections manufactured from AA 6063-T5 alloy with clear anodized 204-R1-A1 finish, not less than 0.125 inch in thickness. Frames to receive fixed glass shall have removable glass stops and beads.

2.7 Door shall be fabricated from extruded aluminum seamless tubular shapes. Top and bottom rails shall be welded to stiles with corner reinforcement. Joints shall be milled to hairline watertight fit. Welding shall be done on concealed surfaces and shall not blemish exposed surfaces. Door shall have extruded aluminum snap-in type glass stop with integral vinyl glazing insert.

2.8 Weather-stripping shall be manufacturer's standard compression type neoprene gasket. Weather-stripping shall be easily replaced without special tools. Weather-stripping at meeting rails of pairs of doors 08412-shall be adjustable. Weather-stripping shall be applied to stiles, heads, and bottoms of doors.

2.9 Clear Glass shall be ASTM C 1048, fully tempered, un-coated, transparent, Class 1 in required thicknesses. Products shall have been tested according to ASTM C1048 and for impact strength in accordance with CPSC 16 CFR, Part 1201 for Category II materials.

2.10 Hardware Shall include but not be limited to; Push-Pull set, active and inactive leaf locksets, exit devices, and thresholds for a complete functional installation.

3.0 EXECUTION: Entrance assemblies shall be installed or repaired by the manufacturer or an authorized representative.



SECTION 08471 REVOLVING DOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of revolving doors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Door units shall be standard manufacturers products fabricated from extruded aluminum tube sections of AA 6063-T5 alloy, clear 204-RI-A1 anodized finish. Door framing members shall be 0.375-inch minimum wall thickness. Enclosure framing members shall be 0.125-inch minimum wall thickness. Snap-in type glass stops shall be minimum 0.050-inch thickness.

2.1 Fabricate Assembly with welded and mechanical construction; concealed, reinforced joints; and corners with flush hairline joints.

2.2 Provide Weatherstripping at stiles, head, and bottom of door wings.

2.3 Door Wings shall be arranged to collapse and fold to the emergency exit position when a pressure of not less than 100 pounds nor more than 140 pounds is applied to the outer door stile at the push bar height of 3 feet, 10 inches. No visible external braces or collapsing plates will be permitted.

2.4 Door Unit shall be provided with a mechanical floor-mounted speed control sealed unit to control the revolving door up to a maximum of 12 revolutions per minute. Door shall be provided with wall push plate switch for slowed operation and control mat safety device. Unit shall allow for manual operation when power is off.

2.5 All Work Performed shall meet the requirements of local codes and regulations.

2.6 Safety Glass shall be category II materials complying with testing requirements in 16 CFR 1201 and in ANSI Z97.1.

3.0 EXECUTION: Doors shall be installed or repaired by the manufacturer or an authorized representative and adjusted for smooth and even rotation.



SECTION 08512 METAL WINDOWS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel, stainless steel, and bronze windows. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fixed Windows, Hopper Vent: Window units shall comply with SWI-01, The Specifier's Guide to Steel Windows, for standard intermediate windows with bottom hinged, swing-in type ventilator hopper sash. Bottom rails of ventilators shall have an outside drip. Hardware shall be manufacturer's standard type for each window. Ventilator shall have one pair of hinges or pivots, two stay arms, and a cam-type lever handle latch. Sash and hardware shall be designed to permit easy removal of sash from inside the building.

2.2 Fixed Windows: Fixed windows shall comply with the requirements of SWI-01, for standard intermediate windows.

2.3 Projected Windows: Projected windows shall comply with the requirements of SWI-01, for commercial projected windows, with project-out type ventilators, top-hinged.

2.4 Continuous Top-Hinged Windows: Continuous windows shall comply with SWI-01 continuous type with manual operation.

2.5 Casement Windows: Casement windows shall comply with SWI-01, for standard intermediate windows. Hardware for operative sash shall provide for cleaning of both sides of the sash from the inside. Operating devices shall include underscreen type rotary operators of the worm-gear type with adjustable operating arms. A continuous drip molding shall be provided above operable sash. Abutting units or combination units shall have manufacturer's stock standard mullion.

2.6 Awning Windows: Awning windows shall comply with the SWI-01, for architectural awning intermediate type frame and ventilator members. Ventilators in same frame shall operate in unison. Hardware for operative sash shall provide for cleaning of both sides of the sash from the inside. Operating devices shall include underscreen type rotary operators of the worm-gear type, with adjustable operating arms. The operator shall securely close the ventilators without using additional locking devices. Ventilators shall be designed to close and be weathertight to adjoining ventilators or frame. Window frame shall be designed with rebate to receive screens.

2.7 Reversible Windows: Reversible horizontal pivoted windows shall comply with SWI-01, for commercial type.

2.8 Hinged Emergency Windows: Hinged emergency type windows shall comply with SWI Recommended Specifications for Steel Windows, for commercial type, with manual operation side- or hinged for swing-out emergency exit, pivots or hinges for 90 degrees swing-out. Window shall be equipped with push-release type lever operator on window latch, complying with the requirements of local regulations for "panic hardware".

2.9 Double/Single Hung Windows: Double and single hung windows shall comply with SWI Recommended Specifications for steel windows for commercial type. Two spiral type removable sash balances shall be provided for each sash. Balances shall be adjustable without removing sash from frame

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and without use of special tools. Each window 40 inches wide or less shall be provided with one sweep sash lock. Each window over 40 inches wide shall be provided with two sweep sash locks. Lower sash shall have one continuous integral lift at the bottom of the sash. The upper sash shall have a continuous integral pull down member on the meeting rail.

2.10 Operating Hardware: Hardware shall be provided for all operable, ventilating sash units of manufacturer's standard for the function of each individual window type specified. All operable sash shall have a latch or locking device. Hardware shall be securely attached to the window with noncorrosive bolts or machine screws.

2.11 Miscellaneous Hardware shall comply with ANSI A156.16. All metal hardware for stainless steel windows shall be non-corrodible. All hardware items for bronze windows shall match window finish.

2.12 Screens: Insect screens shall be full size of the operable unit. Screens shall comply with SWI-01 and shall have removable splines of steel or vinyl. Screening shall be 18 x 14 mesh, complying with Fed. Spec. RR-W-365 for wire fabric or Fed. Spec. L-S-125, Type II.

2.13 Weatherstripping shall be the standard type for use with the window unit supplied and shall be easily replaceable.

2.14 Materials for Steel Windows shall comply with the requirements of the following:

- a. Sheet steel: ASTM A 569.
- b. Zinc-coated steel: ASTM A 90 or A 123.
- c. Zinc-coating on hardware: ASTM A 153.
- d. Corrosion-resistant steel: ASTM A 693.

2.15 Materials for Stainless Steel Windows shall comply with the requirements of ASTM A 167.

2.16 Materials for Bronze Frames shall comply with the requirements of ASTM B 96, ASTM B 100, ASTM B 150 or ASTM B 169.

3.0 EXECUTION: Window units shall be installed complete with all necessary anchors, hardware, and other accessories and shall be plumb, square, and level in alignment, and braced and stayed properly to prevent distortion and misalignment.



SECTION 08520 ALUMINUM WINDOWS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of aluminum windows. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Windows shall be furnished as a complete assembly including frame, sash, hardware, mullions, and anchorage devices. Windows indicated to have screen or storm units shall be designed to accommodate the items to be furnished. Aluminum extrusions shall be not less than 22,000 psi ultimate tensile strength and not less than 0.062 inch thickness at any location for main frame and sash members. Window sash and frames shall be designed for outside glazing of vision glass. Weather-stripping shall be easily replaceable. All operable sashes shall have a latch or locking devices. Hardware shall be securely attached to the window with non-corrosive bolts or machine screws. Hardware finishes shall match window finishing. Where operating hardware is located 6 feet-6 inches or more above the floor, poles and pole-operated handles shall be provided to operate the windows.

2.2 Aluminum Primed Windows shall be fabricated and assembled in compliance with American Architectural Manufacturers Association AAMA 101 I.S.2.

2.3 Double Glazed Windows shall have a minimum condensation factor in accordance with AAMA 1503.1-98.

2.4 Awning Windows shall conform to AAMA 101 I.S.2, Commercial Grade. Hardware for top ventilators shall be designed to drop sash down in such a manner to permit cleaning of the outside glass from inside the building. All operating hardware except ventilator arms and rotary operators shall be concealed within frame and sill. Ventilator arms shall be concealed when unit is closed.

2.5 Basement Windows shall conform to AAMA 101 I.S.2, Commercial Grade, single project-in at top vent.

2.6 Casement Windows shall conform to AAMA 101 I.S.2, Commercial Grade. Each side hinge ventilator shall have non-friction type extension hinges, under-screen type rotary operator, and locking handles. Rotary operators shall be heavy-duty worm-gear type with machine cut case hardened steel gears.

2.7 Double-Hung and Single-Hung Windows shall conform to AAMA 101 I.S.2, Commercial Grade. Windows shall be provided with a tilt-in sash. Single-hung and double-hung windows shall be provided with locking devices to secure the sash in the closed position. Counterbalancing mechanisms shall be easily replaced after installation.

2.8 Fixed Windows and Semi-Circular Head Windows shall conform to specification AAMA 101 I.S.2, without ventilator sections.

2.9 Horizontal-Sliding Windows shall conform to AAMA 101 I.S.2, Commercial Grade. Windows shall be provided with locking devices to secure the sash in the closed position.

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2.10 Projected Windows shall conform to AAMA 101 I.S.2, Commercial Grade. Where screens are specified, under-screen operators shall be provided for ventilators that open out.

2.11 Top-Hinged Windows shall conform to AAMA 101 I.S.2, Commercial Grade.

2.12 Vertically-Pivoted Windows shall conform to AAMA 101 I.S.2 Commercial Grade. Pivot assemblies shall be designed to allow for removal of ventilator and provide for smooth operation of ventilator. Windows shall be provided with devices to secure the sash in the closed position.

2.13 Storm Windows shall be triple-track, self-storing, combination storm-and-screen type, conforming to AAMA 1002.10. Storm units shall be designed for the type of windows with which they will be used and shall provide a rigid unit in place, to permit all sashes to be removed from the inside and to lock into the open and closed positions. An interlocking scribe piece of the same material as the frame shall be provided at bottom edge. Units shall be complete with all mounting and operating accessories required to provide a weather-tight installation.

2.14 Insect Screens shall be provided for sash or ventilators of designated windows. Insect screens shall be aluminum frames conforming to SMA ANSI/SMA 1004. Aluminum mesh screening shall conform with ISWA IWS 089, or vinyl coated glass screening conforming to ASTM D 3656.

2.15 Forced-Entry Resistant Windows shall be in accordance with the recommendations specified in AAMA 1032.5.

2.16 High Performance Windows shall be in accordance with the requirements of AAMA 101.

2.17 Window Cleaning Anchors shall be of stainless steel and shall conform to ASME A39.1. Windows shall be reinforced for the reception of window cleaning anchors, if necessary to provide the required strength. Window frames shall be reinforced as may be required to receive the window cleaning anchors, and the window frames shall be anchored securely to the wall construction at point of application of the window cleaning bolts.

2.18 Finish: All exposed members shall be free of scratches and other serious surface blemishes. Prime windows shall have anodized finish or paint finish. Anodized finish shall be AA-M12C22A31 clear in accordance with AA Designation System for Aluminum Finishes. Paint finish shall conform to AAMA 603.8. Storm windows shall be mill finish or paint finish, white. Window unit finishes, cleaning, and chemical treatments shall comply with the requirements of NAAMM Metal Finishes Manual and AAMA 603.8.

3.0 EXECUTION: Final adjustment for proper operation of ventilating unit shall be made after glazing. Where aluminum surfaces are in contact with or fastened to dissimilar materials, except stainless steel or zinc, the aluminum surface shall be protected from dissimilar materials as specified in the Appendix of AAMA 101 I.S.2. Surfaces in contact with sealant after installation shall not be coated with any type of protective material. Window shall be cleaned on both interior and exterior surfaces.



SECTION 08610 WOOD WINDOWS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood windows, general. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Awning Replacement Window Units shall comply with NWWDA I.S.2. 2.2 Single Hung Replacement Window Units shall contain one fixed sash and one balanced vertically-sliding sash and shall comply with NWWDA I.S.2.

2.3 Double Hung Replacement Window Units shall contain two balanced vertically-sliding sashes and shall comply with NWWDA I.S.2.

2.4 Horizontal-Sliding Replacement Window Units shall comply with NWWDA I.S.2.

2.5 Fixed Replacement Window Units shall consist of sashes complying with NWWDA I.S.2 and frames complying with NWWDA I.S.1, or NWWDA I.S.2.

2.6 Window, Screen, and Storm Sash Units shall be manufactured from kiln-dried ponderosa pine, Idaho white pine, Northern white pine, or sugar pine.

2.7 Preservative Treatment: All wood parts shall be water repellent preservative-treated in compliance with NWWDA I.S.4.

2.8 Weatherstripping shall be manufacturer's standard nonferrous spring metal or vinyl gasket.

2.9 Insect Screens: Frames shall be manufacturer's standard formed aluminum or extruded aluminum frames. Insect screening shall be either nonferrous metal or plastic-coated fibrous glass insect screen cloth complying with Fed. Spec. L-S-125, Type II.

2.10 Window Operations shall meet or exceed the minimum operating requirements as specified in NWWDA I.S.2. Each window unit shall be supplied with all operating devices required for easy operation and with suitable locks or latches.

2.11 Window Classification (Grade): Window units shall comply with Class A requirements as specified in NWWDA I.S.2.

2.12 Fabrication:

2.12.1 Sizes and profiles shall match existing work and shall be coordinated with actual measurements of window openings.

2.12.2 The Scope of Each Replacement Window Unit, except as otherwise indicated, shall include the sash or sashes, frame, sill (including undersill or nosing, if any), exterior and interior trim, integral mullion and muntins (if any), hardware, and accessories.

2.12.3 Removable Insect Screens shall be provided for each operating sash.

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2.12.4 Glazing Stops (beads) shall be provided, nailed or snap-on, and coordinated with glass selection and glazing system as indicated.

2.13 Finishes:

2.13.1 Painting: Shop prime coat shall comply with Fed. Spec. TT-P-25, color white.

2.13.2 Vinyl Cladding shall be manufacturer's standard bonded vinyl cladding with permanent paintable finish.

2.13.3 Aluminum Cladding shall be manufacturer's standard formed sheet or aluminum cladding with baked-on acrylic coating.

2.14 Woven Glass Cloth shall weigh not less than 2.0 oz./sq. yd. and shall withstand 120 lbs. of pull per square inch. Resin and hardener catalyst shall be as recommended by the manufacturer of the resin.

3.0 EXECUTION: (Section not used.)



SECTION 08710 FINISH HARDWARE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of finish hardware. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Labeled fire doors shall have fire rated hardware, including smoke seals where required by code, in accordance with NFPA 80. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Hardware finishes shall conform to those identified under ANSI/BHMA A156.18. Finish of fasteners shall match finish of hardware items on which they are applied.

2.1 Locks and Latches: To the maximum extent possible, locksets, latchsets, and deadlocks shall be the products of a single manufacturer. Mortise type locks and latches for doors 1-3/4 inches thick and over shall have adjustable bevel fronts or otherwise conform to the shape of the door. Lock fronts for double-acting doors shall be rounded. Mortise locks shall have armored fronts. Strikes for wood frames and pairs of wood doors shall be furnished with wrought boxes. Trim for mortise locks and latches shall be escutcheon, minimum 7 inches by 1-3/4 inches or sectional, as required, with wrought knob and cast shank and shall conform to the requirements for wrought trim in accordance with ANSI A156.2. Manufacturers' standard plain design shall be used. Keying system shall match remainder of building system (if applicable) or shall be as specified.

2.1.1 Cylinder Locks: Cylinder shall have either six or seven pins with paracentric keyway, as required. Cylinders and the locks in which they are used shall be the product of the same manufacturer. Cylinders shall be provided with removable type single-key cores, where required.

2.1.2 Deadlocks: ANSI A156.5, mortise type, cylinder-operated, E16000 series.

2.1.3 Interconnected Locks and Latches: ANSI A156.12, Grade 1 or 2.

2.1.4 Locksets and Latchsets shall conform to the following types, as required: ANSI A156.2, series 1000, Grade 2; 2000, Grade 1; 4000, Grade 1; A156.13, Operational Grade 1 or 2; and Security Grade 1, 2, 3, or 4.

2.1.5 Locksets for Lead-Shielded Doors shall be provided with factory-installed lead linings. Lead linings shall not be less than the thickness of the lead in the door in which the lockset is required.

2.1.6 Cipher Locks: Cipher locks shall be mechanically operated push button units, with or without master key bypass capability, and changable by authorized access key.

2.1.7 Padlocks: ASTM F 883.

2.2 Door Trim: ANSI A156.6.

2.2.1 Armor Plates shall be category J100, plastic, aluminum, brass, or stainless steel, as required, 40 inches in height, 2 inches less in width than the width of the door for single doors, and 1 inch less for pairs of doors. Edges of metal plates shall be beveled where required. Where the door has a louver panel, the armor plate shall be omitted if top of louver frame is more than 20 inches above the bottom of the door.

2.2.2 Arm Pulls shall be Category J400, double base, aluminum, brass, or stainless steel. **2.2.3 Combination Push-Pull Plates** shall be Category J300, 1/8 inch minimum, aluminum, brass, or stainless steel beveled four edges.

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2.2.4 Drop Ring Pulls shall be Category J400, aluminum, brass, or stainless steel.

2.2.5 Kick Plates shall be Category J100, plastic, aluminum, brass, or stainless steel. Width of plates shall be 2 inches less than door width for single doors and 1 inch less for pairs of doors. Height shall be 10 inches, except where the bottom rail is less than 10 inches, the plate shall extend to within ½ inch of the panel mold or glass bead. Edges of metal plates shall be beveled, where required.

2.2.6 Armor Plates and Mop Plates shall be Category J100, plastic, aluminum, brass, or stainless steel. Width of plates shall be 2 inches less than door width for single doors and 1 inch less for pairs of doors. The height of mop plates shall be 4 inches. Edges of metal plates shall be beveled, where required.

2.2.7 Push and Pull Bars shall be Category J500, aluminum, brass or stainless steel, where required. Edges of mounting plates shall be beveled.

2.2.8 Push Plates shall be Category J300, aluminum, brass, stainless steel, or plastic, in color as required, size as required. Edges of metal plates shall be beveled, where required.

2.2.9 Sectional Door Pulls for metal or kalamein doors shall be Category J400 brass, thru-bolted type of plain modern design. Door pulls on plates for wood doors shall be Category J400 aluminum, brass, or stainless steel with beveled edges, as required.

2.3 Exit Devices and Exit Device Accessories: ANSI A156.3.

2.3.1 Door Coordinator shall be Type 21 and shall be provided for each pair of doors with closers and equipped with an overlapping astragal.

2.3.2 Removable Mullions shall be Type 22 of the box type and shall be used only with those exit devices for which the mullions were manufactured. Mullions shall be furnished with mullion stabilizers of the same manufacturer.

2.4 Door Controls: Overhead holders conforming to ANSI A156.8.

2.5 Auxiliary Hardware, including door surface bolts, door holders, door stops, and roller latches, of the types required, shall conform to ANSI A156.16.

2.5.1 Lever Extension Flush Bolts: Type L14081, installed at the top and bottom of the inactive leaf of pairs of doors, and mortised in the lock edge of the door.

2.5.2 Dust-Proof Strikes: Type L04011.

2.5.3 Garment Hooks: Type L03111.

2.5.4 Hand Rail Brackets: Type L03061, L03081, L03091, or L03101.

2.5.5 Garment Rods: Type L03131 or L03141.

2.5.6 Coat Hook: Type L03111.

2.5.7 Door Stop, Adjustable Hinge Type: Type L02223.

2.5.8 Door Stop, Wall Type Flexible, 3 inch: Type L02051, L02052, L02053.



2.5.9 Door Stop, Wall Type Flexible, 4 inch: Type L02061, L02062, L02063.

2.5.10 Door Stop, Floor Mounted, Type L02143.

2.6 Hinges: ANSI A156.1. Hinges used on metal doors and frames shall also conform to ANSI A156.7.

2.6.1 Hinges for Reverse Bevel Doors with locks shall have pins that are made nonremovable by means such as a set screw in the barrel, or safety stud, when the door is in the closed position.

2.6.2 Hinges with Anti-Friction Bearings may be furnished in lieu of ball bearing hinges, where required. Fire door hinges shall be in accordance with NFPA 80.

2.7 Door Closing Devices: ANSI A156.4.

2.7.1 Surface Type Closers shall be Series C01000, C02000 Standard Cover, C02000 Full Cover with option PT-4C, or C03000 with options PT-4A and PT-4D, where required. Mounting details for the type closers to be used shall be in accordance with manufacturer's standards. Closers for screen and storm doors shall be Type C09353. Closers for outswinging exterior doors shall have parallel arms or shall be top jamb-mounted. Closers for interior doors close to a wall shall be of narrow projection so as not to strike the wall at the 90 degree open position or shall have parallel arms.

2.7.2 Floor Closers and Pivots shall have cement boxes. Floor closers and pivots used on the same door shall be the product of one manufacturer only. Floor plates are not required where thresholds cover the closer cement box. Setting tools shall be furnished for use in installing floor closers.

2.8 Smoke Detectors and Magnetic Holders: ANSI A156.15. Door closers with integral holders connected to a separate detection device or closers with integral holders and detector units, sensing particles of combustion that when activated will release the holder mechanism causing the closer to close the door may be used in lieu of separate closers, detectors, and magnetic holders. Closers shall be listed or labeled by a nationally recognized independent testing laboratory.

2.9 Key Control Storage System: ANSI A156.5, type and capacity as required, properly labeled for key identification. 08920-2 condition of panels shall be prepared for installation into framing, and either sealed or vented to exterior only. Panels shall be flat, with no deviations exceeding 5 thousandths of an inch in 12 inches. Insulated core shall meet the designated k-value.

2.2.3 Brackets and Reinforcements shall be high-strength aluminum units where feasible. Otherwise, nonmagnetic stainless steel shall be used, except at fabricator's option. Brackets not exposed to weather or abrasion may be hot-dipped galvanized steel complying with ASTM A 386. Provide nonstaining, nonferrous shims for installation and alignment of window wall work.

2.2.4 Window Cleaner's Bolts, if required, shall be nonmagnetic stainless steel complying with ASME A39.1.

2.2.5 Concealed Flashing shall be dead-soft stainless steel, 26 gauge.

2.2.6 Fasteners and Accessories shall have exposed portions matching finish of window wall system. At joints where movement must be accommodated, provide slip-joint linings of sheets, pads, shims, or washers of fluorocarbon resin or similar material recommended by manufacturer.

2.2.7 Inserts for Concrete Masonry shall be cast iron, malleable iron, or hot-dipped galvanized steel complying with ASTM A 386.

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2.2.8 Firestopping Materials shall be mineral fiber insulation or other noncombustible material suitable for permanent placement and complying with applicable regulations.

2.2.9 Finishes shall comply with NAAMM AA-M32C21A31 (0.4 mil) for natural aluminum color and NAAMM AA-M32C21A32 (0.4 mil) for integral color anodized finish.

3.0 EXECUTION: (Section not used.)



SECTION 08810 GLASS AND GLAZING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of glass and glazing materials. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Glazing Compounds and Preformed Glazing Sealants: A suitable type of glazing compound or preformed glazing sealant in compliance with section Glazing Materials of the FGMA Glazing Manual shall be provided.

2.1.1 Gunnable Polymer Glazing Sealants shall be as follows:

2.1.1.1 Acrylic (one-part): ASTM-C-834.

2.1.1.2 Butyl (one-part): ASTM C 1085.

2.1.1.3 Polysulfide (one- or two-part): ASTM C 920.

2.1.1.4 Polyurethane (one- or two-part): ASTM C 920.

2.1.1.5 Silicone (one-part): ASTM C 920 and ASTM C 1184.

2.1.2 Glazing Preformed Tapes shall be butyl or polyisobutylene/butyl and shall be manufacturer's standards.

2.1.3 Knife Grade Glazing Sealants shall be as follows:

2.1.3.1 Wood Sash Putty: CID-A-A-378.

2.1.3.2 Face Glazing Compound: ASTM C 669.

2.1.3.3 Steel Sash Putty: Manufacturer's standard.

2.1.3.4 Channel Glazing Compound: Manufacturer's standard.

2.1.4 Gaskets for Glazing shall be as follows:

2.1.4.1 Dense Neoprene: ASTM C 542 (lock-strip gaskets).

2.1.4.2 Foam Neoprene: ASTM C 509.

2.1.4.3 PVC: ASTM D 2287.

2.1.4.4 Mullion Sections shall be manufacturer's standard for glass size provided.

2.2 Glazing Accessories: Glazing points, chips, shims, angles, beads, setting blocks, spacer strips, and other glazing accessories shall be provided where required to provide a complete installation.

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2.3 Float, Plate or Glass:

2.3.1 Clear Glass: ASTM C 1036, Type I, Class 1, Quality q3.

2.3.2 Heat-Absorbing Glass: ASTM C 1036, Type I, Class 2, Quality q3, Style A.

2.3.3 Light-Reducing Glass: ASTM C 1036, Type I, Class 3, Quality q3.

2.3.4 Greenhouse Glass: ASTM C 1036, Type I, Class 1, Quality q6.

2.4 Tempered Glass: ASTM C 1048, Kind FT, Condition A; Type I, Quality q3 or Type II, Quality q8. All tempered glass shall be purchased to meet field dimensions and shall not be altered in the field.

2.5 Wired Glass: ASTM C 1036, Type II, Class 1, Form 1, Mesh M1, 1/4 inch thick and in compliance with ANSI Z97.1. Wired glass for fire doors and windows shall comply with NFPA 80.

2.6 Figured Glass: ASTM C 1036, Type II, Class 1, Form 3, Quality q8, 1/8 inch thick.

2.7 Rough Glass: Rolled, translucent, flat, glazing quality, one side rough and the other polished, 7/32 inch thick.

2.8 Laminated Glass: Laminated Glass shall be fabricated from two pieces of clear, heat-absorbing, light-reducing, or wired glass, as designated and previously specified, laminated together with a clear vinyl inter-layer. Laminated glass shall comply with ANSI Z97.1.

2.9 Insulating Glass:

2.9.1 Hermetically Sealed Glazing Units shall be fabricated of two lites of glass, separated by a dehydrated air space that is 1/2 inch unless otherwise designated and sealed permanently at the edges. Clear, light-reducing, heat-absorbing, figured, wired, and tempered glass shall be as previously specified.

2.9.2 Manufacturer's Standard Fused-Glass Edge Construction shall use double-strength clear sheet glass and shall only be provided in small applications under 30 sq ft.

2.10 Mirror Glass: Plate or float glass complying with ASTM C 1036, Type I, Class 1, Quality q2, and 1/4 inch thick except as otherwise indicated with a silver coating and protective electrolytic copper coating not less than .0002 inch thick. Mirror backing paint shall consist of two coats of special scratch and abrasion-resistant paint, and shall be backed in uniform thickness to provide a protection for silver and copper coatings which will permit normal cutting and edge fabrication.

2.11 Glazing Plastics:

2.11.1 Cast Acrylic Glazing Plastic Sheets of 1/4 inch thickness, of clear transparent acrylic plastic with a light transmittance of 92 percent for a 1/4-inch sheet, impact resistance to withstand a 16-foot drop of a 1/2-pound steel ball on a 12-inch x 12-inch x 1/4-inch edge-supported sheet, modulus of elasticity of approximately 450,000 psi, flexural strength of 16,000 psi, and 180 F allowable continuous service temperature.

2.11.2 Cast Polycarbonate Glazing Plastic Sheets of 1/4-inch thickness of clear transparent polycarbonate plastic, with a minimum light transmittance of 82 percent for a 1/4-inch sheet and free of significant dimensional change for exterior exposure. Drop ball impact resistance of 200 foot-pounds, for a 12-inch x



12-inch x 1/8-inch edge-supported sheet, modulus of elasticity of 340,000 psi, flexural strength of 13,500 psi, and 250 F allowable continuous service temperature.

2.11.3 Reinforced Polyester Glazing Plastic Sheets of 1/8-inch thickness of clear translucent acrylic-modified polyester plastic sheet with invisible glass fiber reinforcement compounded specifically for exterior exposure with U.V. absorbers with a light transmittance of 92 percent for an 1/8-inch sheet, manufacturer's standard figured or textured surfaces, a modulus of elasticity of 721,000 psi, flexural strength of 17,800 psi, and 180 F allowable continuous service temperature.

2.11.4 Reinforced Polyvinyl Chloride Sheets of 0.12 inch thickness of clear transparent rigid polyvinyl chloride with .011-inch galvanized steel mesh woven to 10 mesh screening and located in the center of the sheet thickness. The sheet shall have a light transmission of 85 percent for a 1/4-inch sheet, tensile strength of 8,500 psi, flexural modulus of 550,000 psi, and flexural strength of 15,000 psi.

2.12 Bullet-Resisting Glass: Glass shall be fabricated from Type I, Class 1, Quality q3 glass with polyvinyl butyral plastic interlayers between the layers of glass. The thickness of each layers of glass shall be in accordance with the manufacturer's standard practice. The total nominal thickness of the laminated glass shall be 1-3/16 inches. Glass shall meet the test requirements of the Underwriters' Laboratory for bullet-resisting materials. Listing in Underwriters' Laboratory Guide COGT will be accepted as evidence of compliance with this requirement in lieu of a certificate.

2.13 One-Way Vision Glass: Glass shall be fabricated from Type I, Class 1, Quality q2, 1/4-inch thick glass. One face shall be coated with a hard adherent film of chromium or other approved coating of proven equivalent durability. The glass shall transmit not less than 5 percent or more than 11 percent of total incident light in the visible region and shall reflect from the front surface of the coating not less than 45 percent of the total incident light in the visible region.

2.14 Spandrel Glass: ASTM C 1048, Kind HS, Condition B, Type I, Quality q5.

2.15 Reflective Glass: ASTM C 1048, Kind HS or FT, Condition C, Type I, Quality q3, with minimum 10 percent visible light transmission and maximum 25 percent solar energy transmittance.

3.0 EXECUTION:

3.1 Preparation: Preparation of glazing and surrounding area shall comply with the details and general conditions governing glazing in the FGMA Glazing Manual unless otherwise specified.

3.1.1 Glazing: Remove broken glazing and putty from frames.

3.1.2 Frames: Clean existing frames. Replace missing or inoperative gaskets and glazing beads.

3.2 Installation:

3.2.1 General: The Contractor shall determine glazing dimensions by measuring the actual opening to receive the glass. Install sheet glass with the visible lines or waves running with the horizontal dimensions. Leave labels in place until the installation is approved.

3.2.2 Glass Setting: Items shall be glazed using glass of the quality and thickness specified or indicated. Doors and windows may be glazed in compliance with one of the glazing methods described in the standards under which they are produced, except the face puttying method will not be permitted.

3.2.3 Wired Glass: Install wire glass for fire doors and fire windows in compliance with the requirements of NFPA 80.

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3.2.4 Cleaning: Glass surfaces shall be thoroughly cleaned, with labels, paint spots, putty, and other defacements removed and shall be clean at the time the work is accepted.



SECTION 08915 ALUMINUM WINDOW WALLS/CURTAIN WALLS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of aluminum window walls. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 System Performance:

2.1.1 Load-Bearing Strength (wind resistance) shall be designed according to American Society of Civil Engineers' ASCE 7 - 6.4.2, "Analytical Procedure" tested in accordance with ASTM E 330, ANSI A58.1, and AAMA CW 1-9.

2.1.2 Deflections and Thermal Movements shall be as recommended by the wall manufacturer for the project site.

2.1.3 Leakage Resistance: Air leakage shall be in accordance with ASTM E 283. Water penetration shall be in accordance with ASTM E 331.

2.1.4 Condensation Resistance Factor (CFR) shall be not less than 55 when tested in compliance with AAMA 1503.1.

2.1.5 Sound Transmission Classification (STC) shall be as designated by the Contracting Officer, not less than 34 decibels(db), and in accordance with ASTM E 90.

2.1.6 The wall system shall comply in general with applicable provisions of the AAMA Metal Curtain Wall, Window, Store Front, and Entrance Guide Specifications Manual (GSM-1).

2.2 System Components:

2.2.1 Aluminum Members (extrusions, formed members, sheet, and plate) shall be in compliance with requirements of:

ASTM B 221 for extruded bars, rods, shapes and tubes

ASTM B 209 (209M) for sheet/plate.

ASTM B 429 for extruded structural pipes and tubes

2.2.2 Insulated Panels shall be laminated aluminum-faced panels finished to match window wall framing. Face sheets shall be not less than 0.0249 inch thick. Concealed back sheets shall be of aluminum or galvanized steel. Edge condition of panels shall be prepared for installation into framing, and either sealed or vented to exterior only. Panels shall be flat, with no deviations exceeding 5 thousands of an inch in 12 inches. Insulated core shall meet the designated k-value.

2.2.3 Brackets and Reinforcements shall be high-strength aluminum units where feasible. Otherwise, nonmagnetic stainless steel shall be used, except at fabricator's option. Brackets not exposed to weather or

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abrasion may be hot-dipped galvanized steel complying with ASTM A 386. Provide non-staining, nonferrous shims for installation and alignment of window wall work.

2.2.4 Window Cleaner's Bolts, if required, shall be nonmagnetic stainless steel complying with ASME A39.1.

2.2.5 Concealed Flashing shall be dead-soft stainless steel, 26 gauge complying with ASTM A666 compatible with system.

2.2.6 Fasteners and Accessories shall have exposed portions matching finish of window wall system. At joints where movement must be accommodated, provide slip-joint linings of sheets, pads, shims, or washers of fluorocarbon resin or similar material recommended by manufacturer.

2.2.7 Inserts for Concrete Masonry shall be cast iron, malleable iron, or hot-dipped galvanized steel complying with ASTM A 386.

2.2.8 Firestopping Materials shall be mineral fiber insulation or other noncombustible material suitable for permanent placement and complying with applicable regulations.

2.2.9 Finishes shall comply with NAAMM AA-M32C21A31 (0.4 mil) for natural aluminum color and NAAMM AA-M32C21A32 (0.4 mil) for integral color anodized finish.

3.0 EXECUTION: Comply with manufacturer's written instructions for protecting, handling, and installing glazed aluminum curtain wall system. Fit joints to produce hairline joints. Rigidly secure non-movement joints. Seal joints watertight, unless otherwise indicated. Provide means to drain water to the exterior to produce a permanently weatherproof system. Install system plumb, level and in alignment with established lines and grades. Conduct air infiltration and water penetration tests. Repair or replace areas damaged during testing. Protect finished installation against damage until substantial completion.



DIVISION 09 FINISHES



SECTION 09941 PAINTING OF WATER STORAGE TANK INTERIOR SURFACES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for painting water storage tank interior surfaces. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The following materials form a part of this section of the specification: Mil. Spec. DOD-P-15328, SSPC Paint 8, and Mil. Spec. MIL-P-15930.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Respirators: Respirators shall be worn by all persons engaged or assisting in spray painting. Air-fed respirators will be worn by all persons engaged in spray painting in confined areas (water thinned coatings excluded).

3.1.2 Forced Ventilation: Whenever surface preparation or painting operations include the use of volatile organic solvents, the enclosed space shall be made safe at all times from fire and explosion as determined by a calibrated explosimeter or organic vapor analyzer. During the painting operation, sufficient exhaust ventilation shall be provided to exchange the air in the enclosed spaces with fresh air at the rate of 5,000 cfm for each spray gun in operation. All parts of the enclosed spaces shall be swept by moving air. Exhaust ducts shall discharge clear of working areas and away from sources of possible ignition. If the ventilation fails, operations shall be stopped and the compartment evacuated until sufficient exhaust ventilation is provided.

3.1.3 Blast Cleaning: Ferrous surfaces shall be dry blast cleaned to near white metal grade, which shall be in compliance with SSPC-SP 5, except that paragraphs 3.1, 3.2, 3.3, and 3.10 shall not be applicable and except that a limited relaxation from the uniform white metal grade of surface cleanliness will be permitted, as follows. The metal shall be cleaned to such a degree that were a large surface to be divided into 6-inch squares, at least 75 percent of the subdivisions would meet the white metal grade of cleanliness and the remaining subdivisions would be randomly distributed. Within these small, randomly distributed areas a minor relaxation from white metal cleanliness would be permitted, consisting only of very slight shadows, stains, and discolorations stemming from very thin, adherent, sparsely scattered residues of mill scale and corrosion products. No relaxation from the white metal grade will be permitted on surface irregularities such as edges, interior angles, welds, rivet lines, and junctions of joining members. The overall blasting effort expended shall be not less than two-thirds (2/3) of that which would be required to accomplish the white metal grade of cleanliness on the specific surfaces involved, but this limitation shall not be construed as a waiver of any of the requirements above. Remove weld spatter not dislodged by blasting with impact or grinding tools. Surfaces shall be dry at the time of blasting.

3.1.4 Surface Protection: Within 8 hours after cleaning but in any event prior to the deposition or formation of any detectable moisture, contaminants, or corrosion, all ferrous surfaces that have been blast cleaned to the near-white metal grade shall be cleaned of dust and abrasive particles by brushing, vacuum cleaning, and/or blowdown with clean, dry compressed air, and shall be given the pretreatment and first coat of paint.

3.1.5 Pretreatment: All sandblasted surfaces shall receive a washcoat pretreatment complying with Mil. Spec. DOD-P-15328. Application shall be by spray, and all requirements of the specification concerning mixing, thinning, application, and spreading rate shall be followed. All materials not applied within a maximum of eight hours after mixing shall be discarded and must not be used.

3.2 Installation:

3.2.1 Primer Paint: All pretreated surfaces shall receive two coats of vinyl paint complying with Mil. Spec. MIL-P-15930. Application shall be by brush or spray. All corners, angles, welds, rivets, and other surface irregularities shall receive one additional preliminary spray coat. The succeeding primer coat (or initial



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finish coat) shall not be applied until the primer is dry to touch. The color of alternate coats shall provide contrast to assist in obtaining complete coverage.

3.2.2 Finish Paint: All primed surfaces shall receive a minimum of two coats of Aluminum Vinyl Finish Paint complying with SSPC Paint 8. The paint shall be formulated as specified except that high boiling solvents such as cyclohexanone shall not be used in the formulation. High boiling solvents may be substituted for the ketones specified in the thinner only if ambient temperatures at the time of application exceed 75 F (24 C). Application shall be by spray. All corners, angles, welds, rivets, and other surface irregularities shall receive one additional preliminary spray coat. The succeeding coat shall not be applied until the first coat is dry to touch.

3.2.3 Thickness Requirements: Apply the washcoat pretreatment to a dry film thickness of at least 0.3 mils but not exceeding 0.5 mils. Apply the primer paint to produce a dry film of approximately 2.5 mils. Apply the finish paint such that the resulting total system has a minimum dry film thickness of at least 5 mils at its thinnest point. If this thickness is not obtained in the specified number of coats, apply additional coats of the finish paint to meet the minimum thickness requirement at no additional cost to the Government. Final thickness measurements shall be made by the Contractor in the presence of the Contracting Officer using a magnetic thickness gauge as specified in SSPC-PA 2.

3.2.4 Final Drying Time: After the final coat of paint has been applied, the tank shall remain open and forced ventilation shall be continued for a minimum of three days prior to being flooded with water. 3.2.5 Washing: After the final work has been completed in the tank, but prior to any disinfecting operations, wash the tank with clean water to remove all dust and overspray. Washing may take place during the final dry time provided the coating is sufficiently cured to withstand the abuse.

3.2.6 Disinfection of Tank: After painting and all other interior work has been completed, disinfect the tank before it is replaced in service. If the local medical facility or health department requires a specific procedure for disinfection, follow that procedure. Otherwise the following procedure shall be followed: Place water containing 50 ppm chlorine in the tank to such a depth that when the tank is filled the resultant chlorine concentration shall be no less than 2 ppm. Hold the water containing 50 ppm chlorine in the tank for 24 hours before the tank is filled. Allow the full tank, in turn, to stand for 24 hours, after which the tank may be put into service without draining the water used to disinfect it.

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SECTION 09210 PLASTER REPAIRS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of plaster for repairs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Materials shall comply with ASTM C 841 and C 842 unless otherwise specified.

2.2 Finish Plaster shall be gypsum plaster or Keene's cement.

2.3 Lath and Furring shall be wood, gypsum, or metal to match existing. Paper backing shall be used on metal lath except when applied over masonry or concrete. Lath for Portland cement plaster shall comply with ASTM C 1063.

2.4 Portland Cement: ASTM C 150, Type I or Type II. Only one type and brand shall be used in the work.

2.5 Portland Cement Plaster: CSI 09220.

2.6 Metal Trim: New metal trim required for replacement of damaged or deteriorated trim shall be compatible with the existing metal trim.

2.7 Gypsum Wallboard for repair of solid but severely cracked plaster shall be 1/4 inch thick, 4-foot by 8-foot sheets.

2.8 Color: FED. STD. 595.

3.0 EXECUTION:

3.1 Preparation: Appropriate measures shall be taken to contain dust and protect adjacent surfaces during removal and replacement. Damaged or deteriorated plaster and accessories shall be removed and disposed of as required. Surfaces to which old plaster was applied shall be cleaned of all loose or foreign materials which might inhibit bonding or proper fitting of new plaster, lathing, and accessories. Concrete or masonry surfaces to be replastered shall be coated with a continuous film of bonding agent.

3.2 Environmental Conditions: A temperature of not less than 55 F shall be maintained in the building for 24 hours before, during, and after plaster application.

3.3 Plaster Installation: Plaster shall be installed in compliance with ASTM C 842. Portland cement plaster shall be installed for all exterior surfaces and all interior surfaces subject to high humidity. Gypsum plaster shall be installed for all remaining interior surfaces. Color, texture, finish, and thickness of plaster shall match adjacent, undamaged plaster or designated areas.

3.3.1 Plaster over Existing Work: Where replacement of the top or finish coat only is required, only the damaged or deteriorated finish coat shall be removed. New finish coat shall be applied, allowed to dry, and sanded to bring smooth with existing adjacent surfaces.



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3.3.2 Ornamental Plaster: New plaster shall be run full, straight, and true with molding plaster using clean cut metal conforming to the existing profiles. Rough spots shall be sanded and left ready for painting.

3.3.3 Restoration: The Contractor shall replace or reinstall to the original condition all materials removed to get to the repair work. Materials damaged during removal or reinstallation shall be replaced with similar new materials.



SECTION 09260 GYPSUM DRYWALL AND METAL STUDS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gypsum drywall. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Application procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS

2.1 Gypsum Panel - Sheetrock fire code gypsum panels (single layer).

2.2 Fasteners - Self-tapping steel screws with rust inhibited coating.

2.3 Insulation - 11/2- inch termafiber sound attenuating blankets or as circumstance dictates.

2.4 Metal Accessories - Corner Beads, trim, etc. shall be galvanized steel.

2.5 Joint Treatment - As recommended by manufacturer.

2.6 Perimeter Caulking - Acoustical as recommended by manufacturer.

2.7 Control Joints - Zinc.

2.8 Joint compound shall be asbestos free type.

2.9 Acoustical Sealant -As recommended by Manufacturer.

2.10 Metal Studs

2.10.1 Steel studs shall be hollow type spaced 16-inches on centers of sizes indicated, built up with diagonal wire web of No. 7 gauge cold drawn wire, diagonally spaced and welded at 8-inch intervals between outer chords on 1/2-inch x 1/2-inch angles, No. 16-gauge cold rolled steel.

2.10.2 Place steel studs approx. 2-inches from abutting partitions and 2-inches from each side of interior angle of all corners.

2.10.3 Steel studs shall be secured to top tracks with 22-ga. galvanized steel adjustable stud shoes.

2.11 STUD TRACKS

2.11.1 Floor and ceiling stud tracks shall be 22-ga. cold rolled steel with 1/2-inch legs and securely fastened to beams, slabs or partitions with 1/2-inch stud bolts or other method approved by manufacturer spaced not more than 24 inches on centers.



2.11.2 In locations where drawings indicate partitions on an existing floor (wood, asphalt tile, etc.), remove existing floor to allow partition to be secured to a sound concrete sub-surface.

2.12 STUD SHOES

2.12.1 Stud shoes shall be wire tied to studs with two double strands of 18-ga. galvanized tie wire.

2.13 HORIZONTAL BRACING

2.13.1 Shall consist of 3/4-inch steel furring channels fastened to inside of stud with webs in a horizontal position. Spacing of channels shall not exceed 6 feet.

3.0 EXECUTION:

3.1 Gypsum ceiling panels screw attached to metal furring channels clipped or wire tied to suspended main runner channels or wire tied to main support members.

3.2 Provide control joints where ceiling abuts dissimilar wall or ceiling or a structural element.

3.3 Gypsum wall panels shall be screwed to metal studs or furring channels and to and bottom metal track.

3.4 All joints of ceiling or wall panels shall be taped with at least two coats of joint compound. See manufacturers instructions for applicable installation.

3.5 Align stud track accurately to the partition layout @ Both floor and Ceiling.

3.6 Adjust all members for straight and proper alignment.



Section 09315 Tile Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ceramic tile flooring, ceramic mosaic tile flooring, conductive ceramic tile flooring, quarry tile flooring, slate flooring, and quarry tile by the acid-resistant installation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Glazed Ceramic Tile: ANSI A137.1.

2.2 Ceramic Mosaic Tile: ANSI A137.1.

2.2.1 Natural Clay Tile.

2.2.2 Porcelain Body Tile.

2.2.3 Slip-Resistant Tile: ANSI A137.1.

2.2.4 Pregrouted Sheets of ceramic tile, factory-assembled and grouted with manufacturer's standard polyurethane material.

2.3 Conductive Ceramic Tile: Complying with Type I, Class F.

2.4 Quarry Tile: ANSI A137.1. Wax-coated top surface for acid-resistant installation.

2.4.1 Slip-Resistant Quarry Tile shall comply with TCA ANSI A137.1, Section 5.2.1.2.9.

2.5 Slate: Grade A, unfading slate flooring.

2.6 Base Units: Cove type, round top.

2.7 Trim Pieces: For base shall be cove or bullnose.

2.8 Mortar and Grout Materials:

2.8.1 Portland Cement: ASTM C 150, Type 1.

2.8.2 Aggregate: Sand, ASTM C 144.

2.8.3 Dry-Set Mortar and Grout: ANSI A118.1, TCA Formula 759 or 763 (as applicable).

2.8.4 Conductive Dry-Set Mortar: Conforming to ANSI A118.2.

2.8.5 Conductive Latex Mortar: Conforming to ANSI A118.2.

2.8.6 Liquid Latex: ANSI A118.4 except latex shall be non-remulsifiable in water.



2.8.7 Epoxy Mortar and Grout: TCA Formula AAR-II, two-component epoxy resin, hardener, and mineral filler complying with ANSI A118.3.

2.8.8 Furan Mortar.

2.8.9 Furan Grout.

2.8.10 Water shall be clean, fresh, potable water approved by Public Health authorities for domestic consumption.

2.8.11 Commercial Cement Grout: Proprietary compound of Portland cement and additives, factory-blended to decrease shrinkage.

2.9 Adhesives:

2.9.1 Epoxy Adhesive: TCA Formula C150, two component epoxy resin and hardener.

2.9.2 Organic Adhesive: ANSI A136.1 with TCA certification of conformance.

2.10 Sealants:

2.10.1 Polysulphide: ASTM C 920, Type S, Grade P, synthetic-rubber base.

2.10.2 Polyurethane: ASTM C 920, Type S, Grade P.

2.10.3 Silicone: ASTM C 920, Type S, able to withstand an increase and decrease of at least 50 % of the joint width as measured at the time of application, and ASTM C 1184.

2.11 Adhesive and Joint Sealant: ASTM C 920, Grade NS, Class 25.

2.12 Cleavage Membrane: One of the following:

2.12.1 Saturated Felt: ASTM D 250, 15-pound type.

2.12.2 Polyethylene Film: ASTM D 2103, Type O, 0.004 inch thick.

2.13 Marble Thresholds: Group A per Marble Institute of America MIA-01, with rounded edges and sand rubbed finish.

2.14 Reinforcing Mesh: ASTM A 185.

2.15 Plywood: DOC PS 1, "C-C EXT-APA" or "UNDERLAYMENT C-C Plugged EXT-APA," 3/4 inch thick unless otherwise noted.

2.16 Nails: Fed. Spec. FF-N-105 annular, screw or ring type, zinc-coated.

2.17 Backer Rod: Closed cell polymeric foam, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623 and water absorption less than 0.02 gms/cc per ASTM C 1083.

2.18 Elastomeric Sheet: 40 mil complying with ASTM D 2103.

3.0 EXECUTION:

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3.1 General: Comply with ANSI A108.1 through A108.7 except as otherwise indicated and with TCA Handbook for Ceramic Tile Installation.

3.2 Portland Cement Mortar Bed: Install in accordance with ANSI A108.1, as modified herein.

3.2.1 Mix Mortar in proportion on one part Portland cement to five parts dry sand or six parts damp sand.

3.2.2 On Wood and Framed Concrete Slab Floors provide a cleavage membrane before placing setting bed, with edges of sheets lapped.

3.2.3 On Cleavage Membrane lay welded wire mesh reinforcing, lapping three inches at all edges.

3.2.4 Install Mortar and tamp heavily to compact bed to depth of 3/4 inch to 1-1/4 inches.

3.3 Dry-Set Portland Cement Mortar Bed: Install in accordance with ANSI A108.5 except as modified below.

3.3.1 Carefully Work Sufficient Water into dry-set mortar to obtain desired consistency.

3.3.2 Mix Mortar Ingredients thoroughly before adding latex. Carefully work in sufficient latex to obtain desired consistency.

3.3.3 Rework Mixes from time to time to maintain proper consistency, but do not add additional ingredients.

3.3.4 Apply Layer of Mortar to form a thickness of at least 1/8 inch.

3.4 Organic Adhesive Application: Install in accordance with ANSI A108.4.

3.5 Install Conductive Ceramic Tile in accordance with ANSI A108.7.

3.5.1 Testing: Conductive ceramic tile floors shall be tested in accordance with NFPA 99.

3.5.2 Replacement: Floors that have not met requirements of NFPA 56 within six months after they are installed shall be removed and replaced with properly conductive floor by this Contractor at no additional cost to the Government.

3.6 Install Quarry Tile and Slate in accordance with ANSI A108.3.



SECTION 09320 CERAMIC WALL TILE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ceramic wall tile. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Tile:

2.1.1 Ceramic Tile: Tile shall be standard grade conforming to ANSI A137.1. Containers shall be grade-sealed. Seals shall be marked to correspond with the marks on the signed master grade certificate.

2.1.2 Ceramic Mosaic Tile and Trim shall be unglazed natural clay or porcelain with cushion edges. Tile size shall be 1 inch by 1 inch, 1 inch by 2 inches, 2 inches by 2 inches, or a mixture of standard sizes in a stock pattern, as selected.

2.1.3 Glazed Wall Tile and Trim shall be cushion-edged with bright or matte glaze. Tile shall be 4-1/4 inches by 4-1/4 inches, 4-1/4 inches by 6 inches, or 6 inches by 6 inches and, as selected.

2.1.4 Accessories: Accessories shall be the built-in type of the same materials and finish as the wall tile.

2.2 Setting Bed: Metal lath shall be flat expanded type conforming to ANSI A42.3 or A42.4, and weighing not less than 2.5 pounds per square yard.

2.3 Water shall be potable.

2.4 Mortar, Grout, and Adhesive shall conform to the following:

2.4.1 Dry-Set Portland Cement Mortar: ANSI A118.1.

2.4.2 Organic Adhesive: ANSI A136.1, Type I.

2.4.3 Epoxy Resin Grout: ANSI A118.3.

2.4.4 Furan Resin Grout: ASTM C 395.

3.0 EXECUTION:

3.1 Preparation: Surface to receive tile shall conform to the requirements ANSI A108.1 for surface conditions for the type setting bed required and for workmanship.

3.2 Installation:

3.2.1 General: Special shapes shall be provided as required for sills, jambs, recesses, offsets, external corners, and other conditions to provide a complete and neatly finished installation.

3.2.2 Installation of Wall Tile:

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3.2.2.1 Plastic or Cured Mortar Bed: Tile shall be installed over a plastic mortar bed or a cured mortar bed. A 4-mil polyethylene membrane, metal lath, and scratch coat shall also be installed. Plastic mortar bed, materials, and installation of tile shall conform to ANSI A108.1. Cured mortar bed and materials shall conform to ANSI A108.1. Dry-set mortar method of installing tile over a cured mortar bed shall conform to ANSI A108.5.

3.2.2.2 Dry-Set Mortar: Dry-set mortar shall be used to install tile directly over clean, sound, dimensionally stable masonry in accordance with ANSI A108.5.

3.2.2.3 Organic Adhesive: Organic adhesive installation of ceramic tile shall conform to ANSI A108.4.

3.3 Cleaning: Upon completion, tile surfaces shall be thoroughly cleaned in accordance with ANSI A108.1. Acid shall not be used for cleaning glazed tile.



Section 09405 Terrazzo

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for terrazzo floors and stairs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Terrazzo Materials and Installation shall comply with specifications and recommendations of The National Terrazzo and Mosaic Association, Inc. (NTMA)

2.2 Underbed Reinforcement shall be 2-inch by 2-inch by 16-gauge welded wire mesh, ASTM A 185, galvanized.

2.3 Isolation Membrane shall be polyethylene film, complying with ASTM D 2103, not less than 4.0 mils thick.

2.4 Cast-In-Place Terrazzo Materials:

2.4.1 Portland Cement shall conform to ASTM C 150, Type I, except as modified to comply with NTMA requirements for compressive strength. Provide non-staining white cement for terrazzo matrix. Provide standard gray cement for underbed.

2.4.2 Sand shall conform to ASTM C 33.

2.4.3 Aggregate shall be natural, sound, crushed marble chips without excessive flats or flakes, complying with NTMA requirements.

2.4.4 Monolithic Terrazzo shall be 1/2-inch total thickness over concrete slab.

2.4.5 Bonded Terrazzo shall be 1/2-inch terrazzo over a 1-1/4 inch minimum underbed.

2.5 Thinset Epoxy and Polyester Materials:

2.5.1 Polyacrylate-Modified Cementitious Terrazzo Matrix: Polyacrylate and color pigment complying with NTMA "Guide Specification for Polyacrylate Modified Terrazzo."

2.5.2 Polyester Resin Terrazzo Matrix: Two-component polyester resin and hardener, mineral filler, and color pigment, complying with NTMA "Guide Specification for Polyester Terrazzo."

2.5.4 Epoxy Resin Terrazzo Matrix: Thermosetting, amine-cured epoxy resin and hardener, mineral filler, and color pigment, complying with NTMA "Guide Specification for Epoxy Terrazzo."

2.5.5 Conductive Terrazzo with Resinous Matrix: Electricity conductance shall conform to resistance levels established by the UL 779.

2.6 Precast Terrazzo: Precast terrazzo base and stair units shall comply with NTMA.

2.7 Sealer: Colorless, slip-and stain-resistant, non-yellowing penetrating sealer that will not disturb color or physical properties of terrazzo surface; pH factor between 7 and 10.

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2.8 Plywood: DOC PS 1, "C-C EXT-APA" or "Underlayment C-C Plugged EXT-APA", 3/4 inch thick unless otherwise noted.

2.9 Nails: Fed. Spec. FF-N-105 annular, screw or ring type.

2.10 Elastomeric Sheet: 40 mil thick extruded, homogeneous, waterproof, impervious, nonplasticized chlorinated polyethylene sheet, complying with ASTM D 2103.

2.11 Curing Materials:

2.11.1 Polyethylene Film: Non-staining type.

2.11.2 Paper: Non-staining, heavy building paper.

2.11.3 Curing Compound: Liquid membrane-forming compound, complying with ASTM C 309, Type I.

2.12 Cleaner: Neutral liquid chemical cleaner, biodegradable, free from crystalline salts, phosphate or water soluble alkaline salts, formulated for terrazzo, pH factor between 7 and 10.

3.0 EXECUTION:

3.1 Preparation: Clean and prepare substrate to comply with NTMA specifications for type of terrazzo application indicated. Clean area to receive terrazzo of loose chips and all foreign matter. Grind concrete substrate as required to provide surfaces within tolerances required by NTMA.

3.2 Installation:

3.2.1 Comply with NTMA and manufacturer's recommendations for proportioning mixes, for installation of strips, and for placing, curing, grinding, grouting, and finishing.

3.2.2 Provide terrazzo bases, thresholds, stair treads, and landings as required.

3.2.3 Install Divider and Accessory Strips in an adhesive setting bed, without voids below strips. Provide mechanical anchorage for adequate attachment of strips to substrate.

3.2.4 Provide Control Joints by installing angle type divider strips back-to-back with neoprene rubber filler cemented between strips, flush with finish floor.

3.2.5 Provide for Expansion Joints by installing angle type divider strips back-to-back, with removable filler of the width shown (but not less than 1/4 inch wide) between strips.

3.2.6 Install Abrasive Inserts where required.



SECTION 09510 ACOUSTICAL CEILINGS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of acoustical units in suspended ceilings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Acoustical Units shall conform to ASTM E 1264, Class A, and the following requirements:

2.1.1 Acoustical Panel Units for Exposed Grid System shall be the type and pattern required, NRC grade of 55 minimum when tested on mounting No. 7, trimmed and butt, with a LR coefficient of .75 and a STC range of 40-44. Nominal size shall be 24 inches by 48 inches or 24 inches by 24 inches. Finish shall be factory-applied white finish.

2.1.2 Acoustical Panel Units for Semi-Exposed Grid System shall be the type and pattern required, NRC grade of 55 minimum when tested on mounting No. 7, trimmed and butt, with a coefficient of .75 and a STC range of 40-44. Nominal size shall be 12 inches by 24 inches or 12 inches by 12 inches. Finish shall be factory-applied white finish.

2.1.3 Acoustical Tile Units for Concealed Grid System shall be the type and pattern as required, NRC grade of 55 minimum when tested on mounting No. 7. LR grade shall be 1, and STC range shall be 40-44. Edge detail shall be beveled or square, and joint detail shall be kerfed and rabbeted or as required. Nominal size shall be 12 inches by 12 inches, and finish shall be factory-applied white finish.

2.1.4 Metal Ceiling System: Pans shall be type required, and acoustical insulation pads shall be NRC grade 55 minimum when tested on mounting No. 7. The pattern shall be "c," with a nominal size of 12 inches by 24 inches. Edge detail shall be manufacturer's standard, and joint detail shall be beveled or cross-scored to simulate 12-inch by 12-inch units. Finish shall be factory-applied white baked enamel, two coats on exposed surfaces, one coat on edges and backs. Pads shall be completely enclosed, of material and thickness required for acoustical and fire test ratings, with a LR grade of 2.

2.1.5 Fire Resistive Ceilings: Acoustical fire resistive ceiling systems shall be rated for fire endurance when tested in accordance with ASTM E 119. Suspended ceiling shall have been tested with a specimen roof and/or floor assembly representative of the construction, including 09510-mechanical and electrical work within ceiling space openings for light fixtures, air outlets, and access panels.

2.1.6 Ceiling Sound Transmission Class and Test: STC range of acoustical units, when required, shall be determined in accordance with Ceiling Sound Transmission Test by Two-Room Method and reported in accordance with the appendix to ASTM E 90 for 11 frequency data or ASTM E 413 for 16 frequency data.

2.2 Suspension System shall be of the type required and shall conform to ASTM C 635 for intermediate- or heavy-duty systems. Surfaces exposed to view shall be aluminum or steel with a factory-applied white baked enamel finish, aluminum with a clear anodized finish as required or aluminum with colored factory-applied vinyl paint finish. Wall molding shall have a flange of not less than 15/16 inch and shall be provided with inside and outside corner caps.

2.3 Hangers shall be galvanized steel wire. Hangers and attachment shall support a 300-pound vertical load without failure of supporting material or attachment.

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2.4 Access Panels shall match adjacent acoustical tiles and shall be designed and equipped with suitable framing and fastenings for removal and replacement without damage. Panel shall be not less than 12 inches by 12 inches or more than 12 inches by 24 inches. An identification plate of 0.032-inch thick aluminum, 3/4 inch in diameter, stamped with the letters "AP" and finished the same as the unit shall be attached near on corner on the face of each access panel.

2.5 Fire Hazard Classification: All acoustical unit materials shall bear the UL label and marking, indicating fire hazard classification of acoustical unit materials as determined by ASTM E 84. Provide materials with the following fire hazard classifications:

Flame spread not more than 25.
Smoke developed not more than 50.

3.0 EXECUTION:

3.1 Acoustical Work shall be provided complete with all necessary fastenings, clips, and other accessories required for a complete installation.

3.2 Suspension System shall be installed in accordance with ASTM C 636 and as specified herein.

3.3 Wall Molding shall be provided where ceilings abut vertical surfaces.

3.4 Ceiling Tiles: Panels in exposed-grid system shall be held in place with manufacturer's standard hold-down clips.



Section 09530 Acoustical Insulation And Barriers

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of acoustical insulation and barriers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Leaded Vinyl shall be a loaded vinyl sound barrier product composed of lead, vinyl, and fiberglass reinforcing intended for use as a sound attenuation material. The material shall weigh either 72 or 120 ounces per square yard as required. Material thickness shall be 0.025 inch and 0.050 inch for 72 ounce and 120 ounce material, respectively.

2.2 Foil-Reinforced, Kraft-Faced, Mineral-Fiber Insulation shall be a faced insulation product designed to be used for thermal and acoustical insulation. Mineral fiber insulation shall be in accordance with Fed. Spec. HH-I-558, Form A, Class 1 or 2. Noise reduction coefficient (NRC) shall be not less than 0.55 for 1-inch thickness. Vapor transmission rate shall be not more than 0.02 perms. Surface burning characteristics shall be not more than a flame spread classification of 25, a fuel contribution of 50, and a smoke developed rating of 50, when tested in accordance with UL 723.

2.3 Vapor Barrier Facing Material shall be in accordance with ASTM C 1136, Type I or II as required. Facing material shall be a laminate of aluminum foil and kraft-reinforced mineral fiber scrim.

2.4 Sheet Lead shall be in acoustical attenuating product weighing 1 pound per square foot, with a thickness of not less than 1/64 inch. Lead sheet shall conform to Fed. Spec. QQ-L-201, Grade B.

2.5 Fire Hazard Classification: All acoustical insulation and barrier materials shall bear markings indicating the fire hazard classification as determined by ASTM E 84. Provide materials with the following fire hazard classifications: Flame spread not more than 25. Smoke developed not more than 50.

3.0 EXECUTION: (Section not used.)



Section 09535 Sound Absorbing Panels

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sound absorbing panels. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Perforated Steel Panels shall be modular units, fabricated of 22 gauge zinc-coated steel, and perforated with holes comprising not less than 10 percent of the panel area. Panels shall be suitably stiffened in both directions in accordance with panel size. Panels shall be filled with 2 inch thick, 1.5 lbs/cu ft acoustical insulation meeting Fed. Spec. HH-I-558, Form B, Type 1, Class 7. Installed panel units with acoustical insulation shall have a minimum Noise Reduction Coefficient (NRC) of .70 when tested in accordance with ASTM C 423. Panel units shall be furnished with two coats of white baked-on polyester paint on exposed surfaces and one coat on non-exposed surfaces.

2.2 Fiberglass Wall Panels shall be modular units, fabricated of 1-1/8 inch glass fiber board laminated to a nonwoven needle-punched fabric. The panels shall have a minimum NRC of .80 according to ASTM C 423. Panels shall be furnished with suitable wall fastening system.

2.3 Sound Attenuation Blankets shall be composed of mineral fiber of 4 lbs/cu ft density for 1 inch thickness, and 3 lbs/cu ft density for greater than 1 inch thickness conforming to ASTM C 665. Blanket R-value shall be 4 per inch.

2.4 Fire Hazard Classification: A sound absorbing panel unit and sound attenuation blankets shall have a fire hazard classification as determined by ASTM E 84. Provide materials with the following fire hazard classifications: Flame spread not more than 25. Smoke developed not more than 50.

3.0 EXECUTION:

3.1 Perforated Steel Panels shall be installed on ceiling suspension systems and wall furring systems that are compatible with perforated steel panels and that are already in place.

3.2 Fiberglass Wall Panels shall be installed on substrate wall surfaces that are clean, dry, and continuous, with no surface irregularities.



Section 09560 Wood Strip Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood strip flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wood Strip Flooring shall be manufactured from kiln-dried, plain-sawed, red oak lumber. Flooring shall be select grade, tongue and groove, end-matched, with manufacturer's standard channeling of back face of each strip. Size shall be 3/4 inch thick, 2-1/4 inches wide.

2.2 Maximum Moisture Content shall be 9 percent for wood strip flooring and 14 percent for other wood members.

2.3 Finishing Materials for Job Finished Flooring:

2.3.1 Stain: Penetrating type non-fading wood stain.

2.3.2 Wood Filler: Fed. Spec. TT-F-336.

2.3.3 Sealer: Penetrating type, pliable, wood-hardening finish/sealer.

2.3.4 Varnish: Alkyd resin varnish.

2.3.5 Urethane Finish: Fed. Spec. TT-C-542.

2.3.6 Floor Wax: Liquid, solvent-type, slip-resistant, conforming to Fed. Spec. P-W-158.

2.4 Composition Cork Expansion Strip: Fed. Spec. HH-C-576, Type I-B, Class 2.

2.5 Nails shall be Fed. Spec. FF-N-105 screw or ring type, zinc coated.

2.6 Asphalt Primer shall comply with ASTM D 41.

2.7 Asphalt Saturated Felt shall be organic, 15-pound, unperforated, complying with ASTM D 226.

2.8 Membrane shall be 6 mil, carbonized polyethylene sheeting, complying with Fed. Spec. L-P-512.

2.9 Wood Sleepers shall be No. 1 common, fir, hemlock, spruce, or yellow pine complying with requirements of the rules or standards under which produced with preservative treatment complying with AWPB LP-2.

2.10 Plywood Subflooring shall be DOC PS 1, "C-D INT- APA," with exterior glue, or "C-C EXT-APA."

2.11 Hardboard shall comply with ANSI/AHA A135.4, specially made for underlayment, 1/4 inch thick.

3.0 EXECUTION:

3.1 Preparation:

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3.1.1 Wood Subfloors shall be renailed where loose. Where unsatisfactory wood subflooring is removed, replace with new exterior or underlayment grade plywood. Apply hardboard underlayment just before finish floor is to be installed. Nail plywood subfloors with screw-type nails. Cover ground in crawl space with lapped and sealed 4 mil polyethylene or 55-pound rolled roofing, and cover subfloor with a lapped layer of 15-pound asphalt saturated felt.

3.1.2 Concrete Subfloors: Fill large cracks and holes in concrete structural floor slabs with a one part nonshrinking cement to three part sand grout with a latex or epoxy additive. Test for dryness with a 3 percent solution of phenolphthalein in grain alcohol (97 percent). Sand or trowel smooth irregularities to within allowable tolerances of NOFMA-01. Apply primer to concrete subfloors avoiding separating the emulsion. Apply two applications of hot asphalt mastic and asphalt saturated felt, then apply an additional layer of asphalt mastic. Provide flat 2 x 4 sleepers, 18 to 30 inches long impregnated with an approved wood preservative and laid in additional asphalt mastic; or apply a polyethylene sheet moisture protection system consisting of two courses of 1 x 2 nailing strips with a layer of polyethylene between, the first course being treated with preservative and adhered to the slab in rivers of mastic supplemented by a 1-1/2 inch concrete nail every 24 inches.

3.1.3 Treated Wood Cuts shall be treated with the original preservative.

3.2. Installation of Wood Strip Flooring:

3.2.1 General: Comply with NOFMA-01.

3.2.2 Expansion Space: For straight running pattern flooring and depending upon the width of pattern to be laid (usually the width of the room), provide approximately 1/2 inch of expansion space under base and base shoe along length of stripping, with approximately half as much space at ends of pattern.

3.2.3 Machine Sand installed unfinished flooring to remove offsets and non-level conditions.

3.2.4 Field Finish floors by applying a coat of wood paste filler and stain, if needed.

3.2.4.1 Natural Finish: Apply two coats of sealer and two coats of floor wax.

3.2.4.2 Varnish Finish: Apply three coats of floor varnish.

3.2.4.3 Urethane Finish: Apply multiple coats of urethane finish to build a dry film thickness of 1.0 mil.



SECTION 09566 WOOD BLOCK INDUSTRIAL FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood block industrial flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wood Block Creosoted Flooring shall be yellow pine, Douglas fir, or upland oak, preservative-treated, and in accordance with ASTM D 1031. Blocks shall be end-grain lumber with beveled corners and shall be 2, 2 1/2, or 3 inches thick, 3 inches wide, and 6 inches long.

2.2 Wood Block Natural Finish Flooring shall be yellow pine or upland oak, preservative-treated. Wood blocks shall be of the species, quality, and size described in ASTM D 1031. Blocks shall be end-grain lumber with beveled corners and shall be 2 inches thick, 3 inches wide, and 6 inches long.

2.3 Primer, Adhesive, and Filler shall be provided for wood block creosoted flooring.

2.4 Flexible Filler and Clear Industrial Sealer and Finish Coating shall be provided for wood block natural finish flooring.

3.0 EXECUTION:

3.1 Preparation: Before any work under this section is begun, all defects such as rough or scaling concrete, low spots, high spots, and uneven surfaces shall have been corrected and all damaged portions of concrete slabs shall have been repaired. If concrete curing compounds or surface sealers have been applied to the concrete slabs, they shall have been entirely removed from the slabs.

3.2 Installation:

3.2.1 For Wood Block Creosoted Flooring, a coat of priming oil shall be applied to the concrete slab. After the priming oil has dried, a squeegee coat of hot adhesive shall be applied. When the adhesive has hardened, the blocks shall be laid tightly together with the grain vertical. After the floor has been laid, two coats of filler shall be applied by squeegee. Expansion joints shall be provided.

3.2.2 For Wood Block Natural Finish Flooring, the joints shall receive filler and multiple coats of clear sealer and finish coating. Number of coats and method of application shall be adjusted to seasonal conditions.

3.3 Marking Lines: Floor surface in areas to receive lines shall be cleaned by scarification or by wire brushing. At least two coats of a marking material compatible with flooring materials shall be applied with suitable brush or spraying machine. The minimum total thickness of the marking lines shall be 4 mils.

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Section 09570 Wood Parquet Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood parquet flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wood Parquet Flooring shall be kiln-dried, plain-sawed, red oak. 2.2 Laminated (Plywood) Wood Block Flooring shall be prime grade, 12-inch x 12-inch x 1/2-inch nominal size, with manufacturer's standard urethane floor finish. Flooring shall be tongue and grooved as required for laying in checkerboard pattern.

2.3 Slat Block Flooring shall be clear grade, factory-prefinished with manufacturer's standard penetrating floor sealer treatment. Flooring shall be 9 inches x 9 inches x 5/16 inch, square pattern, tongue and groove, square edge matching. Pattern units of flooring shall be factory- assemble and adhered to removable paper facing for shipment to the project, or with slats fastened together with metal splines on backs.

2.4 Solid Block Flooring: Wood parquet flooring shall be prefinished in factory. Flooring shall be prime grade, tongue and groove, square edge, matching.

2.5 Plastic Impregnated Parquet Flooring shall be manufacturer's standard fabrication of solid hardwood slat-block parquet flooring, which has been impregnated with acrylic plastic and treated by gamma radiation and factory-finished. Flooring shall be composed of 5/16-inch thick x 6-inch squares fabricated into 12-inch square blocks, square edged, tongued and grooved, with tongue and groove matching.

2.6 Adhesive/Mastic shall be polyvinyl acetate (PVA) or special mastic of type recommended by the flooring manufacturer and complying with flammability and environmental control regulations.

2.7 Finish Materials for Unfinished Flooring:

2.7.1 Stain: Penetrating type non-fading wood stain.

2.7.2 Wood Paste Filler: Fed. Spec. TT-F-336, pigmented if required.

2.7.3 Sealer: TT-S-176, Class I, for white oak and red oak, Class II for beech, birch, and hard maple.

2.7.4 Varnish: Alkyd resin varnish conforming to Fed. Spec. TT-V-109.

2.7.5 Polyurethane Finish: Moisture curing type, polyurethane finish conforming to Fed. Spec. TT-C-542.

2.7.6 Floor Wax: Slip-resistant of a type recommended by flooring manufacturer.

2.8 Composition Cork Expansion Strip: Fed. Spec. HH-C-576, Type I-B, Class 2.

2.9 Nails and Screws shall be recommended by NOFMA-01.

2.10 Concrete Primer: ASTM D 41.

2.11 Asphalt-Saturated Felt: ASTM D 226.



2.12 Hardboard Underlayment: ANSI/AHA A135.4.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 For Adhesive Application on Concrete Slab: Test for dryness with a 3 percent solution of phenolphthalein in grain alcohol (97 percent), examine concrete surfaces and grind irregularities to within allowable tolerances of NOFMA-01, and apply primer to concrete subfloors.

3.1.2 For Adhesive Application on Wood Subflooring or Underlayment: Preparation of subflooring or underlayment shall be in compliance with the printed instructions of the flooring manufacturer.

3.1.3 For Nailed Application on Wood Subflooring or Underlayment: Cover subflooring with a layer of 15-pound asphalt-saturated felt, lap all edges at least 2 inches, and turn felt up at least 2 inches behind baseboards.

3.1.4 For Plastic Impregnated Parquet Flooring: Patch and level concrete subfloors with porous latex cement patching compound. If parquet is to be installed over existing synthetic floor or tongue and grooved subfloor wider than three and one quarter inches, a 1/4-inch plywood or untempered hardboard underlayment.

3.2 Installation:

3.2.1 General: Comply with recommendations and instructions by NOFMA in "Hardwood Flooring Installation Material" and by recommendation of American Parquet Flooring Association, Inc. Where flammable adhesives are used, provide safety sparkproof fans when natural ventilation is inadequate; prohibit smoking, lighting matches, metal heel caps, or any other flame or spark producing device.

3.2.2 Installation of Wood-Block Flooring on Concrete Slabs shall be by adhesive method.

3.2.3 Installation on Wood Subflooring or Underlayment: Apply one layer of saturated felt over wood or underlayment in troweled adhesive, and apply wood blocks with at least two 7-penny spiral or screw type flooring nails per block.

3.2.4 Installation of Plastic Impregnated Parquet Flooring: Install with special adhesive.

3.2.5 Sanding: Machine sand installed unfinished flooring to remove offsets and non-level conditions.

3.2.6 Field Finishing:

3.2.6.1 Base Finish: On same day that final sanding, buffing, and sweeping have been completed, apply a coat of wood paste filler. Apply stain if needed, then apply two coats of sealer.

3.2.6.2 Natural Finish: When floors are dry apply two coats of wax.

3.2.6.3 Varnish Finish: Apply 3 coats of floor varnish.

3.2.6.4 Urethane Finish: Apply urethane finish to build a dry film thickness of 1.0 mil.

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Section 09596 Gymnasium Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gymnasium flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Flooring shall comply with MFMA grading rules. Wood strips shall be second grade or better, edge cut, hard maple (*acer saccharum*), pressure treated, and kiln dried.

2.2 Asphalt Primer: ASTM D 41.

2.3 Asphalt Saturated Felt: Organic, 15 pounds unperforated, complying with ASTM D 226.

2.4 Membrane: 6 mil, carbonized polyethylene sheeting, complying with Fed. Spec. L-P-512.

2.5 Wood Sleepers: No. 1 common, fir, hemlock, spruce, or yellow pine complying with the rules or standards under which produced, with preservative treatment complying with AWPB LP-2.

2.6 Wood Trim: Provide wood baseboard molding, base shoe molding, and stair risers of same species as the wood flooring. Provide wood stripping, nosings, saddles, and thresholds, of same species and cut as the wood flooring.

2.7 Fibrated Kraft Building Paper: Minimum water-vapor permeability of 35 grams per sq. meter per 24 hours (perms). 2.8 Plywood Subflooring: DOC PS 1, "C-D INT-APA," with exterior glue; or "C-C EXT-APA."

2.9 Hardboard: ANSI/AHA A135.4, specially made for underlayment, 1/4 inch thick.

2.10 Nails: Fed. Spec. FF-N-105 annular, screw or ring type, zinc-coated.

3.0 EXECUTION:

3.1 Installation: Comply with MFMA standards and WSFI standards.

3.2 Expansion Spaces: Provide space at walls and other obstructions, interruptions, and terminations of flooring. Cover spaces with base trim, saddles, and thresholds.

3.3 Resiliently-Mounted Subflooring System: Install two layers of 1/2-inch plywood subflooring over moisture barrier and primed substrate. Nail gymnasium flooring to subflooring.

3.4 Steel Channel Sleeper System: Install moisture barrier over primed substrate. Nail channel sleepers to substrate over resilient channel backer, spaced 12 inches o.c. Lay resilient insulation boards in a continuous course between channel sleepers. Fasten gymnasium flooring with flooring clips.

3.5 Resiliently-Mounted Wood Sleeper System: Install 2 foot or 3 foot wood sleeper units at 12 inches o.c. without anchorage over moisture barrier and primed substrate. Nail gymnasium flooring to wood sleepers.



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3.6 Wood Subflooring and Sleeper System: Anchor sleeper clips to primed substrate, 24 inches o.c., for running sleepers at 16-inch spacing. Flood-coat substrate with 1/8-inch thick pour of hot asphalt. Shim 2 foot or 3 foot wood sleepers level and grout with 1:3 Portland cement-sand grout. Nail clips to sleepers at each juncture. Nail subflooring on sleepers. Cover subflooring with 30-pound, asphalt-saturated felt, with lapped seams. Install wood strip gymnasium flooring to subfloor.

3.7 Steel Spline Flooring on Vapor Barrier System: Prime concrete slab with asphalt primer before applying two layers of 15-pound, asphalt-saturated felt in asphalt mastic. Cover top layer of felt with a smooth continuous layer of asphalt mastic at least 1/8 inch thick. Lay 12-inch wide continuous strips of finish flooring firmly in asphalt mastic interlocking with saw-toothed steel splines into the slotted ends.

3.8 Steel Spline Flooring on Cork Underlayment System: Vaporproof slabs on grade as described in Section 3.7. Install 1/2-inch thick corkboard or 1/2-inch thick corkroll underlayment in 1/8 inch of asphalt mastic. Over corkboard, trowel on an additional coat of mastic, 1/8 inch thick. Lay 12-inch wide continuous strips of finish flooring firmly in asphalt mastic interlocking with saw-toothed steel splines into the slotted ends.

3.9 Sanding: Machine sand with coarse, medium, and fine grades of sandpaper, followed by disc sanding with 000 sandpaper. Clean with power vacuum. Proceed immediately with finish.

3.10 Finishing: Apply floor sealer (2 coats). Apply as many coats of gym floor finish as needed to build a minimum dry film thickness of 3 mils. Machine buff with steel wool.

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SECTION 09598 SOFTWOOD FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of softwood flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Douglas Fir Wood Strip Flooring, kiln-dried, vertical grain, complying with the requirements of WCLB for Grade C and better flooring.

2.2 Southern Pine Wood Strip Flooring, kiln-dried, edge grain, complying with the requirements of SPIB for Grade C and better.

2.3 Matching: Tongued and grooved, and end matched.

2.4 Pressure Treatment: Where flooring is exposed to the exterior, provide AWPB LP-2 pressure treatment after manufacture of flooring, followed by drying to required moisture content.

3.0 EXECUTION:

3.1 Plank Flooring: For strip flooring of face width over 3-1/4 inches (plank flooring), install two counter-set nails at each end of each piece and spaced not more than 32 inches along length of each piece. Fill holes with matching wood filler.

3.2 Treated Wood: Whenever treated wood flooring must be cut for installation, treat the cut with the preservative used in the original treatment immediately after cutting.



SECTION 09651 RESILIENT FLOORING - CEMENTITIOUS UNDERLAYMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cementitious underlayment for resilient flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Cementitious underlayment shall be one of the following factory-mixed types.

2.1 Magnesium Type: Mixture of sand, magnesium, cement, and/or gypsum. Add water before using.

2.2 Latex Type: Mixture of sand, cement, and latex in dry form to which water is added on the job, or two component type in which latex is added as a liquid on job.

2.3 Polyvinyl Acetate Type: Polyvinyl acetate resins, cement, gypsum, and sand mixtures.

2.4 Epoxy Type: Two-component epoxy type that merely requires mixing of the two parts in compliance with manufacturer's instructions.

2.5 Oxychloride Type: Mixture with cement and with or without magnesium.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 On Wood Subfloors lay 15-pound saturated felt in opposite direction to floor boards. Lap edges three inches.

3.1.2 Place Metal Lath nailed at 6-inch centers over felt.

3.2 Installation:

3.2.1 Install Cementitious Underlayment in strict compliance with instructions for the type of system used.

3.2.2 Where Feather Edges less than 1/4 inch thick are required, use a latex type underlayment for such thin parts of the underlayment.

3.2.3 On Concrete Surfaces apply latex or polyvinyl acetate liquid as a bonding agent before installing underlayment.

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Section 09655 Resilient Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of resilient flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Critical Radiant Flux: Resilient flooring material shall have an average critical radiant flux of 0.45 watts per square centimeter when tested in accordance with NFPA 253.

2.2 Resilient Tile Flooring:

2.2.1 Asphalt Tile: Fed. Spec. SS-T-312, Type I, 9 inches by 9 inches by 1/8 inch thick.

2.2.2 Homogeneous Vinyl Tile: Fed. Spec. SS-T-312, Type III, 12 inches by 12 inches by 1/8 inch thick.

2.2.3 Rubber Tile: Fed. Spec. SS-T-312, Type II, 12 inches by 12 inches by 1/8 inch thick.

2.3 Resilient Sheet Flooring:

2.3.1 Sheet Vinyl Flooring: Fed. Spec. L-F-475, Type II, Grade A, thickness 0.085 inch, with organic backing, not less than 72 inches wide.

2.3.2 Sheet Rubber Flooring: Solid, integrally colored, 36-inch wide; thickness 1/8 inch.

2.4 Base: Provide base complying with Fed. Spec. SS-W-40, either Type I rubber or Type II vinyl with matching end stops and preformed or molded corner units, with a 4 inch height, 1/8-inch gauge thickness, and standard top-set cove style.

2.5 Resilient Stair Treads: Provide rubber or vinyl stair tread units, full tread width, not less than 1/8 inch at tapered end and 1/4 inch at nosing, with two abrasive strip inserts full width of treads, and curved nosings 1-1/2 inches high.

2.5.1 Resilient Stair Base: Provide rubber or vinyl base, 7-inch cove type, for stair risers to match treads.

2.5.2 Resilient Stringer Skirt: Cut to match riser and tread profile to meet wall base height.

2.6 Resilient Edge Strips shall be 1/8 inch thick, homogeneous vinyl or rubber composition, tapered or bullnose edge, not less than 1 inch wide.

2.7 Metal Edge Strips shall be of width shown and of required thickness to protect exposed edge of resilient flooring. Provide units of maximum available length to minimize number of joints.

2.8 Adhesives:

2.8.1 Asphalt Emulsion: Clay type, Fed. Spec. MMM-A-115, Class 1.

2.8.2 Asphalt Emulsion: Chemical type, Fed. Spec. MMM-A-115, Class II.



2.8.3 Asphalt: Cutback type, Fed. Spec. MMM-A-110.

2.8.4 Adhesives (Cements): As recommended by flooring manufacturer to suit material and substrate conditions.

2.8.5 Cove Base Adhesive: Resin base waterproof adhesive with high initial tack.

2.8.6 Lining Felt Adhesive: Fed. Spec. MMM-A-137.

2.9 Concrete Slab Primer: Non-staining type.

2.10 Asphaltic Slab Primer: Fed. Spec. SS-A-701.

2.11 Wax: Fed. Spec. P-W-155.

2.12 Latex Underlayment: One-component or two-component factory mixed product containing powdered or liquid latex, cement, and other powders.

2.13 Smooth-Lining Felt:

2.13.1 Semi-Saturated Felt: Designed for application with vinyl floor covering materials, minimum weight of 0.75 lbs./sq. yd. 2.13.2 Asphalt Saturated Organic Felt: ASTM D 226, 15-pound plain.

2.14 Crack Filler: Type and brand recommended by floor covering manufacturer.

2.15 Hardboard: AHA A135.4, untempered type specially made for use as underlayment, 3/16 inch or 1/4 inch thick.

2.16 Plywood: DOC PS 1, "C-C EXT-APA" or "UNDERLAYMENT C-C Plugged EXT-APA," 3/4 inch thick unless otherwise noted for subfloors and 1/4 inch thick for underlayment.

2.17 Nails: Fed. Spec. FF-N-105, annular, screw, or ring type.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Concrete Floor Surfaces: Fill large cracks and holes in concrete structural floor slabs with one part nonshrinking cement to three part sand grout with a latex or epoxy additive. Level floors and fill small cracks and holes in concrete or underlayment with a commercial latex or epoxy floor patching compound.

3.1.2 Wood Floor Surfaces: Fill knot holes, cracks wider than 1/8 inch, and holes larger than 1/4 inch in diameter with a crack filler as specified for this application. All ridges or other uneven surfaces shall be planed, scraped, or sanded smooth. Nail heads shall be set. Renail wood underlayment and sub-floors where loose using annular or ring type coated nails. Remove and replace rotted, broken, or otherwise unsatisfactory wood subflooring and all other defective materials with new exterior grade plywood of equivalent thickness.

3.2 Installation:

3.2.1 Environmental Conditions: Spaces in which flooring work is to be performed shall be maintained between 70 F and 90 F at the floor level for at least 48 hours prior to starting the work, during the time work is performed, and for at least 48 hours after the work is completed. A minimum temperature of 55 F

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shall be maintained thereafter. Adequate ventilation shall be provided to remove moisture and fumes from the area.

3.2.2 Lay Tile From Center Marks established with principal walls, discounting minor offsets, so that tiles at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise indicated.



SECTION 09670 FLUID-APPLIED RESILIENT FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fluid-applied resilient flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Polyurethane Elastomer Flooring:

2.1.1 Polyurethane Elastomer Flooring shall be a poured-in-place urethane recreational type flooring surface system composed of a two-part urethane component system. Components shall be blended and poured as a liquid onto a prepared base. Primer material to provide adhesion of the polyurethane to the base shall be as recommended by the flooring manufacturer. Line paints shall be polyurethane. Flooring color, thickness, durometer hardness, and painted lines shall be as required.

2.1.2 Physical Properties: Material weight shall be approximately 0.83 pound per square foot per 1/8-inch thickness. Tensile strength shall be 200-600 psi in accordance with ASTM D 412. Hardness range shall be 55-65 Shore A-2 in accordance with ASTM D 2240. Elongation shall be limited to 150-350 percent in accordance with ASTM D 412. Compression set shall be 90 percent immediate recovery after 72 hours at 50 percent compression at 72 F in accordance with ASTM D 395. The material shall provide complete resistance to fungus.

3.0 EXECUTION: Base surface preparation shall be in strict accordance with polyurethane flooring manufacturer's recommendations. Cracks and construction joints shall be filled flush with materials recommended by the manufacturer.



Section 09675 Conductive Vinyl Tile Flooring

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of conductive vinyl tile flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Certificate of Conductance: Submit one copy of certificate signed by the Contractor, stating: "Conductive floors were tested by method prescribed in ANSI/UL 779 and were found to have a resistance of less than 1,000,000 ohms and greater than 25,000 ohms."

2.2 Conductive Vinyl Tile: Floor covering shall be of solid, unlaminated construction, manufactured from highest grade materials, with surface smooth, and free from foreign matter. Tile shall be resistant to the action of acids and other materials normally encountered in operating rooms. Tile shall comply with Fed. Spec. SS-T-312, Type III and shall be listed by Underwriters' Laboratories, Inc. Elements of tile shall be so proportioned that the electrically conductive components will not be more than 1/4 inch apart on the top surface. The tile flooring shall have an average critical radiant flux of 0.45 watts per square centimeter when tested in accordance with NFPA 253.

2.2.1 Tile Size: 1/8 inch by 12 inch by 12 inch tiles, micro- squared to ensure tight joints.

2.2.2 Slab Size: 1/8 inch by 36 inch by 36 inch slabs.

2.3 Conductive Adhesive: A two-part chemically setting, water- resisting, epoxy adhesive specially formulated for installing conductive vinyl tile. Adhesive shall form a conductive field under tile without use of copper foil strips.

2.4 Epoxy Calking Cement used to seal the perimeter joint shall be a material recommended by the manufacturer of the flooring.

3.0 EXECUTION:

3.1 Conductive Tile shall be installed by experienced mechanics under the supervision of factory-approved personnel. Install with conductive adhesive. Complete electrical grounding in compliance with the manufacturer's instructions.

3.2 Lay Tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise directed.

3.3 Cleaning: Three days after installation, conductive vinyl tile flooring shall be cleaned thoroughly. Do not apply wax to conductive flooring.

3.4 Testing: After completion of installation, conductive vinyl tile floors shall be tested by qualified technicians employed by the Contractor. Test shall be done in presence of the Contracting Officer. Testing procedure shall comply with ANSI/UL 779.



Section 09685 Carpeting

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of carpeting. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Carpet Cushions:

2.1.1 Rubberized Fiber-Hair Cushion: Burlap fabric reinforcing between top and bottom feltings of blended India jute fiber and new animal hair, less than 90 percent fiber and more than 10 percent hair, 5 oz/sq yd or more of rubberized coating on top surface and on bottom surface complying with Fed. Spec. DDD-C-001023, Type II. Weight shall be 39 oz/sq yd.

2.1.2 Ripple-Type Rubber: Sponge or foam rubber, molded with a rippled or waffled bottom surface, with an adhered top reinforcement of burlap or other fabric complying with Fed. Spec. ZZ-C-00811, Type I, Class 1 (firm), 1/4 inch thick.

2.1.3 High-Density Foam: Open-cell, homogenized latex-rubber, compounded for maximum moisture and aging resistance with ash and filler content not exceeding 50 percent, skinned-over on bottom surface, reinforced on top surface with an adhered fabric. Waffle pattern shall comply with Fed. Spec. ZZ-C-00811, Type I, Class 1, 1/4 inch thick.

2.1.4 Rebonded Polyurethane: Manufacturer's standard formulation of polyurethane foam and binders, to produce a flat carpet cushion complying with Fed. Spec. L-C-001676, Class I, 3/8 inch thick.

2.2 Carpet:

2.2.1 Carpet Fiber (Filament) and Yarn: Fed. Spec. DDD-C-95.

2.2.1.1 Wool: Natural, long staple, virgin wool carpet fiber, not less than 97 percent pure; permanently treated for resistance to insects and mildew.

2.2.1.2 Continuous Hollow Nylon: Continuous multiple hollow-core filament, of manufacturer's standard denier, texturized or crimped for "bulk", delustered with maximum of 15 percent delustrant.

2.2.1.3 Continuous Multilobal Nylon: Continuous nylon filament, of approximately 18 denier, in tri-lobal or similar cross section (not round or ovular), texturized for "bulk."

2.2.1.4 Continuous Round Nylon: Continuous round nylon filament, of not less than 15 denier, texturized or crimped for "bulk," delustered with maximum of 15 percent delustrant.

2.2.1.5 Continuous Nylon: Continuous nylon filament of type recommended by carpet manufacturer, approximately 15 denier, texturized or crimped for "bulk," delustered.

2.2.1.6 Staple Nylon: Long staple (approximately 7 inches) nylon fiber, of varying denier and crimp to resemble natural wool, delustered.

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2.2.1.7 Acrylic: Long staple (approximately 7 inches) acrylic fiber, of not less than 15 denier average, crimped to increase "bulk."

2.2.1.8 Modacrylic: Long staple (approximately 7 inches) modified acrylic fiber, modified to increase melting temperature, of not less than 15 denier average, crimped to increase "bulk."

2.2.1.9 Bi-Component Acrylic: Long staple (approximately 7 inches) 2-component acrylic fiber with differential shrinkage characteristic, which imparts spiral crimp for very high "bulk."

2.2.1.10 Polypropylene: Continuous polypropylene (olefin) filament, of 15 denier minimum, textured for "bulk."

2.2.1.11 High-Denier Polypropylene: Continuous filament or long staple polypropylene (olefin) fiber, of 75 denier minimum, textured for bulk, produced specifically for felted or needlepunched construction of carpet.

2.2.1.12 Polyester: Long staple (approximately 7 inches) fiber, of 15 denier minimum, textured for "bulk," specifically compounded for high stain resistance.

2.2.1.13 Nylon-Reinforced Vinyl: Continuous filament nylon thread, coated with vinyl to form a carpet yarn, produced specifically for woven (non-pile) carpet construction.

2.2.1.14 Stain-Resistant Polyester: Long staple (approximately 7 inches) fiber, of 15 denier minimum, unless otherwise indicated, textured for "bulk," specifically compounded for high stain resistance.

2.2.1.15 Destatic Fiber: Metallic carpet fiber, of stainless steel, aluminum, or other metal, either coated or plain, proven by test of round nylon filament pile carpet to be effective in controlling the static buildup in persons to below 3,000 volts when used in one of the following blends of fiber with ambient condition of 20 percent relative humidity and 70 F temperature, with oak-tanned, leather-soled shoes:

- a. 0.33 percent of stainless steel filament.
- b. 3.0 percent blend of plastic coated aluminum filament.

2.2.1.16 Pile Yarn, General: Provide yarn spun in manner recommended by yarn manufacturer and carpet manufacturer.

2.2.2 Carpet Construction:

2.2.2.1 General: Fabricate carpet by the construction method used in manufacturer's standard process.

2.2.2.2 Pile Density; Pitch and Rows: Fabricate carpet with the spacing of tufts both ways, uniformly spaced by manufacturer's standard method.

2.2.2.3 Variation of Yarn and Density: Wherever the texture or pattern of the completed carpet is not affected and also wherever the effect produced is acceptable to the Contracting Officer, the carpet manufacturer may (at his option) vary both the denier of the yarn and the density of the tufts, provided the product of the two remains constant and equal to the product of yarn denier and tuft density indicated (equal density factor maintained.)

2.2.2.4 Pile Height: Provide pile height as designated.

2.2.2.5 Primary Backing for Tufting: Provide manufacturer's standard backing material, but not less than one of the following:



2.2.2.5.1 Polypropylene: Woven polypropylene fabric weighing not less than 3.2 oz/sq yd.

2.2.2.5.2 Plastic Fabric: A non-woven fabric of 75 percent polypropylene fibers and 25 percent other plastic fibers, weighing not less than 4.0 oz/sq yd.

2.2.2.5.3 Jute: Woven jute fabric, weighing not less than 9.0 oz/sq yd.

2.2.2.6 Adhesive Binding for Tufting: Provide manufacturer's standard liquid latex or other resinous coating as required to produce the tuft bind strength indicated, but not less than 20 oz coating/sq yd.

2.2.2.7 Backing for Woven Carpet: Provide manufacturer's standard shot (weft), chain (warp), filler, and stuffer yarns, of jute, kraftcord, cotton, or synthetic fibers. Provide the number of yarns per row or pitch of pile as indicated or, if not indicated, provide manufacturer's standard arrangement as needed for strength and to make up the required carpet weight, but provide not less than 2 shot yarns (3 Axminster) and double chain yarn. Provide woven-through-the-back construction.

2.2.2.8 Back Coating for Woven Carpet: Provide manufacturer's standard liquid latex or other resinous coating, but not less than 10 oz/sq yd. 2.2.2.9 Backing for Knitted Carpet: Provide manufacturer's standard chain (warp) yarns of cotton or synthetic fibers and filler yarns of jute or kraftcord. Provide the number of yarns per row or pitch as indicated or, if not indicated, provide manufacturer's standard arrangement as needed for strength and to make up the required carpet weight, but not less than double chain yarns and double overlapping filler yarns.

2.2.2.10 Back Coating for Knitted Carpet: Liquid latex or other resinous coating, shall be more than 14 oz/sq yd.

2.2.2.11 Backing for Fusion-Bonded Carpet: Provide manufacturer's standard jute or synthetic fabric backing with latex or vinyl plastic coating for fusion-bonding of face pile.

2.2.2.12 Backing for Needle-punched Carpet: Type and weight designated or, if not designated, manufacturer's standard backing fabric produced specifically for needle-punching and felting of staple fibers to produce carpet, complying with Fed. Spec. DDD-C-001173 for construction of needle-punched carpet.

2.2.2.13 Secondary Fabric Backing: Provide, as a minimum, 8-ounce burlap or jute fabric, laminated to carpet with liquid latex adhesive, to achieve a stripping bond of not less than 2.0 lbs in. (Fed. Std. 191).

2.2.3 Dyeing Method: Carpet shall meet the requirements of both the wet-method color fastness rating of "Good" or better, per Fed. Spec. DDD-C-95, evaluated by Method 5610 of Fed. Std. 191 and the fade resistance established by the Association of Textile Chemists and Colorists for carpet when tested on the Atlas Fadeometer for the number of hours indicated. If method of dyeing and fade resistance are not indicated, use manufacturer's standard method, as needed to achieve a fade resistance of 40 hours.

2.2.4 Flame Spread: Carpet shall comply to UL 992 flame propagation index of less than 4.0 and Fed. Std 372, minimum average critical radiant flux of 0.50 watts per square centimeter. Carpet shall pass the methamine tablet test per DOC-FF-1-70 (pill test).

2.3 Bonded Cushion Carpet:

2.3.1 High Density Foam Backing: Open-cell homogenized latex-rubber compound for maximum moisture and aging resistance, with ash or filler content not exceeding 50 percent, skinned-over on exposed surface, complying with Fed. Spec. DDD-C-95, Class I, 38 oz/sq yd, 1/8 inch thick. Compression resistance shall be

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5 pounds minimum. Compression set shall be 15 percent maximum. Provide special formulation, tested with carpet for flame spread rating of less than 75 when by the tunnel test of ASTM E 84, or flame propagation index of less than 4.0 when tested by the UL chamber test, UL 992. Carpeting and cushion shall be tested together.

2.3.2 Primary Backing: Polypropylene weighing 3.5 oz/sq yd minimum.

2.3.3 Bonded Cushion Backing: Provide cushion bonded to carpet to achieve a stripping bond of not less than 2.0 lbs/in (Fed. Std. 191A), either cured-in-place or laminated sheet stock. At manufacturer's option, back coating used as tuft binding may be decreased or eliminated with the use of cured-in-place backing, provided required tuft bind strength is achieved.

2.4 Adhesive for Carpet: Waterproof, release type adhesive as recommended by the carpet manufacturer or cushion manufacturer. Provide adhesive that complies with flame spread rating required for the carpet installation, if any.

2.5 Adhesive for Seams: Waterproof, nonstaining adhesive furnished or recommended by the carpet manufacturer that complies with flame spread rating required for the carpet.

2.6 Carpet Edge Guard: Bend-down type of formed or extruded aluminum carpet edge guard stripping. Form units with concealed teeth to grip the carpet from below.

2.7 Tackless Carpet Stripping: Water-resistant plywood stripping, with angular pins protruding from the top. Provide stripping with 2 rows of pins wherever the carpet width is less than 20 feet and with 3 rows of pins wherever carpet width is 20 feet or more. Provide prenailed stripping, ready for anchorage to concrete or similar substrate.

2.8 Tape:

2.8.1 Cushion Tape: Single Face cloth, 2 inches wide.

2.8.2 Carpet Tape: Double-face cloth, 2 inches wide.

2.8.3 Seam Tape: Paperback, for latex sewing, 4 inches wide.

2.8.4 Seam Tape: Heat bonding, 4 inches wide.

2.9 Seam Thread: No. 18 waxed linen.

2.10 Masonry Nails: No. 9 (0.148 inch x 1 inch) hardened masonry nails, Fed. Spec. FF-N-105.

2.11 Latex Underlayment: One- or two-component, factory-mixed product containing powdered or liquid latex, cement, and other powders.

2.12 Crack Filler: Type and brand recommended by carpeting manufacturer.

2.13 Hardboard: AHA A135.4, untempered type specially made for use as underlayment, 3/16 inch or 1/4 inch thick.

2.14 Plywood: DOC PS 1, "C-C EXT-APA" or "UNDERLAYMENT C-C Plugged EXT-APA", 3/4 inch thick unless otherwise noted for subfloors and 1/4 inch thick for underlayment.



2.15 Nails: Fed. Spec. FF-N-105 annular, screw or ring type.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Fill Large Cracks and Holes in concrete structural floor slabs with a one-part, nonshrinking cement to three-part sand grout with a latex or epoxy additive. All ridges or other uneven surfaces shall be ground smooth; chalky or dusty surfaces shall be primed.

3.1.2 Level Floors and fill small cracks and holes in concrete or underlayment with a commercial latex or epoxy floor patching compound.

3.1.3 Wood Floor Surfaces: Knot holes, cracks wider than 1/8 inch, and holes larger than 1/4 inch in diameter shall be filled with a crack filler as specified for this application. All ridges or other uneven surfaces shall be planed, scraped, or sanded smooth.

3.1.4 Wood Underlayment and Subfloors shall be renailed where loose.

3.1.5 Rotted, Broken or Otherwise Unsatisfactory Wood Subflooring and all other defective materials shall be removed and replaced with new.

3.1.6 Undercut Wood Door Bottoms as required to allow clear door swing over newly carpeted areas.

3.2 Installation:

3.2.1 Install Carpet Edge Guard at every location where edge of carpet is exposed to traffic, except where another device, such as an expansion joint cover system or threshold, is indicated with an integral carpet binder bar.

3.2.2 Installation On Stairs: Install carpet by nailing or other secure method recognized to be durable and safe for traffic on stairs. Conceal edges. Avoid seams at points of high wear (nosings and treads). Cushion on stairs shall be twice the thickness of cushions on floor.

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SECTION 09710 MAGNESIUM OXYCHLORIDE FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of magnesium oxychloride flooring and base. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Magnesium Oxychloride Composition: Manufacturer's standard product shall comply with Mil. Spec. MIL-D-16680. Color to be used will be selected by the Contracting Officer from manufacturer's standard colors.

2.1.1 Mixing Solution: Magnesium chloride flake in a 22 degree Baume solution.

2.1.2 Physical Properties when tested in compliance with Mil. Spec. MIL-D-16680:

Fire Resistance: Incombustible

Water Absorption: Less than 7 percent

Abrasion Resistance: 0.072 inch

Impact Resistance: 0.031 inch; no chipping, crackling or detachment.

2.2 Saturated Felt: ASTM D 250, 15-pound type.

2.3 Expanded Metal Lath: ASTM C847, diamond mesh pattern, expanded copper alloy steel, weighing 3.4 pounds per square yard.

2.4 Bonding Agent: Trowel-applied bonding medium made by manufacturer of magnesium chloride.

3.0 EXECUTION:

3.1 Environmental Conditions: Installation shall not be started unless ambient temperature of area in which the work occurs is at least 50 F and rising and is maintained above 50 F without interruption while the work is being done and for at least three days after the completion of the work.

3.2 Preparation:

3.2.1 Concrete Floors shall be clean and free from all grease, dirt, paint, and all other foreign matter and shall be completely dry prior to flooring installation.

3.2.2 Wood Floors shall be structurally sound, firmly nailed, free of vibration, and broom clean. Lay felt over wood in opposite direction to joints in wood and overlap edges 3 inches.

3.3 Installation: Apply flooring and base to a uniform 1/2-inch thickness and steel-trowel to a uniform smooth density. Where cover base is installed over wood, trowel material on metal lath. Light traffic may be permitted 24 hours after installation and heavy traffic after 3 to 5 days.



SECTION 09720 EPOXY FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of epoxy flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Component materials for any one flooring type shall be from a single manufacturer. Cove bases of flooring material shall be provided if required.

2.2 Epoxy Quartz Chip Flooring shall be decorative floor surfacing system consisting of primer; topping including epoxy resin, hardener, and ceramic-coated quartz aggregate; and finish coat or coats. Topping, including aggregate, when tested in accordance with referenced standards, shall have a compressive strength of 9,800 psi (ASTM C 579), a flexural strength of 6,000 psi (ASTM C 580), a bond strength of 400 psi (ACI 503, Appendix A), and a water absorption rate of 0.06 percent (ASTM C 413). Tests of chemical resistance of cured resin, when immersed for 7 days in reagents, shall show no effect from ammonium hydroxide, carbon tetrachloride, citric acid, dimethyl formamide, formaldehyde (3 percent), heavy-duty detergent, heptane, hydrogen peroxide (28 percent), lactic acid, oleic acid, phenol solution, sodium carbonate (20 percent), sodium chloride (10 percent), sodium hydroxide (60 percent), sodium hypochlorite, sulfuric acid (30 percent), and urine.

2.3 Epoxy Flooring shall be industrial floor surfacing system consisting of primer; topping including epoxy resin, hardener, coloring agent, and selected fine aggregates; and finish coat or coats. Physical properties of topping, including aggregate, when tested in accordance with referenced standards, shall have a compressive strength of 7,500 psi (ASTM C 579), a tensile strength of 1,750 psi (ASTM C 307), a flexural strength of 3,000 psi (ASTM D 790), and a maximum thermal coefficient of linear expansion of 20 by 10⁻⁶ in/in/degrees F (ASTM D 696). The extent of burning shall be 0.25 inches maximum (ASTM D 635). Minimum bond strength shall be 200 psi, with 100 percent concrete failure (ACI 503, Appendix A). Abrasive resistance shall be 0.20 grams maximum (ASTM D 1044, 1,000 Grams, 1,000 Cycles). Impact strength, except topping bonded to concrete, shall be 0.05, with no chipping, cracking, or detachment of surfacing from concrete (MIL-D-3134, Para. 4.7.3). Tests of chemical resistance of cured resin when immersed 7 days in reagents, shall show no effect from acetic acid (5 percent), ammonium hydroxide (10 percent), citric acid (50 percent), cola syrup, fatty acid, motor oil (20W), hydrochloric acid (10 percent), salt water, sodium hydroxide (10 percent), sulfuric acid (10 percent), trisodium phosphate (5 percent), and water (distilled). There shall be only slight softening from ethyl alcohol (95 percent), jet fuel JP-4C, and mineral spirits. There shall be no effect but slight stain from nitric acid (10 percent).

2.4 Chemical-Resistant Epoxy Flooring shall be chemical-resistant floor surfacing system consisting of primer; topping including epoxy resin, hardener, coloring agent, and selected fine aggregates; and finish coat or coats. Topping, including aggregate, when tested in accordance with referenced standards, shall have a compressive strength of 9,500 psi (ASTM C 579), a flexural strength of 2,080 psi (ASTM C 580), an impact strength of 120 in. lbs (ASTM D 2794), a bond strength of 400 psi (ACI 503, Appendix A), and a water absorption rate of 0.04 percent (ASTM C 413). Tests of chemical resistance of cured floor surfacing system, when immersed for 7 days in reagents listed, shall show no effect from acetic acid (100 percent), chromic acid (10 percent), citric acid (20 percent), formaldehyde (37 percent), heavy-duty detergent, hydrochloric acid (37 percent), hydrogen peroxide (28 percent), lactic acid (85 percent), mineral spirits, nitric acid (40 percent), oleic acid, oxalic acid (10 percent), phosphoric acid (85 percent), potassium

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hydroxide (50 percent), sulfuric acid (75 percent), tannic acid (20 percent), tartaric acid (10 percent), and urine.

2.5 Epoxy Terrazzo Flooring shall be decorative floor surfacing consisting of primer, thermosetting epoxy resin matrix, decorative mineral aggregate, epoxy grout, and sealer. Heavy brass, 1/4-inch divider strips, and expansion joints shall also be provided as required. Materials shall conform to applicable National Terrazzo and Mosaic Association (NTMA) publications. Flooring, when tested in accordance with the standards, shall show no toxicity. Epoxy terrazzo flooring shall be self-extinguishing when tested in compliance with ASTM D 635.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Concrete Surfaces shall comply with ASTM C 811 unless otherwise indicated or required by manufacturers' instructions.

3.1.2 Wood Floors shall have contaminants removed by sanding, solvent cleaning, detergent cleaning, or other methods as required.

3.1.3 Primer Shall Be Applied over prepared substrate.

3.2 Installation:

3.2.1 Epoxy Quartz Chip Flooring, Epoxy Flooring and Chemical-Resistant Epoxy Flooring shall have a topping mix of aggregates and/or fillers trowel-applied to the following thicknesses:

- a. Epoxy quartz chip flooring: 1/4 inch.
- b. Epoxy flooring: 3/16 inch.
- c. Chemical-resistant epoxy flooring: 1/4 inch.

Finish or sealing coat or coats shall be applied after topping mix has cured. Floor system shall be applied to wall surfaces at locations indicated to form base with cove of radius and height designated. All interior and external corners of base shall be rounded.

3.2.2 Epoxy Terrazzo Flooring shall be applied according to NTMA recommendations and as follows. A 1/4-inch thick aggregate/filler topping mix and recommended curing compound shall be applied and the surface shall then be ground, rinsed, grouted, and reground. Finish or sealing coat or coats shall be applied after topping mix has cured. Floor system shall be applied to wall surfaces at locations designated to form base with cove of radius and height indicated. All interior and external corners of base shall be rounded.



SECTION 09731 CONDUCTIVE ELASTOMERIC LIQUID FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of conductive elastomeric liquid flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Carbon Black shall comply with ASTM D 561.

2.2 Acrylic/Urethane shall be water dispersed acrylic resin mixed with dry components and aggregates. Material shall comply with Mil. Spec. MIL-D-3134. Factory pre-mixed with carbon black.

2.3 Acrylic shall be modified high strength acrylic resin mixed with dry component powders with tensile strength of 4,890 psi, bond strength of 290 psi, and flexural strength of 1,650 psi, minimums, complying with Mil. Spec. MIL-D-3134.

2.4 Neoprene Rubber shall be water-phase neoprene rubber composition complying with NTMA Specifications, with tensile strength of 245 psi, bond strength to concrete of 255 psi, and compressive strength of 2,600 psi, minimums.

2.5 Latex shall be specially formulated, emulsion resin mixed with dehydrated powders. Comply with Paragraphs 3.4 through 3.22 of Mil. Spec. MIL-D-3134, except Paragraph 3.7 shall not apply.

2.6 Epoxy Emulsion shall be 100 percent non-volatile, thermosetting, two-part epoxy resin matrix with tensile strength of 4,000 psi, bond strength of 200 psi, and compressive strength of 14,000 psi.

2.6.1 Water-Emulsified Epoxy Resin shall have the following characteristics:

Viscosity: 180 centipoises at 25 C.

Specific weight: 9.2 pounds per gallon.

Color: opaque white.

Solids (minimum): 59 percent.

Stable after five freeze-thaw cycles.

2.6.2 Water Emulsified Hardener shall have the following characteristics:

Viscosity: 160-190 centipoises at 50 C.

Specific weight: 8.6 pounds per gallon.

Solids (minimum): 75.0 percent.

Stable after five freeze-thaw cycles.

2.7 Polyacrylate: A polyacrylate hydraulic cement copolymer and dry coreactant composite shall comply with requirements of Mil. Spec. MIL-D-3134. 2.8 Polyester: Thermosetting polyester topping resin, catalyst, and premixed fillers shall have tensile strength of 5,000 psi, compressive strength of 14,000 psi, and bond strength of 200 psi, minimums.

2.9 Fillers: Inert mineral or cellulosic material best suited for the resin binders shall be used. Filler in quantity necessary to impart required physical characteristics shall be furnished with particle size not greater than 3/16 inch in any dimension and shall contain sufficient fines to provide an even-textured, nonslip type of surface on the finished topping.

2.10 Primer shall be material that will penetrate into pores of substrate. Primer shall bond with topping to form a permanent monolithic bond between the substrate and the topping.

3.0 EXECUTION:

3.1 Environmental Conditions: Elastomeric liquid flooring installation shall not be started unless ambient temperature of area in which the work occurs is at least 50 F. and rising, and is maintained above 50 F. without interruption while the work is being done and for at least three days after the completion of the work.

3.2 Installation Over Wood Floors: Renail wood subfloors where loose, using annular or ring type zinc-coated nails. Remove and replace rotted, broken, or otherwise unsatisfactory wood subflooring and all other defective materials.

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3.3 Installation Over Concrete Floors: Roughen surfaces that are glossy, painted, or have loose surface material. Fill large cracks and holes.

3.4 Cleaning: Thoroughly clean all surfaces to receive flooring to remove all grease, oil, wax, dirt, dust, and other foreign matter.

3.5 Topping: Install topping 1/8 inch thick for epoxy type and 1/8 to 3/8 inch thick for other types.

3.6 Bases shall be cover type cast-in-place with 1-inch radius cove and shall be 6 inches high.

3.7 Finish or Sealer Coat shall be applied.

3.8 Testing: After completion of installation, test conductive floors. Test must prove that conductive floors comply with all requirements of ANSI/UL 779.



SECTION 09740 HEAVY-DUTY CONCRETE FLOOR TOPPING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of heavy-duty concrete floor topping. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Portland Cement: Comply with ASTM C 150, Type I or Type III.

2.2 Aggregate: Selected, clean, hard, and tough material, either crushed or natural, as approved by the Contracting Officer. Trap rock, granite, quartz, corundum, or manufactured products such as silicon carbide or heat-treated aluminum oxides are acceptable. They shall comply, in all respects except gradation, with ASTM C 33.

2.3 Water shall be clean, fresh, potable water approved by public health authorities for domestic consumption.

3.0 EXECUTION:

3.1 Preparation: Roughen surfaces of present concrete that are glossy, painted, or have loose surface material. Clean and sweep thoroughly to remove all grease, oil, wax, dirt, sand, dust, and all other foreign matter.

3.2 Installation: Nominal mixture shall be one part of Portland cement, one part of fine aggregate, and two parts of coarse aggregate by volume. Not more than four gallons of mixing water shall be used for each bag of Portland cement in the mixture. Mixing of concrete shall continue for at least one minute after all ingredients are in mixer.

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SECTION 09741 ARMORED FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of armored flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Premixed Topping: Specially factory formulated topping mix of Portland cement, ASTM C 150 Type I or III, iron aggregate and plasticizer designed to produce 28 day compressive strength of over 8,000 psi.

2.2 Water: Water shall be clean, fresh, potable water approved by public health authorities for domestic consumption.

3.0 EXECUTION:

3.1 Preparation: Roughen surfaces of present concrete floor that are glossy, painted, or have loose surface material. Clean and sweep thoroughly to remove all grease, oil, wax, dirt, sand, dust, and all other foreign matter.

3.2 Installation: Mix premixed topping and water in a paddle type mixer for three minutes. Place topping over prepared concrete slab to a thickness of 3/4 to one inch. Float and machine trowel as recommended by manufacturer. A shake of premixed topping shall be added. Hand trowel to a smooth hard finish. Cure by applying curing membrane complying with ASTM C 309.



SECTION 09750 BRICK FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of brick flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Brick Materials:

2.1.1 Light Traffic Paving Brick: ASTM C 902, Class SX, MX, or NX, Type I, II, or III, Application PS, PX, or PA.

2.1.2 Chemical-Resistant Brick: Solid brick, ASTM C 279, Type H or L.

2.1.3 Industrial Floor Brick: Solid brick, ASTM C 410, Type T, H, M, or L.

2.1.4 Base: Matching base shall be provided at walls and vertical elements, including stretcher units, internal and external corners, stops, and other locations as required. Type shall be square-top cove, round-top cove, or turn-up base.

2.1.5 Lining Units shall be brick units matching floor brick for lining pits and trenches and for curbs and pads occurring in floor brick field. Provide special trim shapes for continuous coverage of sub-strates.

2.1.6 Temporary Coating: Wax shall be compatible with cleaning method required to remove wax without damage to grout or brick.

2.2 Setting Materials:

2.2.1 Mortarless Applications:

2.2.1.1 Roofing Felt: ASTM D 226, 15-pound asphalt-saturated felt.

2.2.1.2 Fine Aggregate for Setting Bed: ASTM C 144 or stone screenings.

2.2.1.3 Sand for Joints: ASTM C 144, free of clay particles.

2.2.2 Portland Cement Applications:

2.2.2.1 Portland Cement: ASTM C 150, Type I, natural color or white, to produce the required color of mortar or grout.

2.2.2.2 Aggregate: ASTM C 144 or C 404, or both.

2.2.2.3 Liquid Admixture for Setting Bed and Grout: Liquid latex mortar additive with a compressive strength of 3,000 psi, bond strength of 500 psi, no loss in strength when exposed to ozone for 200 hours at an ozone concentration of 200 pphm and water absorption of 4 percent maximum.

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2.2.2.4 Bond Coat Admixture: High strength liquid latex mortar additive with a compressive strength of 5,000 psi, bond strength of 500 psi, tensile strength of 500 psi, no loss in strength when exposed to ozone for 200 hours at 200 pphm, and water absorption of 4 percent maximum.

2.2.2.5 Pigments: Commercial iron oxide, manganese dioxide, ultra-marine blue, chromium oxide, or carbon black, suitably compounded for use in mortar mixes.

2.2.2.6 Water: Clean and free of deleterious materials which would impair strength or bond.

2.2.3 Chemical-Resistant Mortar and Grout:

2.2.3.1 Sulfur Mortar: ASTM C 287, with silica or carbon filler.

2.2.3.2 Resin Mortar: Liquid resin and filler material shall comply with ASTM C 395. Resin shall be phenolic, furan, polyester, epoxy, or vinylester. Filler shall be silica or carbon.

2.2.3.3 Resin Grout: ASTM C 658, epoxy or furan.

2.2.3.4 Chemical-Resistant Membrane: Multiple-component asphaltic system consisting of asphalt primer and bituminous-coated glass fiber cloth embedded in hot-melt asphalt compound.

2.2.3.5 Expansion Joint Filler: Elastomeric sealant of type recommended and produced by mortar/grout manufacturer for type of application indicated. Include primer and backer rod where required.

2.2.4 Miscellaneous Materials:

2.2.4.1 Cleavage Membrane: 15-pound asphaltic felt, ASTM D 226, Type I, or 4-mil polyethylene sheeting, ASTM C 171.

2.2.4.2 Setting Bed Reinforcement: 2 inches by 2 inches, 16/16, welded wire fabric.

2.2.4.3 Sealer: Phenolic type or acrylic base non-slip material.

3.0 EXECUTION:

3.1 Expansion and Control Joints: Provide sealant-filled joints at locations and widths required. Install expansion joint filler where sealant type joints are required in chemical-resistant flooring.

3.2 UngROUTED Mortarless Brick Flooring:

3.2.1 Cushioning Material: Install roofing felt, two layers with edges butted to achieve uniform thickness, and fine aggregate setting bed screeded to depth required.

3.2.2 Lay Bricks and fill joints with sand. After all bricks are in place and all joints are filled, remove excess sand.

3.3 Latex-Modified Portland Cement Applications:

3.3.1 Apply Cement Slush Coat not to exceed 1/16 inch thickness.

3.3.2 Mix Portland Cement, Sand, and Liquid Admixture.



3.3.3 Spread and Screed Setting Bed to uniform thickness at subgrade elevations required.

3.3.4 Place Brick before initial set of cement occurs. Tamp and beat bricks to obtain full contact with setting bed.

3.3.5 Grout Joints as soon as possible after initial set of setting bed and cure grout.

3.4 Chemical-Resistant Sulfur Mortar Applications shall comply with ASTM C 287 unless otherwise directed.

3.5 Chemical-Resistant Resin Mortar Applications:

3.5.1 Bricklaying: Except as otherwise directed, bricklaying shall comply with ASTM C 399.

3.5.2 Tile Setting: Except as otherwise directed, tile setting shall comply with ANSI/ASTM C 723.

3.5.3 Chemical-Resistant Membrane: Provide chemical-resistant asphaltic membrane system over concrete substrates under chemical-resistant mortar applications where directed.

3.5.4 Set Bricks on Vertical Surfaces in compliance with ASTM C 399, using either resin mortar or sulfur as bed joint material, as required.

3.6 Chemical-Resistant Cement Mortar and Resin Grout Applications:

3.6.1 Application of brick in hydraulic cement mortar setting bed shall comply with ASTM C 398. Grouting joints with resin grout shall comply with ASTM C 723, unless otherwise directed.

3.6.2 Install Cleavage Membrane as required.

3.6.3 Reinforce Setting Bed with welded wire fabric as required.

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SECTION 09751 LIGHT-DUTY BRICK FLOORING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of light-duty brick flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Floor Brick (Brick Pavers): ASTM C 62, Grade SW, solid uncured brick, 1-1/4 inches thick by 3-1/4 inches by 8 inches.

2.2 Paving Brick: ASTM C 902, solid uncured brick of size selected by the Contracting Officer.

2.3 Masonry Mortar: ASTM C 270, Type M.

2.4 Portland Cement: ASTM C 150, Type I.

2.5 Aggregate for Masonry Mortar: ASTM C 144.

2.6 Hydrated Lime: ASTM C 207, Type S.

2.7 Aggregate for Cement Setting Beds: Sand as recommended in ASTM C 404.

2.8 Aggregate for Grout: Sand as recommended in ASTM C 404.

2.9 Pigments: Inert mineral oxides or carbon black.

2.10 Sand Setting Bed: ASTM C 33.

2.11 Commercial Cement Grout: Proprietary compound of Portland cement and additives.

2.12 Cleavage Membrane: 15-pound asphalt felt or 4-mil polyethylene sheeting.

2.13 Setting Bed Reinforcement: 2-inch by 2-inch, 16/16, welded wire fabric, ASTM A 185.

3.0 EXECUTION:

3.1 General Requirements: Do not use brick with chips, cracks, voids, discolorations, and other defects. Cut brick shall have clean, sharp, unchipped edges. Use full units without cutting wherever possible. Set brick with uniform joints.

3.2 Ungrouted Applications: Place sand setting bed and compact by tamping. Set brick closely together, and sweep fine sand over surface to fill joint irregularities.

3.3 Portland Cement Applications:

3.3.1 Preparation of Subbase: Clean subbase to remove dirt, dust, debris, and loose particles.



3.3.2 Install Cleavage Membrane and provide folded membrane material at overlapping edges to form lock joints.

3.3.3 Apply Slush Coat of cement grout over surface of concrete subbase about 15 minutes prior to placing setting bed.

3.3.4 Setting Bed: Mix one bag of Portland cement to 3 cu. ft. of sand. Use only enough water to produce a moist surface when setting bed is ready for setting of brick. Install reinforcing mesh if over a wood substrate.

3.3.5 Wet Brick several hours before laying. Do not lay bricks with free water on the surface.

3.3.6 Set Brick before initial set of cement bed occurs. Do not set brick on dry bed. Set and level each brick immediately.

3.3.7 Grout Joints as soon as possible after initial set of setting bed. Force grout into joints, strike flush, and tool slightly concave.

3.3.8 Use Portland Cement Grout mixed in the proportion of one bag of Portland cement to 2 cu. ft. of sand mixed with water to the consistency of heavy cream.

3.4 Masonry Mortar Applications:

3.4.1 Mix Mortar to comply with ASTM C 270 proportion specifications for Type "M" mortar.

3.4.2 Install Brick in bed joints of mortar with vertical joints filled with mortar. Remove excess mortar promptly as the work progresses.

3.4.3 Strike Joints flush with top surface of brick and tool slightly concave.

3.5 Pointing: During the tooling of joints, enlarge voids or holes and completely fill with mortar or grout.

3.6 Cleaning: Remove excess mortar/grout from exposed brick surfaces, wash, and scrub clean. Rinse with clean water.

3.7 Sealing and Waxing: After cleaning, apply a neutral sealer to brick flooring, and when dry, apply a suitable floor wax recommended for brick floors.



SECTION 09791 STANDARD FLOOR TREATMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for standard floor treatments for terrazzo, ceramic tile, oxychloride, concrete, and resilient flooring. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cleaning Compound: A liquid chemical cleaner containing non-ionic and anionic type detergents, non-reactive to flooring. Compound shall have no free metal alkalies, no artificial coloring, and no fatty acids. Compound shall be UL listed as "slip-resistant."

2.2 Stripper: An ammoniated stripper that will penetrate and loosen wax films without damaging flooring. Stripper shall be non-flammable and phosphate-free with a flash point of none to boiling.

2.3 Wax: Water-emulsion type, self polishing, made from 100 percent No. 1 prime Carnauba wax, UL listed as "slip-resistant."

2.4 Polish: Metal cross-linked copolymer, slip-resistant polish. Polish shall dry to clear gloss without buffing.

2.5 Sealer: Penetrating type seal that will fill pores and leave a clear, hard, non-flaking, non-tracking finish. Sealer shall be UL listed as to slip resistance.

3.0 EXECUTION:

3.1 Preparation and Installation:

3.1.1 Terrazzo and Oxychloride Floors:

3.1.1.1 Clean floors with a neutral liquid cleaner with pH factor as near seven as possible.

3.1.1.2 Apply two coats of sealer, and buff with electric polishing machine.

3.1.2 Ceramic Tile Floors: Scrub thoroughly using a neutral liquid cleaner, and apply one coat of penetrating sealer.

3.1.3 Concrete Flooring:

3.1.3.1 Scrub thoroughly using a neutral liquid cleaner. Apply stripper to remove stubborn grease, waxes, and polishes.

3.1.3.2 When floor is clean and dry, apply two coats of penetrating sealer.

3.1.4 Resilient Flooring:

3.1.4.1 Scrub with a light solution of neutral chemical cleaner. Use a stripper to remove build-up of old wax and polishes. Rinse clean, and allow to dry.



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3.1.4.2 Apply two coats of wax and machine polish.

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SECTION 09792 FLOOR TREATMENT NON-SLIP COATINGS ON CONCRETE FLOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for non-slip coatings on concrete floors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: A combination of pigmented two-part high solids urethane resin and a select gradation of sand shall be used. Color shall be selected from manufacturer's standard colors.

2.1 Tensile Strength and Elongation: Tensile strength shall be 580 psi, and elongation shall be 57 percent, all complying with ASTM D 412.

2.2 Water Absorption: Coatings shall not absorb water, in accordance with ASTM D 570.

2.3 Coefficient of Friction shall comply with ASTM D 1894.

2.4 Abrasion Resistance shall be ASTM D 1044 Taber Abraser, H-18 wheel, 1 kg load. Weight loss shall be 0.20 grams after 1,000 cycles.

2.5 Impact shall be by a 2-pound falling ball at 150 inch-pounds pressure, 0.05 inch maximum indentation with no cracking.

2.6 Chemical Resistance shall be non-staining to most common chemicals, such as 10 percent acetic acid, 10 percent citric acid, 10 percent sodium hydroxide, and ethyl alcohol.

3.0 EXECUTION: Concrete Floors shall be either acid etched or sand blasted. Surface to be coated shall be clean, dry, and free from surface contaminants.



Section 09793 Floor Treatment - Refinishing Wood Floors

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for refinishing wood floors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cleaning Compound: A liquid chemical cleaner containing non-ionic and anionic type detergents, non-reactive to wood flooring. Compound shall have no free metal alkalies, no artificial coloring and no fatty acids. Compound shall be UL listed as "slip-resistant."

2.2 Varnish Remover: Non-flammable paint and varnish remover.

2.3 Stain: Penetrating type non-fading wood stain.

2.4 Wood Filler: Paste type wood filler, pigmented if necessary to match sample, complying with Fed. Spec. TT-F-336.

2.5 Floor Sealer: Penetrating type, pliable, wood-hardening finish/sealer.

2.6 Floor Varnish: Alkyd resin varnish, specially compounded for floor finish, Fed. Spec. TT-V-109.

2.7 Urethane Finish: Specially compounded for wood floor finish, moisture curing type, for multiple-coat application.

2.8 Floor Wax: Liquid, solvent-type, slip-resistant, CID A-A-1550, Type II.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Cleaning: Scrub thoroughly with cleaning compound and warm water. Rinse with clean water, mop dry, and buff with polishing machine.

3.1.2 Varnish Removal: Apply paint and varnish remover as required.

3.1.3 Sanding: Traverse floors two times with an electric-powered sanding machine. A rotary disc sander may be used for the final cut, but first cut shall be made with a drum-type machine. The first cut may be made crosswise of the grain or at a 45-degree angle. Make second cut in direction of grain. Use No. 1/2 sandpaper for first traverse and No. 0 for second traverse. Use an electric edger or hand sander for sanding areas near walls, in corners, and small closets.

3.2 Installation:

3.2.1 Apply Wood Paste Filler, followed by wiping cross-grain to work into pores and cracks.

3.2.2 Apply Stain if needed to match selected finish.

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3.2.3 Apply Sealer (2 coats) complying with Fed. Spec. TT-S-176. Use Class I for white oak and red oak floors and Class II for beech, birch, and hard maple floors.

3.2.4 Apply Floor Varnish, (3 coats) buffing after each coat. First coat may be thinned as a sealer.

3.2.5 Apply Urethane Finish. Apply as many coats as needed to build a dry film thickness of 1.0 mil.

3.2.6 When Floors are Dry, apply two coats of wax complying with Fed. Spec. P-W-155; concentration 12 percent. Spread the wax at the rate of 1,500 square feet per gallon and polish the floors with a weighted floor brush or an electric polisher.

3.2.7 Protection: Upon completion of work, cover all traffic areas immediately with nonstaining kraft paper or polyethylene, taped along edges, and maintain floor protection until acceptance.



SECTION 09910 EXTERIOR PAINTING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and application of paint to exterior surfaces. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Application procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Painting materials for the exterior surfaces indicated shall conform to the following Federal and Military Specifications:

2.1 Concrete:

TT-P-19 Paint, Acrylic Emulsion, Exterior

2.2 Concrete Masonry Units:

TT-F-1098 Filler, Block, Solvent-Thinned, for Porous Surface (Concrete Block, Cinder Block, Stucco, Etc.).

TT-P-19 Paint, Acrylic Emulsion, Exterior.

TT-P-96 Paint, Latex Base, Exterior.

TT-P-97 Paint, Styrene-Butadiene Solvent Type, White (for Exterior Masonry).

2.3 Stucco:

TT-F-1098 Filler, Block, Solvent- Thinned, for Porous Surfaces (Concrete Block, Cinder Block, Stucco, Etc.).

TT-P-19 Paint, Acrylic Emulsion, Exterior.

TT-P-96 Paint, Latex Base, Exterior.

TT-P-97 Paint, Styrene-Butadiene Solvent Type, White (for Exterior Masonry).

2.4 Asbestos Cement:

TT-P-19 Paint, Acrylic Emulsion, Exterior

2.5 Wood, Unpainted:

TT-P-001984 Primer Coating, Latex Base, Exterior (Undercoat for Wood), White and Tints.

MIL-P-28582 Primer Coating, Exterior, Lead Pigment-Free (Undercoat for Wood, Ready-Mixed, White and Tints).

2.6 Wood, Primed:

TT-P-19 Paint, Acrylic Emulsion, Exterior.

TT-P-31 Paint, Oil: Iron-Oxide, Ready-Mixed, Red and Brown.

TT-P-37 Paint, Alkyd Resin, Exterior Trim, Deep Colors.

TT-P-102 Paint, Oil, Alkyd Modified, Exterior, White and Tints.

TT-P-1510 Paint, Latex, Exterior, for Wood Surfaces, White and Tints

2.7 Wood, Decks and Porches, Primed and Unpainted:

TT-E-487 Enamel: Floor and Deck.

2.8 Wood, to Receive Stain:

TT-S-708 Stain, Oil; Semi-Transparent, Wood, Exterior.

TT-S-001992 Stain, Latex, Exterior for Wood Surface.

2.9 Concrete Walls and Floors of Swimming Pools:

TT-P-95 Paint, Rubber: For Swimming Pools and Other Concrete and Masonry Surfaces.

2.10 Ferrous Metals, Ungalvanized and Unpainted.

TT-P-86 Paint, Red-Lead-Base, Ready-Mixed.

TT-P-645 Primer, Paint, Zinc-Chromate, Alkyd Type.

2.11 Ferrous Metals, Galvanized but Unpainted:

TT-P-641 Primer Coating: Zinc Dust-Zinc Oxide (for Galvanized Surfaces).

MIL-P-26915 Primer Coating, Zinc Dust Pigmented, for Steel Surfaces.

2.12 Ferrous Metals, Primed:

TT-E-489 Enamel, Alkyd, Gloss (for Exterior and Interior Surfaces).

TT-E-1593 Enamel, Silicone Alkyd Copolymer, Gloss (for Exterior and Interior Use).

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TT-P-31 Paint, Oil: Iron-Oxide, Ready-Mixed, Red and Brown.

TT-P-37 Paint, Alkyd Resin, Exterior Trim, Deep Colors.

TT-P-38 Paint, Aluminum, Ready-Mixed.

TT-P-102 Paint, Oil, Alkyd Modified, Exterior, White and Tints.

2.13 Aluminum or Aluminum Alloy, Unpainted:

TT-P-645 Primer, Paint, Zinc-Chromate, Alkyd Type.

2.14 Aluminum or Aluminum Alloy, Primed:

TT-E-489 Enamel, Alkyd, Gloss (for Exterior and Interior Surfaces).

TT-E-1593 Enamel, Silicone Alkyd Copolymer, Gloss (for Exterior and Interior Use).

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Concrete, Concrete Masonry Units and Stucco: Remove all glaze, efflorescence, laitance, dirt, grease, oil, asphalt, surface deposits of iron, and other foreign matter. Apply a filler to areas of irregular surface profile.

3.1.2 Asbestos Cement: Remove stains with solvent. Do not wire brush.

3.1.3 Wood: Clean off foreign matter. On seasoned knots, scrape, clean, and apply thin coat of knot sealer. Scrape off or remove pitch with mineral spirits or turpentine. Set nails and prime and fill nail holes and other surface imperfections with putty, exterior spackling compound, or plastic wood filler. Allow to dry and sand smooth.

3.1.4 Ferrous Metals, Ungalvanized: If not shop-coated, solvent clean. Remove loose rust, mill scale, and other foreign matter by power wire brushing or sandblasting.

3.1.5 Ferrous Metals, Galvanized, and Aluminum and Aluminum Alloy: Solvent clean and treat with vinyl type wash coat conforming to Mil. Spec. DOD-P-15328.

3.2 Application: Provide complete hiding and uniform thickness of coats.

3.2.1 Concrete Masonry Units: Apply filler coat to bare concrete masonry units and allow to dry. Follow with finish coats.

3.2.2 Wood to Receive Paint: Prime bare wood prior to application of finish coats.

3.2.3 Ferrous Metals: Prime bare metal prior to application of finish coats.

3.2.4 Aluminum and Aluminum Alloy: Prime bare metal prior to application of finish coats.



SECTION 09920 INTERIOR PAINTING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and application of paint to interior surfaces. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Application procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Painting materials for the interior surfaces indicated shall conform to the following Federal and Military Specifications.

2.1 Concrete:

2.1.1 Walls and Nontextured Ceilings:

- TT-E-508 Enamel, Interior, Semigloss, Tints and White.
- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-P-29 Paint, Latex Base, Interior, Flat, White and Tints.
- TT-P-30 Paint, Alkyd, Odorless, Interior, Flat, White and Tints.
- TT-P-95 Paint, Rubber: For Swimming Pools and Other Concrete and Masonry Surfaces.
- TT-P-1511 Paint, Latex (Gloss and Semigloss, Tints and White) (for Interior Use).

2.1.2 Textured Ceilings:

- TT-C-555 Coating, Textured (for Interior and Exterior Masonry Surfaces).

2.1.3 Floors:

- TT-P-91 Paint, Rubber-Base, for Interior Use (Concrete and Masonry Floors).

2.2 Concrete Masonry Units:

- TT-C-535 Coating, Epoxy, Two Component, for Interior Use on Metal, Wood, Wallboard, Painted Surfaces, Concrete, and Masonry.
- TT-C-542 Coating, Polyurethane, Oil-Free, Moisture Curing.
- TT-C-550 Coating System Glaze, High Performance, (Solvent Base) for Interior Surfaces.
- TT-E-505 Enamel, Odorless, Alkyd, Interior, High Gloss, White and Light Tints.
- TT-E-506 Enamel, Alkyd, Gloss, Tints and White (for Interior Use).
- TT-E-508 Enamel, Interior, Semigloss, Tints and White.

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- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-F-1098 Filler, Block, Solvent-Thinned, for Porous Surfaces (Concrete Block, Cinder Block, Stucco, Etc.).
- TT-P-29 Paint, Latex Base, Interior, Flat, White and Tints.
- TT-P-30 Paint, Alkyd, Odorless, Interior, Flat, White and Tints.
- TT-P-95 Paint, Rubber: For Swimming Pools and Other Concrete and Masonry Surfaces.
- TT-P-1511 Paint, Latex (Gloss and Semigloss, Tints and White) (for Interior Use).

2.3 Asbestos Cement:

- TT-E-508 Enamel, Interior, Semigloss, Tints and White.
- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-P-29 Paint, Latex Base, Interior, Flat, White and Tints.
- TT-P-30 Paint, Alkyd, Odorless, Interior, Flat, White and Tints.
- TT-P-1511 Paint, Latex (Gloss and Semigloss, Tints and White) (for Interior Use).

2.4 Gypsum Wallboard and Plaster:

- TT-C-535 Coating, Epoxy, Two Component, for Interior Use on Metal, Wood, Wallboard, Painted Surfaces, Concrete, and Masonry.
- TT-C-542 Coating, Polyurethane, Oil-Free, Moisture Curing.
- TT-C-550 Coating System Glaze, High Performance, (Solvent Base) for Interior Surfaces.
- TT-E-505 Enamel, Odorless, Alkyd, Interior, High Gloss, White and Light Tints.
- TT-E-506 Enamel, Alkyd, Gloss, Tints and White (for Interior Use).
- TT-E-508 Enamel, Interior, Semigloss, Tints and White.
- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-P-29 Paint, Latex Base, Interior, Flat, White and Tints.
- TT-P-30 Paint, Alkyd, Odorless, Interior, Flat, White and Tints.



- TT-P-650 Primer Coating, Latex Base, Interior, White (for Gypsum Wallboard).
- TT-P-1511 Paint, Latex (Gloss and Semigloss, Tints and White) (for Interior Use).
- TT-S-179 Sealer Surface: Pigmented Oil for Plaster and Wallboard.

2.5 Wood Other Than Floors:

2.5.1 Painted Surfaces:

- TT-E-505 Enamel, Odorless, Alkyd, Interior, High Gloss, White and Light Tints.
- TT-E-506 Enamel, Alkyd, Gloss, Tints and White (for Interior Use).
- TT-E-508 Enamel, Interior, Semigloss, Tints and White.
- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-P-29 Paint, Latex Base, Interior, Flat, White and Tints.
- TT-P-1511 Paint, Latex (Gloss and Semigloss, Tints and White) (for Interior Use).

2.5.2 Stained, Varnished, or Natural Finishes Surfaces:

- TT-S-176 Sealer, Surface, Varnish Type, Floor, Wood and Cork.
- TT-S-711 Stain; Oil Type, Wood, Interior.
- TT-V-85 Varnish, Oil, Low Sheen, Brush or Spray Application.
- TT-V-109 Varnish, Spar, Alkyd-Resin.
- TT-V-119 Varnish, Spar, Phenolic-Resin.
- TT-V-121 Varnish, Spar, Water-Resisting.

2.5.3 Furniture:

- TT-S-711 Stain; Oil Type, Wood, Interior.
- TT-V-86 Varnish, Oil, Rubbing (for Metal and Wood Furniture).

2.6 Wood Floors:

2.6.1 Painted Surfaces:

- TT-E-487 Enamel: Floor and Deck.

2.6.2 Stained or Natural Finished Surfaces:

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- P-W-155 Wax, Floor, Water-Emulsion.
- P-W-158 Wax, General Purpose, Solvent Type.
- TT-C-542 Coating, Polyurethane, Oil-Free, Moisture Curing.
- TT-S-176 Sealer, Surface, Varnish Type, Floor, Wood and Cork.

2.7 Ferrous Metals:

2.7.1 Ungalvanized and Unpainted:

- TT-P-86 Paint, Red-Lead-Base, Ready-Mixed.
- TT-P-615 Primer Coating: Basic Lead Silico Chromate, Ready Mixed.
- TT-P-645 Primer, Paint, Zinc-Chromate, Alkyd Type.
- TT-V-51 Varnish: Asphalt.

2.7.2 Galvanized but Unpainted:

DOD-P-15328 Primer (Wash), Pretreatment, (Formula No. 117 for Metals) (Metric).

2.7.3 Primed:

- TT-E-489 Enamel, Alkyd, Gloss (for Exterior and Interior Surfaces).
- TT-E-505 Enamel, Odorless, Alkyd, Interior, High Gloss, White and Light Tints.
- TT-E-506 Enamel, Alkyd, Gloss, Tints and White (for Interior Use).
- TT-E-508 Enamel, Interior, Semigloss, Tints and White.
- TT-E-509 Enamel, Odorless, Alkyd, Interior, Semigloss, White and Tints.
- TT-E-545 Primer (Enamel-Undercoat, Alkyd, Odorless, Interior, Flat, Tints and White).
- TT-P-30 Paint, Alkyd, Odorless, Interior, Flat, White and Tints.
- TT-P-38 Paint, Aluminum, Ready-Mixed.

2.8 Fire Retardant Paint:

2.8.1 Non-Metallic Surfaces:

- TT-P-26 Paint, Interior, White, Tints and Black, Fire Retardant.

2.8.2 Metallic Surfaces:

- TT-P-001932 Paint, Latex Base, Interior, White, Tints and Black, Fire Retardant.

3.0 EXECUTION:



3.1 Preparation:

3.1.1 Concrete and Concrete Masonry Units: Remove all glaze, efflorescence, laitance, dirt, grease, oil, asphalt, and surface deposits of iron and other foreign matter.

3.1.2 Asbestos Cement: Remove stains with solvent. Do not wire-brush.

3.1.3 Gypsum Wallboard: Remove dirt and dust prior to application of first coat.

3.1.4 Plaster: Age at least 30 days. Clean, remove loose matter, and repair surface irregularities. Instrument-measured moisture content shall not exceed 8 percent.

3.1.5 Wood: Remove foreign matter. On seasoned knots, scrape, clean, and apply thin coat of knot sealer. Scrape off or remove pitch with mineral spirits or turpentine. Set nails, and prime and fill nail holes and other surface imperfections with putty or plastic wood filler. Allow to dry and sand smooth.

3.1.6 Ferrous Metals, Ungalvanized: If not shop-coated, clean with solvent. Remove loose rust, mill scale, and other foreign matter by proper wire brushing or sand blasting.

3.1.7 Ferrous Metals, Galvanized: Clean with solvent.

3.2 Application: Provide complete hiding and uniform thickness of coats.

3.2.1 Concrete Masonry Units: Apply filler coat to bare concrete masonry unit surfaces where required and allow to dry. Follow with finish coats.

3.2.2 Gypsum Wallboard and Plaster: Touch up suction spots or overall application of base coat or sealer to produce a uniform color or gloss prior to application of finish coats.

3.2.3 Wood to Receive Stain: Sand lightly after application of stain. On open-grain wood surfaces, apply wood filler after staining as required. Sand smooth. Sand lightly between coats of varnish.

3.2.4 Ferrous Metals: Prime bare metal prior to application of finish coats.



SECTION 09941 PAINTING OF WATER STORAGE TANK INTERIOR SURFACES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for painting water storage tank interior surfaces. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The following materials form a part of this section of the specification: Mil. Spec. DOD-P-15328, SSPC Paint 8, and Mil. Spec. MIL-P-15930.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 Respirators: Respirators shall be worn by all persons engaged or assisting in spray painting. Air-fed respirators will be worn by all persons engaged in spray painting in confined areas (water thinned coatings excluded).

3.1.2 Forced Ventilation: Whenever surface preparation or painting operations include the use of volatile organic solvents, the enclosed space shall be made safe at all times from fire and explosion as determined by a calibrated explosimeter or organic vapor analyzer. During the painting operation, sufficient exhaust ventilation shall be provided to exchange the air in the enclosed spaces with fresh air at the rate of 5,000 cfm for each spray gun in operation. All parts of the enclosed spaces shall be swept by moving air. Exhaust ducts shall discharge clear of working areas and away from sources of possible ignition. If the ventilation fails, operations shall be stopped and the compartment evacuated until sufficient exhaust ventilation is provided.

3.1.3 Blast Cleaning: Ferrous surfaces shall be dry blast cleaned to near white metal grade, which shall be in compliance with SSPC-SP 5, except that paragraphs 3.1, 3.2, 3.3, and 3.10 shall not be applicable and except that a limited relaxation from the uniform white metal grade of surface cleanliness will be permitted, as follows. The metal shall be cleaned to such a degree that were a large surface to be divided into 6-inch squares, at least 75 percent of the subdivisions would meet the white metal grade of cleanliness and the remaining subdivisions would be randomly distributed. Within these small, randomly distributed areas a minor relaxation from white metal cleanliness would be permitted, consisting only of very slight shadows, stains, and discolorations stemming from very thin, adherent, sparsely scattered residues of mill scale and corrosion products. No relaxation from the white metal grade will be permitted on surface irregularities such as edges, interior angles, welds, rivet lines, and junctions of joining members. The overall blasting effort expended shall be not less than two-thirds (2/3) of that which would be required to accomplish the white metal grade of cleanliness on the specific surfaces involved, but this limitation shall not be construed as a waiver of any of the requirements above. Remove weld spatter not dislodged by blasting with impact or grinding tools. Surfaces shall be dry at the time of blasting.

3.1.4 Surface Protection: Within 8 hours after cleaning but in any event prior to the deposition or formation of any detectable moisture, contaminants, or corrosion, all ferrous surfaces that have been blast cleaned to the near-white metal grade shall be cleaned of dust and abrasive particles by brushing, vacuum cleaning, and/or blowdown with clean, dry compressed air, and shall be given the pretreatment and first coat of paint.



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3.1.5 Pretreatment: All sandblasted surfaces shall receive a washcoat pretreatment complying with Mil. Spec. DOD-P-15328. Application shall be by spray, and all requirements of the specification concerning mixing, thinning, application, and spreading rate shall be followed. All materials not applied within a maximum of eight hours after mixing shall be discarded and must not be used.

3.2 Installation:

3.2.1 Primer Paint: All pretreated surfaces shall receive two coats of vinyl paint complying with Mil. Spec. MIL-P-15930. Application shall be by brush or spray. All corners, angles, welds, rivets, and other surface irregularities shall receive one additional preliminary spray coat. The succeeding primer coat (or initial finish coat) shall not be applied until the primer is dry to touch. The color of alternate coats shall provide contrast to assist in obtaining complete coverage.

3.2.2 Finish Paint: All primed surfaces shall receive a minimum of two coats of Aluminum Vinyl Finish Paint complying with SSPC Paint 8. The paint shall be formulated as specified except that high boiling solvents such as cyclohexanone shall not be used in the formulation. High boiling solvents may be substituted for the ketones specified in the thinner only if ambient temperatures at the time of application exceed 75 F (24 C). Application shall be by spray. All corners, angles, welds, rivets, and other surface irregularities shall receive one additional preliminary spray coat. The succeeding coat shall not be applied until the first coat is dry to touch.

3.2.3 Thickness Requirements: Apply the washcoat pretreatment to a dry film thickness of at least 0.3 mils but not exceeding 0.5 mils. Apply the primer paint to produce a dry film of approximately 2.5 mils. Apply the finish paint such that the resulting total system has a minimum dry film thickness of at least 5 mils at its thinnest point. If this thickness is not obtained in the specified number of coats, apply additional coats of the finish paint to meet the minimum thickness requirement at no additional cost to the Government. Final thickness measurements shall be made by the Contractor in the presence of the Contracting Officer using a magnetic thickness gauge as specified in SSPC-PA 2.

3.2.4 Final Drying Time: After the final coat of paint has been applied, the tank shall remain open and forced ventilation shall be continued for a minimum of three days prior to being flooded with water.

3.2.5 Washing: After the final work has been completed in the tank, but prior to any disinfecting operations, wash the tank with clean water to remove all dust and overspray. Washing may take place during the final dry time provided the coating is sufficiently cured to withstand the abuse.

3.2.6 Disinfection of Tank: After painting and all other interior work has been completed, disinfect the tank before it is replaced in service. If the local medical facility or health department requires a specific procedure for disinfection, follow that procedure. Otherwise the following procedure shall be followed: Place water containing 50 ppm chlorine in the tank to such a depth that when the tank is filled the resultant chlorine concentration shall be no less than 2 ppm. Hold the water containing 50 ppm chlorine in the tank for 24 hours before the tank is filled. Allow the full tank, in turn, to stand for 24 hours, after which the tank may be put into service without draining the water used to disinfect it.



SECTION 09942 PAINTING OF WATER STORAGE TANK EXTERIOR SURFACES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for painting water storage tank exterior surfaces. Product shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The following materials form a part of this section of the specification: Fed. Spec. TT-P-86, TT-P-320, TT-V-81, and SSPC Paint 101.

3.0 EXECUTION:

3.1 Preparation:

3.1.1 All Exterior Surfaces to be Painted shall be cleaned using power tools in compliance with SSPC-SP 3 or, at the option of the Contractor, surfaces may be blast cleaned in compliance with SSPC-SP 7. In addition, the following operations shall be implemented.

3.1.2 Mildew shall be removed from all surfaces to be painted by scrubbing the surface with a solution consisting of 1/2 pound of trisodium phosphate and 1 pound of hypochlorite bleach per gallon of warm water. Additional bleach may be beneficial in heavily mildewed areas. Rinse surfaces to remove cleaning materials and allow to dry completely before repainting.

3.1.3 Surface Glaze remaining on existing coatings shall be removed either by lightly abrading the surface or through the use of a chemical deglosser.

3.1.4 Removal of Vines and Trimming of Plantings: Remove all ivy vines and tentacles interfering with the contract work from the exteriors of the structure and haul from the site of the work. Remove ivy in such a fashion that the remaining growth shall all be live and connected to the root system. Other types of plantings that interfere with the contract surfaces shall be trimmed or tied back.

3.2 Installation:

3.2.1 All Paints shall be mixed, thinned, and applied in compliance with the procedures and requirements set forth in SSPC-PA 1. The following paint system shall be used.

3.2.2 Primer: The primer shall consist of one coat of a material complying with Fed. Spec. TT-P-86, Type II.

3.2.3 Finish Coats: The finish coats shall consist of a minimum of two coats of one of the following paints: Paint 1 - job-mixed alkyd aluminum paint in compliance with SSPC Paint 101 Type I or Paint 2 - aluminum paint consisting of aluminum paste and a mixing varnish in compliance with Fed. Spec. TT-V-81, Type II and mixed in the proportions of two pounds of aluminum paste complying with Fed. Spec. TT-P-320 per gallon of mixing varnish.

3.2.4 Thickness Requirements: Apply the primer paint to a dry film thickness of approximately 1.5 mils. Apply the finish paint such that the resulting total system has a minimum dry film thickness of at least 3.5 mils at its thinnest point. If this thickness is not obtained in the specified number of coats, apply additional coats of the finish paint to meet the minimum thickness requirement. Final thickness measurements shall be made by the Contractor in the presence of the Contracting Officer, using a magnetic thickness gauge as specified in SSPC-PA 2.



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3.2.5 Respirators: Respirators shall be worn by all persons engaged or assisting in spray painting. Air-fed respirators will be worn by all persons engaged in spray painting in confined areas (water thinned coatings excluded).

3.2.6 Lettering and Sign Painting: Building number signs, gauges, and other signs that are painted shall have lettering and numbering repainted. Design and color shall match existing.



Section 09952 Wall Coverings

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of vinyl, cork, fabric, and flexible wood wall coverings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Vinyl Wall Covering: Wall covering shall conform to Fed. Spec. CCC-W-408, Type I, II, or III as required. A polyvinyl fluoride film, 1/2 mil thick, shall be factory-applied to the wall covering as required. The film shall conform to Fed. Spec. L-P-1040, Type I, Grade B, Class 2.

2.2 Cork Wall Covering shall be either sheet cork in standard 24-inch by 36-inch sheet size, or sheeting composed of a cork sheeting material factory-bonded to a fabric backing. Wall covering material shall be either 20 ounces per lineal yard or 24 ounces per lineal yard and 36 inches wide, as required.

2.3 Fabric Wall Covering shall be natural woven fabric bonded to a paper backing. Fabric materials shall be treated for stain and mildew resistance and shall be a minimum of 27 inches wide. All fabric wall coverings shall be Class A flame-rated and tested in accordance with ASTM E 84.

2.4 Flexible Wood Sheets shall be composed of genuine wood veneer bonded to a clay-filled cotton backing fabric to form a flexible wall covering in sheets not less than 12 inches wide, factory matched and numbered in sequence for spaces as required.

2.5 Primer and Adhesive shall be mildew-resistant and non-staining, as recommended by the wall covering manufacturer.

2.6 Wainscot Caps shall be aluminum extrusions.

2.7 Fire Hazard Classification: Provide wall covering materials bearing UL label and marking, indicating fire hazard classification of wall covering, as determined by ASTM E 84. Provide materials with the following fire hazard classifications: Flame spread not more than 25. Smoke developed not more than 50.

2.8 Plastic Wall Covering: Wall covering shall conform to Class I/A or Class II/B fire code criteria. Stain resistance shall conform to ASTM D-1308 B. Chemical resistance shall conform to ASTM D543.

3.0 EXECUTION:

3.1 Wall Covering Materials shall be acclimatized by removing from packaging in area of installation not less than 24 hours before application. 3.2 Prime and Seal Substrates in accordance with wall covering manufacturer's recommendations for type of substrate. Surface sealer shall be applied to gypsum wallboard to permit future removal of wall covering without damage to paper facing.

3.3 Adhesives shall be recommended by the manufacturer of protective wall covering material.



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DIVISION 10 SPECIALTIES



SECTION 10160 COMPARTMENTS AND CUBICLES FOR SHOWER AND TOILET ROOMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of laminated plastic and metal toilet partitions, urinal screens, and shower and dressing compartments. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Laminated Plastic Toilet Partitions and Urinal Screens:

2.1.1 Plastic Laminate shall be NEMA LD-3, minimum 0.062 inch thick.

2.1.2 Core Material for Plastic Laminate shall be manufacturer's standard particleboard or plywood, in thickness to provide a nominal dimension of 1 inch for doors, panels, and screens and 1-1/4 inches for pilasters.

2.1.3 Pilaster Shoes shall be ASTM A 167, Type 302 or 304, stainless steel not less than 3 inches high, 20 gauge, finished to match hardware.

2.1.4 Stirrup Brackets shall be manufacturer's standard design for attaching panels to walls and pilasters, either chromium-plated nonferrous cast alloy or anodized aluminum.

2.1.5 Hardware and Accessories shall be manufacturer's standard design heavy duty operating hardware and accessories of chromium-plated nonferrous cast alloy or chromium plated brass, as required.

2.1.6 Overhead Bracing shall be continuous extruded aluminum tubing in antigrip profile, with clear anodized finish.

2.1.7 Anchorages and Fasteners shall be manufacturer's standard exposed fasteners of stainless steel, chromium-plated steel, or brass finished to match hardware, with theft-resistant type heads and nuts. For concealed anchors, use hot-dip galvanized, cadmium-plated, or other rust-resistant protective-coated steel.

2.1.8 Fabrication:

2.1.8.1 General: Furnish standard doors, panels, screens, and pilasters fabricated for partition system. Furnish units with cutouts, 10155-drilled holes, and internal reinforcement to receive partition-mounted hardware, accessories, and grab bars.

2.1.8.2 One-Piece Face Sheets shall be pressure-laminated to core material with no splices or joints, and with edges straight and sealed. Seal exposed core material at cutouts to protect against moisture.

2.1.8.3 Overhead-Braced Partitions: Furnish galvanized steel supports and leveling bolts at pilasters, as recommended by manufacturer to suit floor conditions. Make provisions for setting and securing continuous aluminum overhead-bracing tube at top of each pilaster. Furnish shoe at each pilaster to conceal supports and leveling mechanism.



2.1.8.4 Floor-Supported Partitions: Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters, to permit structural connection at floor. Furnish shoe at each pilaster to conceal anchorage.

2.1.8.5 Ceiling-Hung Partitions: Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters, to permit connection to structural support above finished ceiling. Furnish devices which are designed to support pilasters from structure without transmitting load to ceiling finish. Furnish 3 inch high stainless steel trim piece, finished to match hardware, at each pilaster.

2.1.8.6 Wall-Hung Screens: Furnish panel units of same construction and finish as partition system panels.

2.1.8.7 Floor-Supported Screens: Furnish pilasters not less than 1 inch in thickness, panels and pilasters of same construction and finish as toilet partitions. Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjusting nuts at pilasters, to permit structural connection to floor. Furnish shoe at pilaster to conceal anchorage.

2.1.8.8 Furnish Hardware for each compartment in partition system, as follows:

- a. Cutout inset type hinges, adjustable to hold door open at any angle up to 90 degrees; gravity type, spring-action cam type, or concealed torsion rod type.
- b. Recessed or surface-mounted latch unit, designed for emergency access, with combination rubber-faced door strike and keeper.
- c. Coat hook with combination hood and rubber-tipped bumper.
- d. Door pull.

2.2 Metal Toilet Partitions and Urinal Screens:

2.2.1 Toilet Enclosures shall conform to Fed. Spec. RR-P-1352, Type I, Style A, B, or C as required. Finish surface of panels shall be baked enamel, in color as required. Panels to receive toilet paper holders or grab bars shall be reinforced for the reception of the items required.

2.2.2 Room Entrance Screens shall conform to Fed. Spec. RR-P-1352, Type II, Style A. Finish surface of screens shall be baked enamel.

2.2.3 Urinal Screens shall conform to Fed. Spec. RR-P-1352, Type III, Style A or D, as required. Finish surface of screens shall be baked enamel. Width of Style A screens shall be 24 inches or 36 inches, as required.

2.3 Shower and Dressing Compartments:

2.3.1 General: Materials shall be provided which have been selected for surface flatness and smoothness. Exposed surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable. Shower compartments shall include a shower receptor for each compartment.

2.3.2 Steel Sheets for Baked Enamel Finish shall be ASTM A 591, Class C, galvanized-bonderized, of the following minimum thicknesses:

- a. Pilasters (overhead-braced): 20-gauge.
- b. Panels and Screens: 20-gauge.
- c. Doors: 22-gauge.

2.3.3 Concealed Anchorage Reinforcement shall be minimum 12-gauge galvanized steel sheet.

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2.3.4 Concealed Tapping Reinforcement shall be minimum 14-gauge galvanized steel sheet.

2.3.5 Core Material for Metal Partitions shall be manufacturer's standard sound-deadening honeycomb of impregnated kraft paper, in thickness to provide finished dimension of 1 inch minimum for doors, panels, and screens and 1-1/4 inches minimum for pilasters.

2.3.6 Pilaster Shoes shall be ASTM A 167, Type 302/304 stainless steel, not less than 3 inches high, 20-gauge, finished to match hardware.

2.3.7 Stirrup Brackets shall be manufacturer's standard design for attaching panels to walls and pilasters, either chromium-plated nonferrous cast alloy or anodized aluminum.

2.3.8 Hardware and Accessories shall be manufacturer's standard design, heavy-duty operating hardware and accessories of chromium-plated nonferrous cast alloy or chromium-plated brass, as required.

2.3.9 Overhead Bracing shall be continuous extruded aluminum tubing in antigrip profile, with clean anodized finish.

2.3.10 Anchorages and Fasteners shall be manufacturer's standard exposed fasteners of stainless steel, chromium-plated steel, or brass finished to match hardware, with theft-resistant type heads and nuts. For concealed anchors, use hot-dip galvanized, cadmium-plated, or other rust-resistant protective-coated steel.

2.3.11 Fabrication:

2.3.11.1 Furnish Standard Doors, Panels, Screens, and Pilasters fabricated for partition system, unless otherwise indicated. Furnish units with cutouts, drilled holes, and internal reinforcement to receive partition-mounted hardware, accessories, and grab bars, as required.

2.3.11.2 Door Dimensions: Unless otherwise indicated, furnish 24-inch wide in-swinging doors.

2.3.11.3 Pressure Laminate Seamless Face Sheets to core material and seal edges with continuous interlocking strip or with lapped and formed edges. Weld edges and corners, with exposed welds ground smooth.

2.3.11.4 Overhead-Braced Partitions: Furnish galvanized steel supports and leveling bolts at pilasters, as recommended by manufacturer to suit floor conditions. Make provisions for setting and securing continuous aluminum overhead-bracing tube at top of each pilaster. Furnish shoe at each pilaster to conceal supports and leveling mechanism.

2.3.11.5 Floor-Supported Partitions: Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters, to permit structural connection at floor. Furnish shoe at each pilaster to conceal anchorage.

2.3.11.6 Furnish Hardware for each dressing compartment as follows:

- a. Cutout inset type hinges, adjustable to hold door open at any angle up to 90 degrees; gravity type, spring-action cam type, or concealed torsion rod type.
- b. Recessed or surface-mounted latch unit, designed for emergency access, with combination rubber-faced door strike and keeper.
- c. Coat hook, with combination hook and rubber-topped bumper.
- d. Door pull.



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2.3.11.7 Accessories: Each dressing compartment shall be provided with the following accessories: shower curtain rod, curtain, hooks, soap dish, and wood seat.

2.3.12 Finish for Compartments and Showers shall be baked enamel. Clean galvanized steel surfaces after fabrication and before application of enamel coating system to remove processing compounds, oils, and other contaminants. Prime metal with baked-on rust-inhibitive primer. Apply two coats of thermosetting enamel finish, applied by electrostatic process, and baked in accordance with paint manufacturer's instructions.

2.3.13 Shower Receptor shall be pre-cast terrazzo, made of marble chips cast in white Portland cement. Provide wrought brass drain bodies cast integrally in receptor. Drain bodies shall provide for caulked lead connection not less than one inch deep to a two-inch pipe, with a removable type stainless steel strainer. Shower receptor curb shall be rabbeted 1 inch deep to receive steel shower walls. Receptors shall have an integral steel flange, 6-inch minimum height, on all sides except at threshold location.

3.0 EXECUTION:

3.1 Installation: Partitions associated with compartments and cubicles shall be installed straight and plumb with all horizontal lines level and rigidly anchored to the supporting construction. Anchorage to walls shall be by through-bolting or toggle-bolting as required. Drilling and cutting for installation of anchors shall be at locations that will be concealed in the finished work.

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SECTION 10275 ACCESS AND PEDESTAL FLOORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of access and pedestal floors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Provide access flooring that, when installed, complies with NFPA 75, (components shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with NFPA 255 and ASTM E 84) unless otherwise directed. Flooring systems shall also comply with load tests referenced in Ceilings and Interior Systems Construction Association's (CISCA) "Recommended Test Procedures for Access Floors".

2.1 Panels shall be 24 inches by 24 inches square (+/- 0.015 inch) and shall be capable of withstanding a concentrated load of 1000 to 2000 pounds with a deflection of not greater than 0.010 inches and a rolling load of 600 to 1000 pounds per square foot with a deflection not to exceed 0.040 inches.

2.2 Pedestals shall be assemblies that are electrically conductive and corrosion-resistant. Each shall be capable of adjustments of 1/64-inch increments, have positive locking, and be capable of supporting a 5,000-pound axial load.

2.3 Stringers (on floors 18 inches in height or greater) shall be capable of individual removal and shall support 200 pounds.

2.4 Accessory Ramps, Handrails, and Fascia Plates shall be compatible with panels and pedestals.

3.0 EXECUTION:

3.1 Preparation: No installation of access flooring shall take place until structural floor surfaces are clean and dry.

3.2 Installation:

3.2.1 Completed System shall be rigid and free from vibration, with no rocking panels.

3.2.2 Floor shall be level within +/- 0.062 inch in any 10-foot area and +/- 0.10 inch over the entire area.



SECTION 10351 FLAGPOLES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of flagpoles. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Steel Flagpoles shall be constructed from standard weight steel pipe complying with ASTM A 53, Type S, Grade B, or steel tube complying with ASTM A 513. Fabricate shop and field joints without using pins, rivets, bolts, screw collars, or lead caulking.

2.2 Aluminum Flagpoles shall be fabricated from seamless extruded tubing complying with ASTM B 241, alloy 6063-T6, having a minimum wall thickness of 3/16 inch.

2.3 Stainless Steel Flagpoles shall be fabricated from alloy UNS S30400 pipe, tube, or plate complying with **ASTM A 312 (ASTM A 312M)**, ASTM A 269, or ASTM A 666.

2.4 Bronze Flagpoles shall be fabricated from alloy UNS C23000 seamless pipe or tube complying with ASTM B 43 or **ASTM B 135 (ASTM B 135M)**.

2.5 Fiberglass Flagpoles shall be fabricated from polyester-resin reinforced with woven glass-fiber roving with 75 percent of glass fibers parallel to the length of the flagpole.

2.6 Flagpole Style shall be cone-tapered, sectionally swaged, or entasis-tapered (slight convexity) and shall be of designated height and diameter.

2.7 Two Continuous Halyards shall be provided for each pole and furnished complete with all standard fittings.

2.8 Provide Anchors and Base necessary for the particular installation requirements.

3.0 EXECUTION

3.1 Flagpoles shall have a positive lightning ground for each installation.

3.2 Portions of Ground-Set Flagpoles shall be painted below ground with a heavy coat of bituminous paint.

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SECTION 10410 DIRECTORY AND BULLETIN BOARDS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of directories and bulletin boards. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Directory Boards shall be grooved and covered with felt, vinyl, or rubber. Boards shall be fabricated of one piece of material. Space grooves at 1/4 inch O.C. to receive changeable letters or changeable name bases, as required.

2.1.1 Rear-Illuminated Directories: For each directory required, provide a surface-mounted, rear-illuminated-type directory consisting of a cabinet with an operable transparent cover, containing a concealed illumination system, and a retainer frame containing a header panel and message strips. Graphics for message strips, header panels, and other designs shall be in the letter style, size, spacing, and arrangement indicated.

2.1.2 Non-illuminated Directories: Provide a fully recessed, non-illuminated directory consisting of a cabinet with an operable transparent cover, and a retainer frame containing a header panel and a letter board or removable message strips. Graphics for message strips, header panels, and other designs shall be in the letter style, size, spacing, and arrangement indicated.

2.2 Chalkboard Surfaces shall comply with Porcelain Enamel Institute specifications.

2.3 Tack Board Surfaces shall be natural cork, plastic-impregnated cork, or vinyl fabric laminated under pressure to 1/4 inch thick exterior plywood, hardboard or fiberboard backing.

2.4 Visual Aid Boards shall have a white porcelain enamel writing surface.

2.5 Bulletin Boards shall be surface-mounted and top-illuminated consisting of a cabinet housing with an operable transparent cover, containing a top-illumination system, and with tackable surface of material indicated. Provide graphics for header panels and other designs in the letter style, size, spacing, and arrangement indicated.

2.6 Frames shall be constructed of hardwood, chrome-plated steel, aluminum, bronze, or stainless steel of designated design. All units located on the exterior shall be of weatherproof construction.

2.7 Glass for Encased Boards shall be clear/bronze/gray float glass, laminated glass, tempered glass, acrylic sheeting, or polycarbonate sheeting.

2.7 Locks and Keys for Glass-Encased Boards shall be of the disk tumbler type with two keys.

2.8 Fabrication: Fabricate directories and bulletin boards to requirements indicated, including dimensions, design, and thickness and finish of materials. Use metals and shapes of thickness, with reinforcing if needed, to produce flatness, free of oil canning, and to impart strength for size, design, and application indicated.



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2.8.1 Fabricate perimeter cabinet and cover frames with reinforced corners, mitered to a hairline fit, with no exposed fasteners.

2.8.2 Hardware for Covers: Equip covers with hardware of type indicated.

2.8.3 Weatherproofing: For units located on the exterior, provide weatherproof construction, including weather-stripping and venting provisions for condensation control.

3.0 EXECUTION:

3.1 Installation: Install units plumb and level, in locations and with mountings shown. Securely attach to supporting structure with concealed fasteners, according to manufacturer's written installation instructions.

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SECTION 10430 SIGNS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of signs. Materials shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cast-Aluminum Letters shall have a satin, polished, clear anodized, colored anodic, or enameled finish.

2.2 Cast-Bronze Letters shall have a satin, polished, or oxidized finish.

2.3 Cast Metal Plaques shall be free from pits, scale, sand holes, or other defects. Comply with requirements specified for metal, border style, background texture, and thickness, and with requirements shown for thickness, size, shape, and copy. Hand-tool and buff borders and raised copy to produce manufacturer's standard satin polished finish.

2.4 Special Medallion Construction shall be of cast bronze or aluminum, free from pits, scale, second holes, or other defects.

2.5 Adhesive Door Signs shall be fabricated from individually die cut-to-shape letters that are pre-spaced and pre-masked on a high-quality plastic film coated with a pressure-sensitive adhesive backing.

2.6 Hard Plastic Door Signs shall be made from high-pressure plastic laminate engraving stock with face and core plies in contrasting colors.

2.7 Panel Signs shall comply with the materials, thicknesses, finishes, colors, designs, shapes, sizes and details of construction. Produce smooth, even, level sign surfaces, constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally.

2.8 Frames For Plastic Door Signs shall be made of solid extruded aluminum with an anodized gold or silver finish and concealed mounting holes. Frames shall be designed to allow signs to slide in from the side.

3.0 EXECUTION:

3.1 Installation: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions. Install signs level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearance.



SECTION 10452 SECURITY SCREENS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of security screens for doors and windows. Products shall match existing materials and shall be as directed by the Contracting Officer. Installations shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mesh shall be 9-gauge crimped steel wire woven into 2-inch mesh securely clinched to frame members.

2.2 Standard Diamond Pattern Expanded Metal shall be 1-1/2 inch, 9-gauge, carbon steel conforming to ASTM F 1267 Type I Class 1.

2.3 Flattened Diamond Pattern Expanded Metal shall be 1-1/2 9-gauge carbon steel conforming to ASTM F 1267 Type II Class 1.

2.4 Frame Bars and Center Stiffeners shall be not less than 1/2-inch in diameter cold finished steel bars conforming to ASTM A 108.

2.5 Frame Channels shall be hot rolled low carbon bar channels not less than 1-inch by 1/2-inch by 1/8-inch conforming to ASTM A 29.

2.6 Center Stiffeners where frame channels are used, shall be not less than two 3/4-inch by 3/8-inch channels, conforming to ASTM A 29, bolted to each side.

2.7 Sub-frames for Hinged Security Screens shall be not less than 1-1/4 inch by 1-1/4 inch by 1/8-inch medium carbon steel angles conforming to ASTM A 36.

2.8 Finish: Manufacturer's standard shop-applied enamel finish or hot dipped galvanized as directed.

2.9 Provide Bolts, Masonry Anchors, Hardware, and Accessories for complete installation. Hardware shall include all padlock hasps and staples, hinges, and locking devices. Provide cylinders for locks, keyed and mastered keyed, if required.

3.0 EXECUTION:

3.1 Erect Security Screens plumb, rigid, properly aligned, and securely anchored in place for a rigid installation



SECTION 10505 METAL LOCKERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal lockers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Materials and Finishes:

2.1.1 Stainless Steel: ASTM A 666, Type 304, stretcher-leveled standard of flatness. Roller-apply texture to doors in manufacturer's standard pattern.

2.1.2 Carbon Steel: ASTM A 366/A 366M, matte finish, suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness.

2.1.3 Expanded Metal: ASTM F 1267, Type II (flattened), **3/4-inch** mesh, minimum **0.0747 inch** thick, with at least 70 percent open area.

2.1.4 Galvanized Steel Sheet: ASTM A 653/A 653M, commercial quality, **G60 (Z180)** coating designation; mill phosphatized; suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness.

2.1.5 Electrolytic Zinc-Coated Steel Sheet: ASTM A 591/A 591M, commercial quality, coating Class C; mill phosphatized; suitable for exposed applications; and stretcher leveled or roller leveled to stretcher-leveled flatness.

2.1.6 Extruded Aluminum: **ASTM B 221 (ASTM B 221M)**, alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated.

2.1.7 Plastic Laminate: NEMA LD 3, Grade PF-42, **0.042-inch** nominal thickness.

2.1.8 Fasteners: Zinc- or nickel-plated steel, slotless-type exposed bolt heads, and self-locking nuts or lock washers for nuts on moving parts.

2.2 Wardrobe Lockers:

2.2.1 Backs and Sides of lockers shall be fabricated of minimum 24-gauge steel with double flanged connections extending full height. Top and bottom shall be of not less than 24 gauge steel with flanged edges. Exposed ends of non-recessed lockers shall be of a minimum 16-gauge steel. Provide one 24-gauge steel hat shelf in single-tier units.

2.2.2 Doors shall be one-piece construction of minimum 16-gauge sheet steel, flanged at all edges. Provide extra bracing or reinforcing on inside of doors over 15 inches wide. Fabricate to prevent springing when opening or closing, and to swing 180 degrees.



2.2.3 Ventilation: Provide stamped, louvered vents in door face. Single-tier lockers shall have not less than 6 louver openings top and bottom. Double-tier lockers shall have not less than 3 louver openings top and bottom. Multi-tier lockers shall have not less than 2 louver openings top and bottom, or 3 louver openings top or bottom.

2.2.4 Hinges shall be heavy-duty, not less than 0.050 inch thick steel, full-loop, 5- or 7-knuckle, tight pin, 2 inches high. Weld to inside of frame and secure to door with not less than 2 factory-installed fasteners, which are completely concealed and tamperproof when door is closed. Provide at least 3 hinges for each door 42 inches high and over, at least 2 hinges for each door less than 42 inches high.

2.2.5 Standard Hardware Items, including coat-hooks, sequential number plates, and arrangements for locking devices, shall be provided.

2.3 Box (Athletic) Lockers:

2.3.1 Tops and Bottoms of lockers shall be fabricated from minimum 16-gauge steel sheet and backs from not less than 18-gauge steel. Sides and intermediate partitions shall be constructed of expanded metal welded to steel hemming. Provide 16-gauge steel shelf in single-tier lockers.

2.3.2 Doors shall be manufacturer's standard of either expanded metal in a steel frame or one-piece perforated steel sheet with flanged edges, minimum 16 gauge. Provide extra bracing or reinforcing on inside of doors over 15 inches wide.

2.3.3 Hinges shall be heavy-duty, not less than 0.050 inch thick steel, full-loop, 5-knuckle, tight pin, 2 inches high. Weld to inside of frame and secure to door with not less than 2 factory-installed fasteners which are completely concealed and tamperproof when door is closed. Provide at least 3 hinges for each door 42 inches and over, at least 2 hinges for each door less than 42 inches high, or continuous piano hinge at top for multi-tier units. Manufacturer shall provide all necessary hardware including sequential number plates and arrangements for locking devices.

2.4 Basket Locker: Rack shall have legs for fastening to the floor and sway braces. Racks shall be designed to allow bolting together to form double-faced racks.

2.4.1 Uprights on Rack shall be a minimum of 13 gauge, shelves a minimum of 18 gauge, and dividers a minimum of 20 gauge, ribbed for stiffness.

2.4.2 Baskets shall be all wire or wire and minimum 24 gauge steel front with perforations. All baskets shall be zinc plated with a bright finish. Pilfer guards shall be available for all styles of baskets.

2.4.3 Hardware shall be provided as required for installation and functioning including sequential number plates and arrangements for locking.

2.5 Locker Benches:

2.5.1 Bench Tops shall be manufacturer's standard one-piece units minimum 9-1/2 inches wide by 1-1/4 inches thick, with rounded corners and edges. Material shall be laminated maple coated with sealer and lacquer, or plastic laminate over medium-density particle board core, or extruded aluminum with anodized finish.

2.5.2 Pedestals: Provide manufacturer's standard pedestal supports, with predrilled fastener holes, complete with fasteners and anchors. Furnish a minimum of two pedestals for each bench, with pedestal spacing not more than 72 inches o.c. Materials shall be tubular steel with flanges and baked enamel finish or aluminum channels/standard bar stock trapezoid shaped painted to match locker units.

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3.0 EXECUTION: Lockers and locker benches shall be installed in accordance with the designated arrangement, securely anchored in position, and accurately aligned vertically and horizontally.



SECTION 10520 FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fire extinguishers, cabinets, and accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fire Extinguishers shall be Underwriters' Laboratories (UL) listed and/or Factory Mutual System (FM) approved for their intended use in compliance with NFPA 10 and its appendices. Fire extinguishers shall be clearly marked to indicate extinguisher suitability according to class of fire.

2.2 Fire Extinguisher Cabinets and Accessories shall be in compliance with NFPA 10 and its appendices and shall be of sufficient size to house fire extinguishers of the type and capacity required. Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames. Provide manufacturer's standard alarm, which actuates when cabinet door is opened and is battery or low voltage powered.

3.0 EXECUTION:

3.1 Fire Extinguishers shall be distributed and maintained in compliance with NFPA 10 and its appendices.

3.2 Fire Extinguisher Cabinets and Accessories shall have the locations of fire extinguishers readily recognizable by the use of markings that are not part of the extinguisher itself. Install in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction. Prepare recesses for cabinets as required by type and size of cabinet and trim style. Fasten mounting brackets to structure and cabinets, square and plumb. Fasten cabinets to structure, square and plumb.



SECTION 10550 POSTAL SPECIALTIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of mail chutes and mail boxes. Materials shall match existing materials and/or as shall be directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: All products shall comply with U.S. Postal Service requirements for construction and installation of units serviced by USPS carriers.

2.2 Mail Chutes must be approved according to USPS Publication 16. Chutes shall have sides and back that are of a continuous one-piece construction of minimum 0.125 inch aluminum sheet extending from floor to ceiling on each floor and extending 4 feet 6 inches above finish flooring on top floor. Back and sides shall have satin anodized finish complying with ANSI/BHMA A156.18. Removable front panels shall comply with USPS Publication 16 for at least three-fourths of the length of the front of the chute on each floor, set into continuous one-piece frames and covers. Frames and covers shall be fabricated from aluminum with a 0.125 inch minimum thickness with satin anodized finish complying with ANSI/BHMA A156.18, or bronze anodized, bronze sheet cladding over aluminum, or stainless steel cladding over aluminum.

2.2.1 Furnish Manufacturer's Standard Cast-Metal Floor and Ceiling Fascia and Lock Band finished to match front frames and covers. Furnish lock band with acceptable locking device and keyed lock which prevents key removal if locking device is not secured.

2.2.2 Mail Slot shall be standard pocket with cigarette ejector, finished to match front frames and covers. Inscribe "U.S. MAIL" on face of mail slot.

2.2.3 Bundled Mail or Package Chute shall be constructed similarly to standard mail chutes. Furnish complete with removable frames, hinged lock band, bottom deflector or baffle slow-down, and mail openings on each floor. Fabricate chute size 14 inches wide and 7 inches deep, unless otherwise indicated. Bundled mail chutes will not require USPS approval.

2.2.4 Locked Receiving Mail Box shall be recessed or surface-mounted units as indicated, complete with pull-down inlet door and hinged door with post office lock. Construct boxes and letter them to comply with USPS Publication 16. Provide units with hooks to hold mail sack open. Fabricate door of minimum **1/4-inch** thick metal extrusion or plate and other components of the same material in sheet form. Boxes shall have satin anodized finish complying with ANSI/BHMA A156.18, or satin bronze anodized, or stainless steel with No. 4 finish. Boxes shall be 36 inches by 20 inches by 12 inches.

2.3 Mail Boxes: All horizontal-type and vertical-style mailboxes shall comply with USPS Publication 17 in size and with features indicated. Neighborhood delivery and collection box units shall comply with USPS Publication 18 in size and with features indicated. Parcel lockers shall comply with USPS Publication 15 and USPS Publication 18 for outdoor units. Mail boxes shall have aluminum finish complying with ANSI/BHMA A156.18 or stainless-steel finish complying with ASTM A 480.

2.3.1 Letter Slot shall be metal, designed for flush mounting. The legend "U.S. MAIL" must be plainly inscribed on every mail opening.



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2.3.2 Rural Letter Box shall be post-mounted type and shall have a heavy-duty piano hinge and red flag. Doors shall have legend "U.S. MAIL" plainly inscribed. Boxes shall have a polyurethane baked-on finish that resists rust.

2.3.3 Apartment House Keyed Mail Boxes: Mail compartments and wall receptacles shall be of heavy galvanized steel or corrosion-resistant metal construction. Each compartment shall be designed to receive name card and shall bear identification numbers as directed.

2.3.4 Letter Box with Combination Lock: Each compartment shall be equipped with a single-dial, 3-digit combination lock and shall be provided with identification numbers.

2.3.5 Letter Box with Keyed Lock: Each compartment shall be equipped with a 5-pin tumbler cylinder lock capable of at least 1,000 key changes, with 2 keys for each box door. Each box shall be keyed differently and a master key shall be provided. Provide identification numbers for each compartment.

2.3.6 Parcel Lockers: Each compartment shall be equipped with a dual-lock mechanism that retains the tenant key until released by USPS control key. The door lock shall be a 5-pin cam lock, and the key retainer lock shall be either an Arrow postal lock or another USPS-approved lock.

2.3.7 Key Keeper: The recessed-mounted key keeper shall match material and finish of mailboxes prepared for Arrow lock to be installed by USPS. The key keeper shall be made by the manufacturer of installed mailboxes.

3.0 EXECUTION: Install postal specialties so that they comply with U.S. Postal Service requirements.



SECTION 10605 WIRE MESH PARTITIONS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wire mesh partitions. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Mesh shall be 0.135-inch- diameter, inter-crimped steel wire woven into 1-1/2-inch diamond mesh, securely clinched to frame members.

2.2 Frames: Provide cutouts for pipes, ducts, beams, and other items necessary for partition installation. Finish edges of cutouts to provide a neat, protective edge.

2.2.1 Vertical Members shall be 1-1/4 inch x 5/8-inch x 0.1046 inch cold-rolled steel C-Section channels with 1/4-inch diameter bolt holes approximately 18 inches on center.

2.2.2 Horizontal Members shall be 1-inch x 1/2-inch x 1/8-inch cold-rolled steel channels, mortised and tenoned to vertical members.

2.2.3 Horizontal Reinforcing Members shall be 1-inch x 1/2-inch x 1/8-inch cold-rolled steel channel with wire woven through or two 1-inch x 1/2-inch channels bolted or riveted toe to toe through mesh and secured to vertical members. Provide number of horizontal reinforcing members to suit panel height as recommended by partition manufacturer.

2.3 Stiffening Bar: For free-standing partitions over 12 feet -0 inches in height, provide flat bar stiffener posts between abutting panel frames. Size as recommended by partition manufacturer for partition height required. Increase size of stiffening bars, if required, to maintain partition rigidity.

2.4 Top Capping Bars shall be 2-1/4 inch x 1-inch cold-rolled steel channels, secured to top framing channel with 1/4-inch diameter U-bolts spaced not more than 28 inches on center.

2.5 Corner Posts shall be 1-1/4 inch x 1-1/4 inch x 1/8-inch steel angles with floor shoe and 1/4-inch diameter bolt holes to align with bolt holes in vertical frame members and floor plate.

2.6 Floor Shoes shall be cast metal, sized to suit vertical framing and to provide approximately 3 inches clear space between finished floor and bottom horizontal frame members. Furnish units with set screws for leveling adjustment.

2.7 Sheet Metal Base shall be panels formed to 0.0598 inch thick steel sheet, welded or bolted to frames.

2.8 Hinged Door: Door frame shall be of 1-1/4 inch x 1/2-inch x 1/8-inch steel channels, with 1-1/4 inch x 1/8-inch flat steel bar cover plate on 3 sides and matching 1/8-inch thick angle strike bar and cover on lock side. Provide 1-1/2 pairs of 3 by 3 inch butt hinges riveted or welded to door and frame, and bronze mortise type cylinder lock operated by key outside with recessed knob inside. Align bottom of door with bottom of adjacent panels. Provide cylinders for lock, keyed and master keyed, if required.



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2.9 Sliding Door: Door frame shall be of 1-1/2 inch x 3/4-inch x 1/8-inch steel channels with 1-1/2 inch x 1/8-inch flat steel bar cover plate on all 4 sides. Provide door with two 4-wheel roller bearing carriers, box track, bottom guide channel, and bronze mortise type cylinder lock operated by key outside and recessed knob inside. Align bottom of door with bottom of adjacent panels. Provide cylinders for locks, keyed and master keyed, if required.

2.10 Service Window: Fabricate of same mesh and frames as panel units, arranged to lock in open and closed positions with spring catches. If size not shown, 24 inches wide by manufacturer's standard height.

2.11 Service Window Shelf: Size as shown or, if not shown, approximately 12 inches deep and 24 inches wide. Fabricate of 0.1046-inch- thick steel, braced with brackets as required and as recommended by manufacturer, corners rounded, and edges finished smooth.

2.12 Line Posts: Where partition runs exceed 20 feet without intersection or connection to overhead framing, furnish 3-inch by 4.1-lb steel channel line posts with 5-by-18-by-1/4-inch steel base plates located at recommended intervals to ensure partition rigidity and stability.

2.13 Intersection Posts: Where 3- or 4-way intersections occur, use 1-1/4-by-1-1/4-inch tubular steel posts with floor shoe and 1/4-inch- diameter bolt holes aligned for bolting to adjacent panels.

2.14 Finish: Manufacturer's standard shop-applied enamel finish.

2.15 Provide Bolts, Hardware, and Accessories for complete installation.

2.16 Steel Wire: ASTM A 853.

2.17 Steel Channels, Angles, Plates, and Bars: ASTM A 36.

2.18 Square Steel Tubing: Cold-formed structural steel tubing, ASTM A 500.

2.19 Galvanized Steel Wire: ASTM A 641.

2.20 Galvanized Steel Sheet: Commercial-quality, hot-dip-coated steel sheet, ASTM A 653, with G60 or A60 (ASTM A 653M, with Z180 or ZF180) coating.

3.0 EXECUTION:

3.1 Erect Partitions plumb, rigid, properly aligned, and securely anchored in place.

3.2 Provide Additional Field Bracing as necessary for rigid, secure installation.



SECTION 10615 DEMOUNTABLE PARTITIONS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of demountable partitions. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General Requirements: Movable partitions shall be floor-to-ceiling type, designed for erection on finished floors, and shall include doors, windows, fasteners, and accessories required for the installation. The partition system shall be capable of accommodating electrical wiring, outlets, and switches and shall be readily demountable without damage to panels, framing, electrical work, and other major components.

2.2 Fire-Resistive Rating and Test: Partitions shall have a flame spread rating of 25 or less and a smoke developed rating of 450 or less when tested in accordance with ASTM E 84. Fire-resistance rating shall be determined in accordance with ASTM E 119.

2.3 Sound Transmission Class and Test: Where sound-rated partitions are required, partition assemblies shall have a minimum STC of 40. STC range shall be determined in accordance with Sound Transmission Test by Two-Room Method and reported in accordance with the appendix to ASTM E 90 for 11 frequency data or ASTM E 413 for 16 frequency data.

2.4 Panel Units shall be manufacturer's standard construction except that gypsum wallboard shall be a minimum of 1/2 inch thick and shall conform to ASTM C 36. Gypsum backing board, if used, shall conform to ASTM C 442.

2.5 Framing System: The framing system shall consist of extruded anodized aluminum or roll-formed steel components that include ceiling runners, floor track, starting units, studs or posts, post covers if applicable, bracing, and suitable treated fasteners to prevent corrosion. The framing system when assembled with panel units shall form a rigid, stable partition.

2.6 Doors, Frames, and Hardware: Doors shall be 1-3/4 inch flush hollow metal of a size to provide 3/32-inch clearance at jambs and head. Door frames shall provide a compatible appearance with other trim components, shall be a minimum 0.0478 inch thick cold-rolled steel or 0.065 inch thick extruded anodized aluminum constructed to incorporate a cushion door stop at the head and both jambs, and shall allow for variations in floor level. Door hardware shall be the manufacturer's standard type hardware, except all doors shall receive 1-1/2 pairs of 4-1/2 inch by 4-1/2 inch butts.

2.7 Windows: Demountable partitions shall be complete with windows which are fully contained within the panel system. Window frames shall be sized as shown and assembled from minimum 0.065 inch thick extruded anodized aluminum parts or minimum 0.0478 inch cold-rolled steel and vinyl components.

2.8 Finishes: Exposed steel or aluminum surfaces shall be pre-finished. Gypsum wallboard shall be painted or finished with a minimum 6-mil vinyl wall covering, as required.

2.9 Base Trim shall be 4-inch high without exposed fasteners, 4-inch vinyl cover base with snap-on capabilities, 4-inch vinyl cover base applied with adhesive, or 4-inch metal clip on base cover, as required.



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3.0 EXECUTION: Partitions shall be erected plumb and straight after floor covering and finished ceiling are in place. Doors shall be hung to swing freely and hardware shall be carefully fitted and adjusted. Glass for glazed openings shall be installed on shims in a vinyl or polyurethane foam gasket. Glass stops shall be installed without exposed fastenings.



SECTION 10630 MOVABLE METAL PARTITIONS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of movable metal partitions. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Freestanding Partition Systems shall consist of individual panels, connector posts, and framing components. Nominal panel height shall be 5 feet-0 inches.

2.2 Panels shall be of manufacturer's standard width and height, constructed of 1/8-inch S2S tempered hardboard facing laminated to a core material. Total thickness shall be 1-9/16 inches.

2.3 Panel Face Coverings shall be vinyl, plastic laminate, fabric, natural hardwood, or baked enamel on steel substrate.

2.4 Panels shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E 84 when tested as a composite unit.

2.5 Framing Members shall be extruded aluminum shapes in 6063-T5 Alloy and 22-gauge pre-finished steel.

2.6 Exposed Components shall have anodized or baked acrylic paint finish.

2.7 Panel Frame Design shall provide connection and attachment of connector posts and various framing components with the use of simple hand tools. Each panel unit shall be able to be individually free-standing or connected to other panels.

2.8 Sound-Absorbing Panels shall be constructed of flame-resistant decorator fabric applied over a reinforced wood frame and fiberglass core. Flame-resistant fiberglass insulation shall be held in place by galvanized steel wire netting. Total panel thickness shall be 2-1/2 inches providing a minimum noise reduction coefficient (NRC) of 0.75.

3.0 EXECUTION: Additional framing components shall be provided as required to assemble the freestanding partitions. Components include, but are not limited to, vinyl edge inserts and filler caps, individual panel supports, and wall connectors.



SECTION 10677 METAL STORAGE SHELVING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal storage shelves. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Metal Shelving Materials:

2.1.1 Steel Sheet: **ASTM A 366** matte finish, suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness.

2.1.2 Galvanized Steel Sheet: **ASTM A 653, G90** coating designation; commercial quality; zinc-coated by the hot-dip process; stretcher leveled; phosphatized.

2.1.3 Electrolytic Zinc-Coated Steel Sheet: **ASTM A 591** with Class C zinc coating, mill phosphatized.

2.1.4 Stainless-Steel Sheet: ASTM A 666, Type 302 or 304, stretcher-leveled flatness.

2.2 Shelves: Form of 0.0478-inch thick steel with front and rear faces double flanged and box channeled.

2.3 Brackets: Cantilever design, steel not less than 0.1046 inch thick and of hook-in-lift-off design, adjustable without use of tools.

2.4 Anchorage: 1/4-inch size bolts with standard nuts and lock washers.

3.0 EXECUTION: Storage shelving shall be installed in accordance with the designated arrangement, securely anchored in position, and accurately aligned vertically and horizontally.



SECTION 10820 TOILET ACCESSORIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of toilet accessories other than porcelain type tile wall accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Finishes: Finishes on metal shall be provided as follows:

2.1.1 On Stainless Steel: No. 4 general-purpose polished.

2.1.2 On Carbon Steel, Copper Alloy, and Brass: Chromium-plated, bright.

2.2 Miscellaneous Accessory Items:

2.2.1 Mirror, Glass (MG): Glass mirror shall conform to Fed. Spec. DD-M-411.

2.2.2 Mirror, Metal (MM): Metal mirror shall be stainless steel or chromium-plated steel, mirror quality, 0.037-inch minimum thickness, edges turned back 1/4 inch and recess fitted with fiberboard backing, mounted with concealed theftproof fastening. Size shall be as required.

2.2.3 Grab Bar (GB): Grab bar shall conform to Fed. Spec. WW-P-541. Grab bar shall be form and length as required. Flange shall have screw mounting holes concealed on the lip of the flange. Installed bars shall be capable of withstanding a 500-pound vertical load without becoming loose from the fastenings and without obvious permanent deformation.

2.2.4 Shelf, Glass (SG): Glass shelf shall conform to Fed. Spec. WW-P-541 and shall be supported between brackets or on brackets. Shelf shall be plate or float glass, width and length as required. Separate supports shall be stainless steel.

2.2.5 Shelf, Metal, Heavy-Duty (SMHD): Heavy-duty metal shelf shall be stainless steel supported between brackets or on brackets not more than two feet on center. Thickness of shelf and brackets shall be not less than 0.07 inches. Shelf shall have rounded corners with minimum 1/2-inch lipped front edge, designed to support 60 pounds per linear foot. Width and length shall be as required.

2.2.6 Shelf, Metal, Light-Duty (SMLD): Light-duty metal shelf shall conform to Fed. Spec. WW-P-541. Shelf shall be supported between brackets or on brackets. Width and length shall be as required. Shelf and separate supports shall be stainless steel.



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2.2.7 Soap and Grab Bar Combination, Recess-Mounted (SGR): Recess-mounted soap and grab bar combination shall conform to Fed. Spec. WW-P-541, stainless steel, modified to provide a grab bar. Plastic insert dish shall be furnished.

2.2.8 Towel Bar (TB): Towel bar shall conform to Fed. Spec. WW-P-541, stainless steel, length as required. Bar shall be minimum 3/4 inch in diameter. 2.2.9 Towel Pin (TP): Towel pin shall have concealed wall fastenings; pin shall be integral with or permanently fastened to wall flange, approximately 4-inch projection.

2.3 Dispensers and Receptacles:

2.3.1 Paper Towel Dispenser (PTD): Paper towel dispenser shall conform to Fed. Spec. WW-P-541.

2.3.1.1 Mounting S, Surface: Style N or O.

2.3.1.2 Mounting R, Recessed: Style P, Q, or T.

2.3.2 Sanitary Napkin and Tampon Disposer (SND): Sanitary napkin and tampon disposer shall conform to Fed. Spec. WW-P-541, stainless steel. Reusable liner of the type standard with the manufacturer shall be provided.

2.3.3 Sanitary Napkin and Tampon Dispenser (SNTD): Sanitary napkin and tampon dispenser shall conform to Fed. Spec. WW-P-541.

2.3.4 Waste Receptacle (WR) shall conform to Fed. Spec. WW-P-541.

2.3.5 Facial Tissue Dispenser (FTD) shall conform to Fed. Spec. WW-P-541.

2.3.6 Toilet Tissue Dispenser (TTD) shall conform to Fed. Spec. WW-P-541.

2.3.7 Toilet Paper Holder (TPH) shall conform to Fed. Spec. A-A-2524, roller mounted, 2 support brackets.

2.3.8 Toothbrush and Tumbler Holder (TTH) shall conform to Fed. Spec. WW-P-541.

2.3.9 Soap Dispenser (SD) shall be liquid type consisting of a stainless steel tank with hold capacity of 40 fluid ounces.

2.3.10 Soap Holder (SH) shall conform to Fed. Spec. WW-P-541.

2.4 Medicine Cabinets:

2.4.1 Medicine Cabinet (MC) shall conform to Fed. Spec. WW-P-541. Width, height, and depth of cabinet shall be as required.

2.4.2 Sliding Door Cabinet, Class 1, assembly shall be surface-mounted vanity or recessed cabinet with design and lighting arrangement as required.

2.4.3 Swinging Door Cabinet, Class 2, Design and assembly, including the lighting arrangement, shall be as required. Assembly shall be surface or recess-mounted.

2.5 Shower Curtains and Rods:

2.5.1 Shower Curtain (SC) shall conform to CID A-A-2398, Style I, size as required to suit conditions.

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2.5.2 Shower Curtain Rods (SCR) shall be stainless steel 1 inch OD by 0.049 inch minimum, straight or bent as required to meet installation conditions.

2.6 Hand Dryer shall be electrically operated conforming to Fed. Spec. W-H-50. Unit shall be surface-mounted, semi-recessed or flush-mounted as required. Cover face shall be polished aluminum, cadmium-plated, polished chrome, stainless steel, or porcelain. Fan shall deliver a minimum of 150 cfm at the discharge end of the nozzle.

2.7 Ash Urn shall be wall-mounted, paraboloidal shape, two quart capacity conforming to Fed. Spec. RR-A-1255. Urn shall be 22-gauge type 304 stainless steel with satin finish or satin bronze finish.

2.8 Janitorial Material:

2.8.1 Mop and Broom Holder shall be 18-gauge stainless steel, satin finish, 8 inches deep in standard lengths as required.

2.8.2 Utility Shelf with mop and broom holders shall be 18-gauge stainless steel, satin finish, 8 inches deep in standard lengths as required.

2.8.3 Pail or Ladder Hook shall be 12-gauge stainless steel, bright polished finish projecting 8 inches from wall, 6 inches high, and 1 inch wide.

2.9 Hospital Accessories:

2.9.1 Foot Operated Soap Dispenser: Dispensing mechanism shall be non-corroding containing a stainless steel hood and shatter-proof container. The unit shall contain a molded rubber foot pump with non-slip base.

2.9.2 Bed Pan Storage Rack: Rack shall be stainless steel surface-mounted providing storage for bed pans and urinals.

3.0 EXECUTION: Anchors and fasteners shall be capable of developing a restraining force commensurate with the strength of the accessory to be mounted and shall be well suited for use with the supporting construction. Where exposed fasteners are permitted, they shall have oval heads and finish to match the accessory, except exposed fasteners in designated areas shall be of tamper-proof design.



SECTION 10911 WARDROBES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wood or steel wardrobes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

1.1 Design: Wardrobes shall be constructed of either wood or steel at the Contractor's option except when necessary to match existing or where one type is better suited for locality and intended usage. The material selected shall be used throughout the project. Design of wardrobes shall be by the Contractor using specified requirements as a minimum of acceptability. Each wardrobe shall be a complete unit capable of relocation without modifying or adding components, except for anchors and scribes. Common sides or backs between adjacent units are not permissible. The dimensions indicated are for the purpose of establishing general layout. Minor variations necessary to coordinate the details of construction will be permitted. All parts shall be manufactured to standards that will permit replacement without modifying of remaining parts.

2.0 PRODUCTS

2.1 Hardware:

2.1.1 Hinges shall be brass or steel, not less than 0.062 inch thick, 5 knuckle, tamper-proof institutional type, joint length not less than 2-1/2 inches, chromium finish or primed for paint finish. When doors are closed, only a smooth beveled and rounded joint shall be exposed. Doors 42 inches and less on the hinged side shall have two hinges; doors more than 42 inches on the hinged side shall have three hinges.

2.1.2 Latches: The active door of double doors on the clothes hanging compartment shall be provided with a three-point latching and locking mechanism. The handle shall be of the lever type, of cast brass or bronze, and shall be designed to permit locking by padlocking the handle to a steel keeper with a matching hole. A 14-gauge rectangular corrosion resisting steel shield shall be provided to protect the door from damage at the handle and padlock area. The interior components of the mechanism shall include locking bars or rods not less than 1/2-inch thick, two steel upper guides and two steel lower guides, three-finger cam, and applied strikes or reinforced openings for latching. The handle, keeper, and locking bars or rods shall have a chromium finish, and all other components shall have a chromium, nickel, zinc, or cadmium plated finish. Doors to overhead storage compartment, when separate from clothes hanging compartment doors, shall be provided with a heavy-duty catch and strike which will latch automatically when the overhead storage compartment is closed and which can be released manually when the clothes hanging compartment doors are open.

2.1.3 Clothes hanging rods shall be chromium plated or zinc-coated steel tubing approximately 1 inch in diameter and with a minimum wall thickness of 0.083 inch. Clothes hanging rods with exposed ends shall be provided with plastic caps to prevent marring the finish on the inside of the wardrobe.

2.1.4 Drawer Slides shall be heavy duty 14-gauge steel mating channels equipped with replaceable nylon-tired rollers or self-lubricating double-prong plastic glides located to insure that the drawer will operate freely and smoothly throughout its travel. Slides shall have integral cushioned stops at both ends of the travel, shall permit removal of drawers without tools, and shall be free of excessive play or sag.

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2.1.5 Silencers of rubber or similar resilient material shall be provided on door frames at close proximity to each latching point to minimize noise when the door is closed. Silencers shall be replaceable.

2.1.6 Astragals: Active door of double doors shall be provided with an astragal, full height of the door.

2.2 Steel Sheets shall be cold-rolled, commercial quality, stretcher level degree of flatness and of manufacturer's standard gauges specified.

2.3 Steel Wardrobe Construction:

2.3.1 Workmanship: Form bends accurately. Cut edges straight and smooth. Holes shall be accurately punched or drilled and have all burrs removed. Extend butt welds the full width of joining edges; grind smooth and flush with adjacent surfaces when on exterior of wardrobes. Resistance welds shall be 3/16-inch minimum diameter and maximum spacing of 8 inches on center. Welds shall be thoroughly fused and sound and free from cracks, fissures, pits, holes, gas pockets, porosity, and under-cuttings. Leave no sharp corners or protrusions of any kind in the final assembled wardrobes. Use of mechanical fasteners exposed to exterior of unit shall be limited to those required for application of hardware and scribes.

2.3.2 Base shall be closed type, formed to provide a bearing surface at the floor, and provided with floor mounting holes. Bases constructed as part of the framing and panel members shall be of the same gauge as those members. Bases constructed as separate components shall be not lighter than 16-gauge steel.

2.3.3 Back and Side Panels shall each be formed of sheet steel not lighter than 22 gauge and shall be reinforced if necessary to impart rigidity to unbroken spans.

2.3.4 Front shall be not lighter than 18-gauge steel and multi-channel formed as required to provide strength and rigidity to side panels, top, and bottom without exposing fasteners. Front shall be reinforced as necessary to serve as a stable mount and frame for doors and hardware. Fronts formed as part of side panels shall be equivalent to the specified 18-gauge steel multi-channel construction. With the door closed, clearance between door edge and frame shall be uniform and shall not exceed 1/8 inch and door face shall be flush with the face of the front.

2.3.5 Top shall be not lighter than 22-gauge steel, flat exterior surface, and formed as required for securing to back, front and sides.

2.3.6 Bottom shall be not lighter than 18-gauge steel and formed as required for securing to back, front and sides.

2.3.7 Hat Shelf and Upper Storage Shelf shall be not lighter than 18-gauge steel and formed as required for securing to back and sides.

2.3.8 Doors shall be of double-wall type with not lighter than 22-gauge steel inside panel and not lighter than 20-gauge outside panel separated by not less than 3/4 inch of rigid mineral insulation cemented between the panels. Doors shall be reinforced or otherwise prepared for the reception of hardware and to provide strength and rigidity to the doors.

2.3.9 Scribes and Closures shall be not lighter than 20 gauge.

2.3.10 Chest Unit shall have top and side of not lighter than 20-gauge steel firmly attached to the wardrobe. Shelves shall be constructed of not lighter than 18-gauge steel. Drawer bodies shall be of not lighter than 22 gauge, and drawer fronts shall be of not lighter than 20 gauge with the top formed to provide a full length integral pull.



2.3.11 Finish shall be an approved factory-applied baked-enamel, semi-gloss finish in accordance with manufacturer's standard finishes. Color will be selected from manufacturer's standard colors.

2.4 Wood Wardrobe Construction:

2.4.1 General: Except as otherwise shown or specified, wood wardrobes shall conform to AWI-02 and AWI-01. Plywood for transparent finish shall be hardwood plywood, and one species shall be used throughout. Plywood for paint finish shall be hardwood plywood, or have a medium density impregnated fiber overlay.

2.4.2 Wood Scribes and Closures shall be 3/8-inch minimum thickness and shall match wardrobes. Moldings used in conjunction with scribes and closures and for joints between adjacent wardrobes shall be 5/16- by 1-1/16 inch flat members or 3/4-inch quarter round.

2.4.3 Wood Finishes: Interior surfaces shall be given an approved transparent finish, and exterior surfaces shall be given an approved paint finish of the color as selected from manufacturer's standard colors or an approved transparent finish. Surfaces to receive a transparent finish shall be stained to an approved shade and all wood surfaces to be finished shall be filled, sanded smooth, and given not less than two coats of an approved finish coating. Finishing of interior and exterior surfaces shall be part of a continuous shop operation to and including at least the first finish coat in order to minimize warping.

3.0 EXECUTION

3.1 Installation: Wardrobes shall be assembled and positioned in accordance with the layout shown, set level, and secured in place. Wardrobes with backs to walls shall be secured to the wall with not less than four fasteners, using one fastener near each corner. Free-standing or island-type installations shall be secured to the floor with not less than four fasteners, using one fastener near each corner. Back-to-back or side-to-side wardrobes shall be secured to each other. Securing of adjacent wardrobes shall be with three fasteners located high, low, and intermediate when a side is involved. Securing of adjacent wardrobes shall be with four fasteners located near the corners when a back-to-back installation is involved. Fasteners to secure metal wardrobes in place shall penetrate two thicknesses of metal at each wardrobe or shall be provided with washers. There shall be no sharp corners or protrusions in the final assembled wardrobes that could be considered harmful to the user or the stored items. Scribes over 14 inches wide shall be secured to the building construction with concealed fasteners at intervals not to exceed 12 inches on center. Hardware shall be adjusted and left in good working order. Doors and drawers shall not stick or bind, but shall operate smoothly and easily. Wardrobes shall be cleaned and protected from damage until acceptance.

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DIVISION 11 EQUIPMENT



SECTION 11024 VAULT DOOR UNITS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of vault door units. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Vault Door Units: Vault door unit shall be an insulated, steel, flat-sill, record-vault-type door with frame and shall be a standard product of a manufacturer specializing in this type of construction. The Contractor shall furnish certificates certifying that the vault-door unit furnished under this specification conforms to the requirements of the Underwriters Laboratories. The label or listing of the Underwriters Laboratories, for fire-resistance classification and safety-relocking devices will be acceptable as sufficient evidence that the vault-door unit conforms to these requirements. In lieu of such label or listing, a written certificate from any nationally recognized testing agency adequately equipped and competent to perform such services may be submitted. The certificate shall state that the vault-door unit has been tested and that this unit conforms to the requirements listed herein, including methods of testing of the Underwriters Laboratories, Inc.

2.1.1 Doors: Design and construction of doors shall be manufacturer's standard and shall have a **UL 155** fire-resistant classification for a 4-hour exposure rating. Doors shall be of the size indicated. The finish for door, frame, and hardware shall be the manufacturer's standard for the type door indicated. Each door shall be equipped with a relocking device conforming to **UL 140**. The door shall be equipped with an inner escape device which will permit the bolt work to be released from inside the vault. Printed instructions for operating the escape device shall be provided inside the vault near the escape device release. There shall be not less than 5 bolts for the door. Each bolt shall be not less than 11/16 inch in diameter. When the bolts are not located on both jamb sides of the door, the jamb side not provided with bolts shall interlock with the frame walls of that side. Each door shall have not less than three heavy, offset roller bearing steel hinges.

2.1.2 Locks: Each door shall have a combination lock that complies with **UL 768**, Group 1R, for combination locks. The locking mechanism shall be operated by means of a lever handle. Locks shall be combination 3 tumbler, key or hand-changing type with a metal case, and shall be protected by a drill-resistant steel plate. The front-plate of the doors shall be not lighter than 0.060 inch steel plate either riveted or welded to the edge plates. Edge plates and back plates of doors shall be of not lighter than 0.032 inch steel.

2.1.3 Frame: The frame shall be of the tongue-and-groove interlocking type constructed of not lighter than 0.0478 inch cold-formed steel, formed from a single length for each jamb and a single length for the soffit. Soffit and jambs shall be continuously welded along the entire intersection. Sills shall be flat and not less in width than the jambs. Frame jambs and soffit shall be insulated with the same material as the door. The frame shall be designed for the thickness of vault wall indicated.

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2.1.4 Day Gate (Optional): The vault door unit may include a day gate of the manufacturer's standard make, and the door frame shall be designed to accommodate this day gate. The gate shall be of the swing-in, hinged type, and the gate frame shall be of not less than 3/8 inch by 1-1/4 inch aluminum or steel members. The day gate shall be equipped with a locking device arranged to permit locking and unlocking of the gate. Finish of the day gate shall be the manufacturer's standard. The day gate shall not interfere with the operation of the inner escape device.

2.2 Security Vault Door: Design and construction of the door and frame assembly shall conform to **FS AA-D-00600**. The door shall be Class 5, with desired opening swing and optional device features specified.

3.0 EXECUTION:

3.1 Installation: The vault door unit shall be installed in compliance with the approved installation instructions. If required, the day gate shall be installed in a manner that will not interfere with operation of the release handle on the inside of the vault door. After installation, the door, the locking mechanism, and the inner escape shall be adjusted for proper operation.



SECTION 11061 THEATER, AUDITORIUM SEATING

1.0 Description of Work: This specification covers the furnishing and installation of theater or auditorium upholstered seating with lifting seats. Products shall match existing materials or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufacturers recommendations. Demolition and removal of materials shall be as required to support the work.

PRODUCTS

2.1.1 Upholstered Self Lifting Seat: The seat component shall be upholstered and padded on its top surface and an injected molded plastic bottom, and shall automatically self lift to a three quarter fold position. Seat shall fold to a full folded position while occupant is standing. The seat shall be contoured to provide comfort. Pad topper shall have a 7/16 5 ply contour molded plywood foundation with molded polyurethane foam padding and fabric upholstered cover.

2.1.2 Hinge and Seat Lift Structure: Support structure shall be constructed of 12 gauge flanged steel. The seat structure shall rotate on two self compensating, fully independent 5/8 diameter high strength solid steel hinged rods. The seat shall be certified to withstand a 600 pound static load. The entire bottom cover shall be constructed of molded plastic. All upholstery workings shall be totally enclosed by the seat bottom cover.

2.1.3 Back Construction: Backs shall be padded and upholstered on their face with a one piece injected molded plastic rear panel. Structure of the back component shall be provided by a 7/16" thick 5 ply hardwood inner panel. The face of the rear pad shall be upholstered over 2 inch polyurethane foam pad. The outer panel shall be injected molded HDPE plastic, high impact resistant, with textured outer surface, formed to enclose the edges of the upholstered panel.

2.1.4 Seating Sizes: Varying lateral sizes of backs shall be used in accordance with approved seating plans, with standard in each row spaced laterally so that the end standards shall be in alignment from the first row to the last row whether aisles are constant width or convergence.

2.1.5 Armrest: Armrest shall be solid hardwood with all edges well rounded. Armrest shall be furnished with (2) keyhole slots in the bottom and shall lock securely to dove tail lugs provided on aisle and center standards.

2.1.6 Number/Letter Plates: A numbering system shall be provided for identification of all chairs. Number plate shall have a bronze finish and black letters. Numbers or letters shall be recessed into the seat. Aisle numbers/ letters shall be placed at the end of each aisle.

2.1.7 Tablet Arms (Optional): shall be provided for chairs as designated by the contract specification or drawings. Tablet arms shall be constructed of 5/8 thick resin-bonded particle board with decorative plastic laminate on the top surface and backer sheet on the bottom side for balanced construction. Tablet arms shall be designed to provide a strong stable work surface capable of supporting 320 lbs. in the center, and shall smoothly and quietly fold to a stored position parallel to and beneath the arm rest, when not use.

2.1.8 Fire Performance of Upholstered Seating: Shall meet Class 1 flammability requirements of the U.S. Department of Commerce Commercial Standard 191-53

2.1.9 Plastic Laminate: Plastic laminate shall be composed of a core of kraft papers, impregnated with phenolic resins, a decorated surface sheet, and overlay sheet containing melamine. Thickness for horizontal

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surfaces shall be .050, .030 for vertical. Color of plastic laminate shall be selected from the manufacturers standard color range. Molded plastic shall be one piece, high impact, linear polyethylene with built in burn rate of 1" per minute.

2.1.10 Wood: Plywood exposed or concealed shall be hardwood. All plywood's shall be hot pressed laminated. Interior plies shall be class 3 or better. Exposed exterior plies shall be class #1 continuous and selected as to color. All exposed hardwood veneer shall be maple or specified species. Particle core shall be 55 pound density. All exposed surfaces shall be stained to the color selected and coated with lacquer sufficient film depth to afford wear resistance of institutional quality.

2.1.11 Padding Material: Seat and back padding material shall be polyurethane foam. Padding material shall comply with the flammability requirements outline in California Technical Bulletin # 117, Resilient Cellular Materials section A&D, when tested in accordance with Federal Test Method 191.

2.1.12 Steel: All steel shall have smooth surfaces and be sufficient gauge thickness and designed to withstand strains of normal use and abuse. Exposed metal parts shall be powder coated with a hybrid powder coat finish.

2.1.13 ADA Requirements: Comply with Americans with Disabilities Act

2.1.14 Aisle Panel : Aisle panels shall be plastic laminate, hardwood veneer, or upholstered, as determine by the specifications. The aisle panel shall be high density particle core. Pedestal shall be constructed with 14 gauge steel with a formed panel of 16 gauge steel welded to the column. An 8" steel foot shall be welded to the column.

3.0 EXECUTION

3.1 Seating shall be installed in accordance with facility requirements, securely anchored in position and securely aligned vertically and horizontally.



SECTION 11106 REFRIGERATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential refrigerators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Refrigerators and Freezers: AHAM HRF-1.

2.2 Cords and Plugs: UL 62 and UL 817

2.3 General Electrical: NFPA 70 and 70B.

2.4 Compressors: UL 984.

2.5 Condensers: UL 250.

2.6 Motors: UL 73.

3.0 EXECUTION: (Section not used.)

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SECTION 11132 PROJECTION SCREENS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of projection screens. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Front-Projection Screens

2.1.1 Materials and Viewing Surface of Screens: Provide screens manufactured from mildew- and flame-resistant fabric with glass-beaded viewing surface and gain characteristics complying with FS GG-S-00172D(1) for Type C screen surface. Provide washable, glass-beaded viewing surface.

2.2.2 Fire-Test-Response-Characteristics: Provide projection-screen fabrics identical to materials that have been tested for flame resistance according to both small- and large-scale tests of NFPA 701.

2.2 Manually-Operated Screens: Provide manufacturer's standard spring-roller-operated units designed and fabricated for wall or ceiling installation and consisting of case, screen, mounting accessories, and other components necessary for a complete installation.

2.3 Electrically-Operated Screens: Provide manufacturer's standard UL-labeled units consisting of case, screen, motor, controls, mounting accessories, and other components necessary for a complete installation. Remotely control operation of each screen with single- or multiple-station controls.

3.0 EXECUTION:

3.1 Coordination: Coordinate layout and installation of projection screens with other construction supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system, and partitions.



SECTION 11150 PARKING CONTROL EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing, installation, maintenance, and repair of parking control equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Aluminum: Contractor shall provide alloy and temper recommended by aluminum manufacturer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.

2.1.1 Extruded Aluminum: **ASTM B 221 (ASTM B 221M)**, 6063-T6.

2.1.2 Aluminum Sheet: **ASTM B 209 (ASTM B 209M)**, 5005-H15.

2.1.3 Aluminum Floor Plate: ASTM B 632/B 632M, 6061.

2.2 Cold-Rolled Steel Sheet: ASTM A 366/A 366M.

2.3 Galvanized Steel Floor Plate: ASTM A 786/A 786M, hot-dip galvanized according to ASTM A 123.

2.4 Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, **G90 (Z275)** coating designation; commercial quality.

2.5 Steel Structural Tubing: ASTM A 500, cold-formed steel structural tubing, Grade B.

2.6 Steel Mechanical Tubing: ASTM A 513, welded steel mechanical tubing.

2.7 Hot-Dip Galvanized Mechanical Tubing: According to ASTM A 123.

2.8 Stainless-Steel Sheet: ASTM A 666, Type 302 or 304.

2.9 Plastic-Laminate Panels: NEMA LD 3, Type HWS, high-pressure decorative laminate, on **1/2-inch- (12.7-mm-)** thick particleboard.

2.10 Plywood Subfloors: Exterior classified plywood complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood."

2.11 Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type I (transparent glass, flat), Class 1 (clear).

2.12 Automatic Barrier Gates: The Contractor shall provide UL-approved, automatic, barrier-gate parking control system.

2.12.1 The Contractor shall fabricate cabinets of **0.0966-inch- (2.5-mm-)** thick steel sheet or **0.125-inch (3.2-mm)** sheet aluminum, internally reinforced. Weld seams and grind smooth. Provide weatherproof, gasketed access doors with flush-mounted locks; furnish two keys for each gate, keyed alike. Finish cabinet, interior and exterior, with manufacturer's standard white baked-enamel finish over primer system.

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2.12.2 The Contractor shall fabricate gate arm of lumber with **1-inch nominal (19-mm actual)** thickness, length as indicated. Finish with manufacturer's standard coating system with black diagonal stripes on traffic side face. Provide a mounting flange with breakaway feature to ensure a clean break if arm gets struck. Provide an automatic instant-reversing mechanism that stops downward motion of gate arm if arm strikes an object and that immediately returns arm to upward position. Include a 0- to 60-second variable-time reset device.

2.13 Vehicle Detectors:

2.13.1 Loop Detectors: The Contractor shall provide solid-state, electronic vehicle-detector units designed to detect presence or transit of a vehicle over an embedded loop of wire and emit an electrical pulse to operate other equipment. Provide a three-position sensitivity switch and detection indicator light on front panel.

2.13.2 Presence Detectors: The Contractor shall provide self-contained scanner detectors consisting of an infrared presence-sensing device to activate gate operator and a horizontal photoelectric beam to prevent gate from closing until traffic is clear. Detection patterns and sensitivity shall be adjustable.

2.14 Ticket Dispensers: The Contractor shall provide ticket dispenser units, labeled and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction, consisting of base cabinet and cap housing, ticket printing and issuing mechanism, ticket magazine, control panel, and electrical switches.

2.14.1 Cabinets: The Contractor shall provide base cabinet and cap housing fabricated of **0.0966-inch- (2.5-mm-)** thick steel sheet, reinforced internally with welded steel-angle framing. Weld seams and grind smooth.

2.14.2 Ticket Dispensing Mechanisms: Shall have removable assembly, with plug-in-type electrical connections for easy maintenance. Provide a self-sharpening ticket cutter. Before dispensing, ticket shall be imprinted with time and date.

2.15 Card Control Units: The Contractor shall provide pedestal-mounted card-control units to activate barrier gates. Fabricate housing of welded cold-rolled steel sheet with weatherproof access panel on front. Provide flush-mounted lock and two keys to operate access panel. Mount housing on a **2-inch- (50-mm-)** square, steel tube pedestal with a curved top to receive housing and a trim plate to cover anchor bolts. Finish units with manufacturer's standard baked-enamel coating system.

2.16 Clocks: The Contractor shall provide a cashier's clock for ticket dispenser at each exiting control location. Provide units that record time and date above same information printed by ticket dispenser; units shall record time in same manner as ticket dispenser. The clock case shall be fabricated of steel sheet and finish with manufacturer's standard coating system. Provide unit with an unbreakable crystal and a large, easy-to-read clock face.

2.17 Electronic Fee Computer: The Contractor shall provide manufacturer's standard electronic fee computer that will automatically calculate and display parking fees from ticket dispensed at entrance. Computer shall be programmable for at least six variable rates, and a permanent record of each transaction shall be registered in computer's memory.

2.18 Cashier's Booth: The Contractor shall provide manufacturer's standard, completely assembled, prefabricated cashier's booth, ready for installation on Project site. Booth generally consists of a structural frame and prefinished, insulated, wall and roof panels, sliding door, and operable windows. Provide built-



in cashier's work counter with storage drawer below. Equip booth with interior electric lighting, service outlets, and an electric heater.

2.18.1 Steel Booths: The Contractor shall provide manufacturer's standard steel cashier's booth with structural tubular steel frame and prefinished, insulated, galvanized steel sheet wall and roof panels.

2.18.2 Aluminum Booths: The Contractor shall provide manufacturer's standard aluminum cashier's booth with structural tubular aluminum frame and prefinished, insulated, aluminum sheet wall and roof panels; sliding door; and operable windows.

2.19 Accessories: The Contractor shall provide anchor bolts and other accessory items as required for installation and operation. Hot-dip galvanize anchor bolts and other accessory items according to ASTM A 153/A 153M.

3.0 EXECUTION:

3.1 Installation: Install parking control equipment according to manufacturer's written instructions and placement drawings. Unload cashier's booth with forklift or crane. Set booth level, plumb, and aligned. Cut groove in pavement and bury and seal wire loop according to manufacturer's written instructions. Connect to related equipment operated by detector.

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SECTION 11160 PLATFORM AND DOCK LIFTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for replacement, repair, and maintenance of platform and dock lifts. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Replacement Components:

2.1.1 Structural Components: All replacement parts of The equipment to be repaired shall be of such design, size, material, and strength as required to carry and sustain the maximum allowable load placed upon it.

2.1.2 Hydraulic System Components: Pipe, tubing, fittings, and hydraulic hose shall be designed and constructed with a minimum safety factor of three based on bursting pressure. Cylinders, pumps, and control valves shall be designed to withstand test pressures of 150 percent of the design operating pressure.

2.1.3 Electrical System Components: All electrical components shall comply with the National Electrical Code. Conduit, outlet boxes, and fittings shall be galvanized. Wire shall comply with Fed. Spec. J-C-30. All materials and equipment shall be rated for wet locations. Insulation resistance shall not be less than one megohm.

2.2 Dock Lifts shall comply with ASME 14.1. The replacement lift shall have the same capacity, travel, minimum lowered level, and nominal raising and lowering speed as the existing lift.

2.3 Truck Levelers: The truck leveler shall have a capacity of 40,000 pounds. Leveler shall have a total travel of 36 inches, divided as follows: 18 inches up, 18 inches down.

3.0 EXECUTION:

3.1 Repair: Installation of hydraulic system components shall be such that no leaks exist in any part of the system. All electrical work shall comply with the National Electrical Code.

3.2 Installation of Equipment: The equipment shall be installed by, or under the supervision of the manufacturer or his licensee. After installation is complete and equipment is properly adjusted, perform operational and load tests per manufacturer's instructions to ensure that the equipment functions properly and has the specified capacity.



SECTION 11161 PLATFORM AND DOCK LEVELERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for replacement, repair, and maintenance of platform and dock levelers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Replacement Components:

2.1.1 General: Replacement components shall be new and of matching quality and construction. Every replacement part shall be made to definite standards, tolerances, and clearances and to fit in the existing equipment.

2.1.2 Structural Components: All replacement parts of the equipment to be repaired shall be of such design, size, material, and strength as required to carry and sustain the maximum allowable load placed upon it.

2.1.3 Hydraulic System Components: The hydraulic system shall consist essentially of a hydraulic pump, hydraulic rams, pressure relief valve, fluid reservoir, hydraulic control valves including necessary continuous-duty solenoid valves and check valves, and connections. The system shall be installed as a separate and complete system in each platform unit.

2.1.4 Electrical System Components: All electrical components shall comply with the National Electrical Code. Conduit, outlet boxes, and fittings shall be galvanized. Wire shall comply with Fed. Spec. J-C-30. All materials and equipment shall be rated for wet locations. Insulation resistance shall be not less than 1 megohm.

2.2 Permanent, Self-Forming, and Free Standing Adjustable Dock Levelers: Levelers shall comply with DOC ASME MH14.1 for Class A loading. Minimum live load capacity for rollover and crossover travel shall be 12,000 pounds. Physical dimensions and maximum capacity shall be as designated.

2.3 Permanent Manually Operated Dockboards: Permanent manually operated dockboards shall comply with DOC ASME 14.1 for Class B loading. Minimum live load capacity for rollover and crossover travel shall be 12,000 pounds. Physical dimensions and maximum capacity shall be as designated.



SECTION 11165 PLATFORM AND DOCK BUMPERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of platform and dock bumpers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Timber Bumpers shall be dense red oak. Ends shall be smooth and edges rounded to a radius of approximately 1/2 inch. All bolt holes shall be countersunk. Bumpers shall be treated in compliance with AWWA P5. Treating process and results shall comply with Fed. Spec. TT-W-571. Retention shall be a minimum of 0.23 pounds of oxide per cubic foot of treated wood.

2.2 Laminated Rubber Bumpers shall be resilient rubber material made from rubberized fabric truck tires cut to uniform size pads and punched to receive 3/4-inch supporting rods. The bumpers shall be closed with 3-inch by 2-1/2 inch by 1/4-inch structural steel angles under approximately 1,500 pounds of pressure. Angles shall be welded to 3/4-inch rods at one end and closed with threaded rod and nuts at the other end. Anchor leg of angle shall extend a minimum of 2-1/2 inches beyond rubber surface at either end and contain 2 or 3 anchor bolt holes.

2.3 Extruded Rubber Bumpers shall be manufactured of extruded ethylene propylene diene monomers (EPDM) hydrocarbon rubber of 70 durometer hardness or higher and with a minimum tensile strength of 2,400 psi. All mounting holes shall be countersunk.

3.0 EXECUTION:

3.1 Removal of Existing Bumpers: Remove existing bumpers in a manner to prevent damage to the surface on which they are mounted. All existing anchor bolts that have deteriorated or are not in proper position to facilitate mounting of new bumpers shall be cut off flush with the base surface. Existing bumpers that have been mounted by welding shall be removed by cutting torch and the resultant mounting surface power ground smooth and flush prior to installation of the new bumper.

3.2 Installation of New Bumper: All mounting hardware shall be new except existing expansion shields that are properly located and in suitable condition for reuse. Final installation shall be properly aligned, tight and flush against mounting surface.



SECTION 11402 FOOD SERVICE EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of food service equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Food service equipment shall comply with applicable NSF Standards. Gas-burning equipment shall be designed for operation with the type of gas designated and shall be approved by AGAL. Electrically operated equipment shall be in accordance with applicable standards of the UL Electrical Appliance and Utilization Equipment Directory and UL 197.

2.1 Equipment:

- 2.1.1 Vertical Steam Cooker: Mil. Spec. MIL-C-2354.
- 2.1.2 Commercial-Type Range: Gas, Fed. Spec. A-A-50064; electric, Fed. Spec. A-A-50035.
- 2.1.3 Ice Cube Machine: Mil. Spec. MIL-I-11867.
- 2.1.4 Rinser-Sanitizer: Mil. Spec. MIL-R-19038.
- 2.1.5 Fry Pan: Gas, ASTM F 1047; electric, ASTM F 1047.
- 2.1.6 Automatic Coffee Urn: Mil. Spec. MIL-U-43263.
- 2.1.7 Steam Kettles: Electric, Mil. Spec. MIL-K- 43359; gas, Mil. Spec. MIL-K- 43943.
- 2.1.8 Food Service Cabinets, Warmer-Refrigerator, Roll-Through, Roll-In: Mil. Spec. MIL-C-43427.
- 2.1.9 Convection Ovens: Gas, Fed. Spec. A-A-50042; electric, Fed. Spec. A-A- 50039.
- 2.1.10 Sanitizing Hot Water Heater: Mil. Spec. MIL-H-43895.
- 2.1.11 High Pressure Cleaning and Sanitizing Machines: Mil. Spec. MIL-C- 43949.

2.2 Materials:

- 2.2.1 Black Iron Pipe: ASTM A 53.
- 2.2.2 Brass Pipe: ASTM B 43, Class 1.
- 2.2.3 Chromium Plating of Brass Pipe, Valves, and Fittings: ASME A112.18.1M.
- 2.2.4 Copper Tubing: ASTM B 88, Type K or L, or ASTM B 75, as required.
- 2.2.5 Stainless Steel, Nonmagnetic: ASTM A 167 or ASTM A 240.
- 2.2.6 Stainless Steel Pipe and Tubing: Seamless or welded, of true roundness, and of material specified for stainless steel. Seamless tubing shall be thoroughly annealed, pickled, and ground smooth. Welded tubing shall be thoroughly heat-treated, quenched to eliminate carbide precipitation, and then drawn true to size, roundness, and ground. Tubing shall be given a No. 3 or 4 finish when exposed to view.
- 2.2.7 Fittings for Copper Tubing: Solder-joint type. Flared joint fittings may be used in specific applications when approved. Cast bronze solder joint fittings shall conform to ANSI B16.22. Wrought copper and wrought bronze solder joint fitting shall conform to ANSI B16.22. Cast bronze fittings for flared joints shall conform to ANSI B16.26.
- 2.2.8 Fittings for Brass Pipe: as required.
- 2.2.9 Galvanizing Repair Compound: ASTM D 520.
- 2.2.10 Silver Solder: Fed. Spec. QQ-B-654, class as applicable.
- 2.2.11 Steel Structural Shapes for Framing: ASTM A 36. Sections shall be galvanized by the hot-dip process, conforming to ASTM A 123, coating designation G-90.
- 2.2.12 Tin-Lead Solder: Fed. Spec. QQ-S-571, composition Sn50.

2.3 Garbage Disposal Machine: A floor supported type with cast alloy body supported on adjustable tubular legs. The upper housing shall be removable. The disposal shall be provided with a stainless steel cone with a water swirl inlet. Throat shall have a neoprene silver trap.

2.3.1 The Disposal shall be provided with magnetic starter with overload and under voltage protection, 5-minute timer, panel cover interlock, fused disconnect, prewired solenoid, vacuum breaker, water flow controls, positive flushing action and reversing action, or other positive means of preventing jamming. The rotor shall be cast alloy carrying rigid impact bars fixed directly onto motor shaft, or stainless steel swivel

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impellers and stainless steel undercutter. Disposal machines with a 5 hp or 7-1/2 hp motor shall have a minimum 8-inch diameter rotor.

2.3.2 Control: Control panel box shall be waterproof stainless steel construction.

2.4 Hoods: Design, fabrication, and installation of hoods and duct systems shall conform to NFPA 96 and UL 710 where applicable. Hood duct systems, grease removal devices, and cooking equipment, which may be a source of ignition of grease in the hood or duct, shall be protected with fixed pipe systems and provided with portable fire extinguishing equipment in accordance with NFPA 96, NFPA 17, and as specified. Ducts and hoods shall be secured to building so as to be level and free from vibration under all conditions of operations. Hoods, exposed ducts, and enclosures over dishwashing machines and rinse compartment of pot washing sinks shall be constructed of 18-gauge stainless steel. Hood shall be fabricated so as to form a condensate gutter at the perimeter and shall be provided with a condensate drain terminating at the floor sink location. Exhaust outlet shall be connected to the exhaust system.

2.5 Prefabricated Walk-In Refrigerators: Commercial, walk-in type, intended for use in dining facilities, in accordance with UL 207, UL 471, and NSF Std 7 except insulation shall provide a maximum "U" factor of 0.0295 Btuh.

2.6 Gas Burning Equipment shall comply with the applicable requirements of AGAL and ANSI. Each gas-burning appliance shall be connected to the building piping by means of a quick-disconnect device and flexible connector. A manual shutoff valve shall be installed on the building piping, ahead of the supply side of each quick-disconnect device. The quick-disconnect device shall conform to ANSI Z21.41 and the flexible connector to ANSI Z21.45. The length of the flexible connector shall be as required but shall not exceed 72 inches. Flexible connector shall not be concealed and shall not extend from one room to another. Dust caps and plugs shall be provided for quick-disconnect fittings for use when fittings are uncoupled.

2.7 Backflow Preventers: Each item of food service equipment having water supply and waste connections, with the water inlet connected below the flood level of the equipment, shall be supplied with backflow preventer of size and proportions that will allow an ample flow of water to the equipment, but will prevent the backflow of waste or polluted water into the water supply system.

2.8 Paint shall be of a durable, nontoxic, nondusting, nonflaking, and mildew-resistant type, suitable for use with food service equipment and in conformance with NSF 2.

3.0 EXECUTION:

3.1 Installation: Equipment shall be installed in accordance with NSF Installation Manual for Food Service Equipment. The Contractor shall make provision for the plumbing, heating, and electrical connections and for equipment indicated as being furnished and installed by the Government. Equipment connections shall be complete to wall or floor for all utilities. Unless otherwise specified, exposed piping shall be chromium-plated copper alloy or stainless steel. Gas equipment installation shall conform to ANSI Z21.15 and NFPA 54. Electrical work shall comply with NFPA 70.

3.2 Painting: All exterior, galvanized parts, exposed members of framework, and wrought steel pipe, where specified to be painted, shall be cleaned, degreased, primed with rust inhibiting primer, and finished with two coats of epoxy-based grey hammertone paint.



SECTION 11415 UNIT KITCHENS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of unit kitchens. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Electrical components shall comply with applicable UL standards and bear appropriate UL labels. Gas-burning equipment shall comply with ANSI Z21.1 and shall bear the AGA seal of approval.

2.1 Materials: Minimum 22-gauge steel sheet for component body parts, minimum 20-gauge steel sheet for door fronts and liners, and heavier-gauge steel for internal gussets and bracing.

2.1.1 Steel Sheet: ASTM A 366/A 366M, exposed, matte finish, cold-rolled carbon-steel sheet.

2.1.2 Steel Sheet for Porcelain Enameling: ASTM A 424, commercial quality, cold-rolled carbon-steel sheet.

2.1.3 Stainless-Steel Sheet: ASTM A 666, Type 304.

2.1.4 Particleboard: ANSI A208.1, Grade M-2.

2.1.5 Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.1.6 Solid Wood: Clear hardwood lumber of species indicated, free of defects, selected for compatible grain and color, and kiln dried to 7 percent moisture content.

2.1.7 Vinyl-Faced Fiberboard: Medium-density fiberboard complying with ANSI A208.2, milled to required shapes, with thermoformed vinyl overlay applied in a vacuum or membrane press.

2.1.8 High-Pressure Decorative Laminate: NEMA LD 3.

2.1.9 Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with material and performance requirements in ANSI Z124.3, Type 5 or Type 6, without pre-coated finish.

2.2 Components: Electrical components shall be wired for the voltage available and shall terminate at factory-installed terminal boxes. Gas-burning components shall be designed to operate on the designated fuel. Unit kitchens shall include the following, as required:

2.2.1 Top and Sink shall be seamless, one-piece with integral back and end splashes fabricated from 18-gauge AISI Type 302/304 stainless steel with No. 4 brushed finish or 16-gauge minimum titanium steel with acid-resistant porcelain finish. Sink accessories shall include chrome-plated swing spout faucet with aerator, chrome-plated faucet handles, stainless steel cup strainer, and drain outlet with tailpiece.

2.2.2 Food Waste Disposer shall be continuous-feed-type food-waste disposer, minimum 1/2 hp, overload protected and wall-switch operated; corrosion-resistant construction, with quick-mounting feature, stainless-steel sink flange, cushioned suspension, stainless-steel grinding chamber, jam-resistant cutting/shredding mechanism, anti-splash guard, combination cover/stopper, drain outlet and tailpiece.

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2.2.3 Refrigerator and Freezer Compartments shall be the designated minimum capacity measured in accordance with AHAM HRF-1. The refrigerator shall be furnished with an automatic icemaker.

2.2.4 Range: Each cook-top burner shall be rated at not less than 1,250 watts, if electric, or 8,000 Btu, if gas.

2.2.5 Oven: Electric oven "Bake" operation shall be rated at 2,000 watts minimum and "Broil" operation shall be rated at 2,500 watts minimum; gas oven burners shall be rated at 18,000 Btu minimum.

2.2.6 Microwave Oven: Minimum **0.6-cu. ft. (0.017-cu. m)** capacity, minimum 600 W, complete with variable power control, timer, tempered glass door, start-stop switches, and interior light.

2.2.7 Dishwasher: Built-in under counter unit, with multiple wash cycles, roll-out coated racks, and insulated cavity walls and door.

2.2.8 Automatic Coffeemaker: Stainless steel, permanently installed on countertop. Provide glass coffee decanters in number to match capacity.

2.2.9 Ventilating Exhaust Hood: Under-cabinet mounted, **24 inches (610 mm)** wide, with 2-speed fan, permanent washable filter, and built-in lighting. Include exhaust duct and wall or roof cap and shutter

2.2.10 Cabinets shall be under-counter and upper wall-mounted, with shelves, doors, drawers, and hardware.

3.0 EXECUTION:

3.1 Installation: Comply with unit kitchen manufacturer's written installation instructions, unless more stringent requirements are indicated.

3.1.1 Anchorage: Securely anchor components and appliances to supporting cabinets or countertops with concealed fasteners. Securely anchor unit kitchens to adjacent walls and floor with concealed devices.

3.1.2 Clearances: Verify that clearances are adequate to properly and freely operate appliances.

3.1.3 Connections: Connect unit kitchens to plumbing, mechanical, and electrical systems.



SECTION 11420 RANGES AND OVENS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential ranges and ovens. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Conduit: UL 1.

2.2 Conductors: UL 62, UL 83, and UL 817.

2.3 Switches: UL 20 and UL 917.

2.4 Fuses and Fuseholders: UL 198 and UL 512.

2.5 Connectors: UL 486.

2.6 Ranges: UL 858.

2.7 Thermal Cutoffs: UL 1020.

2.8 General Electrical: NFPA 70 and 70B.

2.9 Pilot Lights: UL 496 and UL 542.

2.10 Range Hoods: Non-vented, two-speed fan, charcoal filter, light, UL listed.

3.0 EXECUTION: (Section not used.)



SECTION 11484 GYMNASIUM EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gymnasium equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Basketball Backstops shall be ceiling-suspended forward-folding, backward-folding, side-folding, wall-braced or fixed type; wall-mounted up-folding, side-folding or fixed type; or floor-mounted portable type as required. Backstop shall come complete with backboard, goal, and all accessories. Backboard material shall be glass, fiberglass, steel or wood as required and rectangular or fan shaped. Movable backstops shall be manually or electrically operated. Backstops, goals, and their accessories shall meet the specifications of the National Collegiate Athletic Association.

2.2 Telescoping Bleachers shall be operable bleacher systems of multiple-tired benches on interconnected folding supports, which permit closing, without requiring being dismantled, into a nested relationship for purposes of storing or moving. The bleachers shall be wall-attached, free-standing floor-attached, or free-standing movable type as required. The bleachers shall conform to the applicable requirements of Chapter 5 of NFPA 102. Bleacher seats shall be wood, vinyl-clad steel, or plastic, as required. System shall have row rise and row spacing as desired and shall come complete with end panels, rear fillers, back panels, end railings and back railings as required. Bleachers shall be manually or electrically operated.

2.3 Gym Divider Curtains shall be constructed of vinyl for the first eight feet (8' 0") above the floor. The remainder shall be 1-3/4 inch mesh, white nylon netting. A chain or other ballast shall be sewn into the bottom hem. Curtains that are drawn shall be manually operated and glide along their own track. Roll-up curtains shall be power-operated.

3.0 EXECUTION:

3.1 Basketball Goals shall be securely attached to supporting construction and shall be installed at a height of 10 feet from the rim to the floor.

3.2 Telescoping Bleacher Seating: Verify that areas to receive telescoping bleacher seating are free of impediments interfering with installation and operation. Securely attach to supporting construction.

3.3 Gym Divider Curtains: Verify that areas to receive gym divider curtains are free from interferences and structurally capable of supporting the curtains.



SECTION 11486 DEMOUNTABLE BLEACHERS (EXTERIOR)

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of demountable bleachers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Hardware and Accessories shall be zinc-coated or hot-dipped galvanized steel or aluminum.

2.2 Lumber used for seat-board and foot-board repair or replacement shall be species and grades complying with National Forest Products Association National Design Specification for Wood Construction and Its Fastenings. Sizes shall comply with American Lumber Standards Committee PS20. Lumber materials shall bear the mark of a recognized inspection agency identifying the species, grade, and compliance with the applicable standard. Wood preservatives shall be pressure-applied and shall comply with ASTM D 1760. Creosote or arsenate treatments shall not be used.

2.2.1 Seat-board Lumber shall be kiln-dried Dense No. 1 Douglas fir or Dense No. 1 Southern pine boards.

2.2.2 Foot-board Lumber shall be kiln-dried Dense No. 1 Douglas fir or Dense No. 1 Southern pine boards.

2.3 Steel Structural Members shall comply with ASTM A 36.

2.4 Aluminum Structural Members shall comply with ASTM B 308.

3.0 EXECUTION: Repair or replace bleacher components using methods complying with the approved practices as referenced in American Institute of Timber Construction Timber Construction Manual.



SECTION 11498 FIXED WOOD BLEACHERS (EXTERIOR)

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fixed wood bleachers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Hardware, Brackets, Fasteners, and Connectors shall be zinc-coated or hot-dipped galvanized steel or aluminum. Nails, brads, staples, and spikes shall comply with ASTM F 547.

2.2 Lumber and Timber Members used for repair or replacement of bleacher components shall be of the species and grades complying with National Design Specification for Wood Construction and its Fastenings (National Forest Products Association). Sizes shall comply with American Lumber Standards Committee PS20. Lumber materials shall bear a mark of recognized inspection agency identifying the species, grade, and compliance with the applicable standard. Wood preservatives shall be pressure-applied and shall comply with ASTM D 1760. Creosote or arsenate treatments shall not be used.

2.2.1 Seatboard Lumber shall be kiln-dried Dense No. 1 Douglas fir or Dense No. 1 yellow pine boards.

2.2.2 Footboard Lumber shall be kiln-dried Dense No. 1 Douglas fir or Dense No. 1 yellow Southern pine boards.

2.2.3 Support Member and Timber shall be Dense No. 1 Douglas fir or Dense No. 1 yellow pine timbers or boards.

2.3 Ready-Mixed Concrete shall comply with ASTM C 94 with compressive strength of 3,000 pounds per square inch (210.9 kgs per square cm) at 28 days and shall be protected from freezing for seven days after placement.

2.4 Reinforcement for Concrete shall comply with ASTM A 184, A 185, or A 615 as indicated.

3.0 EXECUTION: Repair or replace wooden bleacher components using methods complying with the approved practices as referenced in American Institute of Timber Construction Timber Construction Manual.



SECTION 11501 PAINT SPRAY BOOTH

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of paint spray booths. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. Contact the Fire Protection Engineering Branch for requirements of paint spray booth protection.

2.0 PRODUCTS: All products shall meet applicable OSHA and NFPA standards.

2.1 Enclosure:

2.1.1 Panels: 18 gauge, ASTM A 568.

2.1.2 Stiffeners and Support Shapes: ASTM A 36.

2.1.3 Exhaust Chamber: 18 gauge, formed to hold filters.

2.1.4 Doors:

2.1.4.1 Access Door: 2 feet 6 inches by 7 feet 0 inches, steel-clad.

2.1.4.2 Entrance Doors for Vehicular Booths: Swing type, two-section, steel-framed with intake air filters, a minimum opening of 8 feet 9 inches in height by 9 feet 10 inches in width, leak-proof seals and a heavy-duty latch.

2.1.4.3 Exit Doors for Vehicular Drive-Through Booths: Swing type, two-section, steel frame, metal-clad, solid, with a minimum opening of 7 feet 9 inches in height by 9 feet 10 inches in width, leak-proof seals, and a heavy-duty latch.

2.1.5 Factory Finish: Galvanized or painted.

2.2 Filtering Equipment:

2.2.1 Arrestor: Disposable, expanded fiber or fiberglass, Class 2 listed by UL.

2.2.2 Water Wash: Complete with pumps, spray nozzles, baffles, and controls.

2.3 Exhaust Fans shall be sized to maintain 100 fpm minimum across the cross sectional area of booth and shall have permanently lubricated bearings and enclosed belts. Fan motors shall be located outside of air stream.

2.4 Lighting: Fluorescent.

2.5 Fans, Controls, and Lights inside Paint Booths shall be explosion proof.

3.0 EXECUTION: Installation shall comply with applicable codes and environmental regulations.

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SECTION 11600 METAL MEDICAL CASEWORK

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of metal medical casework. Products shall match existing and/or be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Steel Sheet: ASTM A 366 (ASTM A 366M), matte finish, suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness. For enamel-steel medical casework, provide components of the following thickness:

2.1.1 Sides, ends, fixed backs, bottoms, cabinet tops, soffits, and items not otherwise indicated: 0.0478 inch (1.2 mm).

2.1.2 Back panels, doors, drawer fronts and bodies, and shelves: 0.0359 inch (0.9mm). For shelves more than 36 inches (900 mm) long, use 0.0478-inch- (1.2-mm-) thick metal or provide suitable reinforcement.

2.1.3 Intermediate horizontal rails, center posts, and top gussets: 0.0598 inch (1.5 mm).

2.1.4 Drawer runners and hinge reinforcements: 0.0747 inch (1.9 mm).

2.1.5 Leveling and corner gussets: 0.1046 inch (2.7 mm).

2.2 Stainless Steel Sheet: ASTM A 666, Type 304, stretcher-leveled standard of flatness. For enamel-steel medical casework, provide components of the following thickness:

2.2.1 Sides, ends, fixed backs, bottoms, cabinet tops, soffits, and items not otherwise indicated: 0.0500 inch (1.3 mm).

2.2.2 Back panels, doors, drawer fronts and bodies, and shelves: 0.0375 inch (0.95 mm). For shelves more than 36 inches (900 mm) long, use 0.0500-inch- (1.3-mm-) thick metal or provide suitable reinforcement.

2.2.3 Intermediate horizontal rails, center posts, tubular legs, and top gussets: 0.0625 inch (1.6 mm).

2.2.4 Drawer runners and hinge reinforcements: 0.0781 inch (2.0 mm).

2.2.5 Leveling and corner gussets: 0.1094 inch (2.8 mm).

2.3 Clear Float Glass: ASTM C 1036, Type I, Class 1.

2.4 Clear Tempered Glass: ASTM C 1038, Kind FT, Condition A, Type I, Class 1.

2.5 Laminated Safety Glass: ASTM C 1172, Kind LT, Condition A, Type I, Class I.

2.6 Fabrication: The Contractor shall complete assembly and finish work at point of manufacture. Perform assembly on precision jigs to provide units that are square; fully reinforced with angles, gussets, and channels; and integrally framed and welded to form a dirt- and vermin-retardant enclosure. Maintain uniform clearance around door and drawer fronts of 1/16 to 3/32 inch (1.5 to 2.4 mm).



2.7 Finishes:

2.7.1 Enamel-Steel: Immediately after cleaning and pretreating, apply manufacturer's standard 2-coat, chemical-resistant, baked-enamel finish consisting of prime coat and thermosetting topcoat with a minimum dry film thickness of **1 mil (0.025 mm)** for topcoat and **2 mils (0.05 mm)** for system.

2.7.2 Stainless Steel: Grind and polish surfaces to produce uniform, directional, textured, polished finish free of cross scratches and matching No. 4 finish.

2.8 Casework Hardware: Provide manufacturer's standard satin-finish, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.

2.9 Countertops, Sinks, and Shelving:

2.9.1 Stainless Steel Tops: Made from **0.0625-inch- (1.6-mm-)** thick, stainless-steel sheet, ASTM A 666, Type 304 with No. 4 satin finish.

2.9.2 Stainless Steel Sinks: Made from **0.050-inch- (1.27-mm-)** thick, stainless-steel sheet, ASTM A 666, Type 304. Fabricate with corners rounded and coved to at least **5/8-inch (16-mm)** radius. Slope sink bottoms to outlet. Provide double-wall construction for sink partitions with top edge rounded to at least **1/2-inch (13-mm)** diameter. Provide continuous butt-welded joints, grind smooth, and polish surfaces to produce finish indicated, free of cross scratches. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

2.9.3 Stainless Steel Shelving: Shelves made from **0.050-inch- (1.27-mm-)** thick, stainless-steel sheet, ASTM A 666, Type 304 with No. 4 satin finish. Fold down front edge **3/4 inch (19 mm)** and hem; turn up back edge **3 inches (76 mm)**. Provide integral stiffening brackets, formed by folding up ends and welding to upturned back edge. Weld shop-made joints, grind smooth, and finish.

3.0 EXECUTION:

3.1 Casework Installation:

3.1.1 Install level, plumb, and true; shim as required, using concealed shims. Where casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

3.1.2 Installation of Countertops (Field Jointing): Provide flush welded joints in tops. Grind and polish surfaces to produce uniform, directional, textured, polished finish indicated, free of cross scratches. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

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SECTION 11700 LABORATORY AND MEDICAL EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of laboratory and medical equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Materials: Materials, unless otherwise specified, shall conform to the following:

2.1.1 Carbon Steel: ASTM A 36/36M, ASTM A 285/285M, ASTM A 515/515M, or ASTM A 366/366M.

2.1.2 Chromium Clad Steel: ASTM A 263.

2.1.3 Nickel: ASTM B 39.

2.1.4 Nickel and Nickel-Alloy Cladded Steel for Pressure Vessels: ASTM A 265.

2.1.6 Stainless Steel: ASTM A 167, Type 301, 302, 304, or 316L.

2.1.7 Stainless Steel Bars and Rods: ASTM B 166.

2.1.8 Stainless Steel for Pressure Vessels: ASTM A 240/240M.

2.1.9 Stainless Steel Clad for Pressure Vessels: ASTM A 264.

2.1.10 Tin: ASTM B 339.

2.1.11 Titanium: For construction products used in contact with distilled water, ASTM B 348, Grade 2.

2.2 Piping and Tubing: Piping and tubing shall conform to the following:

2.2.1 Copper Pipe for Steam and Condensate Lines: ASTM B 42.

2.2.2 Brass Pipe for Steam and Condensate Lines: ASTM B 43.

2.2.3 Brass Pipe for Gaseous Sterilant Lines: ASTM B 43, Alloy 230.

2.2.4 Brass Tube for Steam and Condensate Lines: ASTM B 135, Alloy 230.

2.2.5 Copper Tube for Water and Waste Lines: ASTM B 88.

2.2.6 Brass Tube for Water and Waste Lines: ASTM B 135, Alloy 230.

2.2.7 Stainless Steel Tube for Gaseous Sterilant Lines: ASTM A 269, ASTM A 312/312M, or ASTM B 167, as applicable.



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2.3 Equipment Supports: The Contractor shall furnish equipment supports such as stands, brackets, hangers, and similar supports for equipment and accessories, including pipe, duct, and conduit specified in this section. Floor stands shall be field adjustable for leveling.

2.4 Electrical Work: Electric motor-driven equipment shall be provided complete with motors, motor starters, and controls. Electrical equipment and wiring shall be in accordance with Section 16415 ELECTRICAL WORK, INTERIOR. Electrical characteristics shall be as specified herein or indicated. Motor starters shall be provided complete with thermal overload protection and other appurtenances necessary for the motor control specified. Each motor shall be of sufficient size to drive the equipment at the specified capacity without exceeding the nameplate rating of the motor. Manual or automatic control and protective or signal devices required for the operation specified and any control wiring required for controls and devices specified shall be provided.

2.5 Compliance: The label or listing of the Underwriters Laboratories, will be accepted as evidence that the equipment conforms to the standard. In lieu of this label or listing, the manufacturer may submit a statement from a nationally recognized, equally equipped testing agency indicating that items have been tested in accordance with specification requirements.

2.5.1 Standard Products: Material and equipment shall be the standard product of manufacturers regularly engaged in the manufacture of the products and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. Equipment shall be supported by a service organization that is, in the opinion of the Contracting Officer, reasonably convenient to the site.

2.5.2 Nameplates: Each major item of equipment shall have the manufacturer's name, address, and catalog or serial number permanently affixed to a plate securely attached to the equipment. In addition, each pressure vessel shall bear the ASME stamp and pressure rating, indicating compliance with applicable code requirements.

2.5.3 Verification of Dimensions: The Contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing the work.

2.5.4 Equipment Guards: Belts, pulleys, chains, gears, couplings, projecting setscrews, keys, and other rotating parts exposed to personnel contact shall be fully enclosed or properly guarded.

2.5.5 Sanitary Safeguard: Protection against backflow and siphonage shall be provided in accordance with [NAPHCC-01](#).

2.6 Equipment Finishes: Exposed carbon steel surfaces of equipment shall be protected by manufacturer's standard finish. Unless otherwise specified, exposed stainless steel surfaces of all equipment shall have satin No. 3 or No. 4 finish unless otherwise approved.

3.0 EXECUTION:

3.1 Installation: Equipment shall be installed at locations indicated in accordance with manufacturer's printed installation instructions and approved detail drawings. Necessary items such as framing, mounting hardware and trim shall be furnished and installed as required for the type of equipment furnished.

3.2 Adjusting: Following installation, flows, timers, levelers, and similar components and operation devices shall be adjusted as appropriate. After testing, and before acceptance, equipment shall be examined to ensure that adjustments are correct and that any additional adjustments deemed necessary during product testing or because of timing, have been incorporated.

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3.3 Utilities:

3.3.1 Service runs from equipment shall be connected to building services as indicated.

3.3.2 Connections between ferrous and nonferrous metallic pipe shall be made with dielectric unions or flanges using dielectric material.

3.3.3 Steam lines on equipment for connection to building source shall be connected only after building steam lines have been cleaned of preservatives and materials that may be harmful to the equipment.

3.3.4 Distillate coolers or other protective devices shall be installed as necessary to protect high temperature discharge to waste.

3.4 Testing: Testing shall be performed in accordance with referenced specifications and/or requirements specified . One item or similar model, as necessary or appropriate, shall be tested to ensure that it is operational and installation conforms to specification requirements. Manufacturer's standard equipment warranty shall not begin until the manufacturer certifies equipment conformance to all required testing specified and until beneficial occupancy of the portion of the facility where the equipment is installed.

3.5 Field Services and Training: The Contractor shall provide the services of a manufacturer's representative who is experienced in the installation, adjustment, and operation of the equipment specified shall be provided. The representative shall supervise the installation, adjustment, and testing of the equipment. The Contractor shall also conduct training course for operation staff as designated by the Contracting Officer. The training period shall start after systems are functionally complete but prior to final acceptance . The field instructions shall cover all of the items contained in the operations and maintenance instructions, as well as demonstrations of routine maintenance operations. The Contracting Officer shall be notified at least 14 days prior to date of proposed conduction of training course.



SECTION 11910 DISHWASHERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential dishwashers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Dishwashers: UL 749.

2.2 Time Control: UL 917.

2.3 Control Valves: UL 429.

2.4 General Electrical: NFPA 70 and 70B.

2.5 Cords and Plugs: UL 62.

2.6 Motors: UL 73 and UL 547.

2.7 Safety-Interlock Switch: UL 749.

3.0 EXECUTION: (Section not used.)

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SECTION 11912 GARBAGE DISPOSERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential garbage disposers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Household Garbage Disposal: AHAM FWD-1.

2.2 Cords and Plugs: UL 62 and UL 817.

2.3 Motors: UL 73.

2.4 General Electrical: NFPA 70 and 70B.

3.0 EXECUTION: (Section not used.)



SECTION 11920 CLOTHES DRYERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential clothes dryers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cords and Plugs: UL 62 and UL 817.

2.2 Thermal Cutoffs: UL 1020.

2.3 General Electrical: NFPA 70.

2.4 Motors: UL 73.

2.5 Home Laundry Equipment: UL 560.

2.6 Switches: UL 917 and UL 20.

2.7 Lamps and Lamp Holders: UL 496 and UL 542.

2.8 Vent Duct: Plastic wrapped, flexible wire duct of diameter to fit duct pipe of machine.

2.9 Weather Hood: Aluminum construction with backdraft damper.

3.0 EXECUTION: (Section not used.)

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SECTION 11922 CLOTHES WASHERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of residential clothes washers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Cords and Plugs: UL 62 and UL 817.

2.2 Electrically-Operated Valves: UL 429.

2.3 Home Laundry Equipment: UL 560.

2.4 Lamps and Lamp Holders: UL 496 and UL 542.

2.5 General Electrical: NFPA 70.

3.0 EXECUTION: (Section not used.)



DIVISION 12 FURNISHINGS



SECTION 12531 WINDOW TREATMENT HARDWARE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of curtain and drapery hardware. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's written recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: For each type of curtain or drapery hardware specified, Include the maximum weight of window treatment that can be operated by hardware, and installation and maintenance instructions.

2.2 Aluminum: Products shall be Anodized Aluminum Alloy with a minimum thickness of 0.047 inches with baked on enamel paint finish.

2.3 Steel: Products shall be phosphate treated steel with a minimum thickness of 0.027 inches with baked on enamel paint finish.

2.4 Wood, Ribbed Wood, Plastic and Acrylic: Products shall meet or exceed requirements of NFPA 701.

3.0 EXECUTION:

3.1 Hardware Installation:

3.1.1 Engage an experienced contractor who has completed window treatment hardware installations similar in material, design, and extent to those indicated for this project and with a record of successful in-service performance.

3.1.2 Installation shall be in accordance with the manufacturer's written installation instructions. Units shall be level, plumb, secure, and at proper height and location relative to window units.

3.1.3 The contractor shall furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation.

3.1.4 Isolate metal parts of the window treatment hardware from concrete or mortar to prevent galvanic action. Use tape, thickened coatings, or another manufacture recommended method.

3.1.5 Installation shall not be initiated until completion of room painting and finishing operations. Upon completion of the installation, window hardware shall be adjusted for form and appearance, shall be in proper operating condition, and shall be free from damage or blemishes. Damaged units shall be repaired or replaced by the contractor as directed by the contracting officers.



DIVISION 13 SPECIAL CONSTRUCTION



SECTION 13090 RADIATION PROTECTION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of radiation protection shielding. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Radiation protection shielding shall be the design and product of a firm experienced in manufacturing products similar to those indicated and with a record of successful in-service performance. Obtain each type of radiation protection product through one source from a single manufacturer.

2.1 Materials:

2.1.1 Lead Sheet: FS QQ-L-201, Grade C, or ASTM B 749, alloy UNS No. L51120 (chemical lead).

2.1.2 Lead Bricks: Interlocking cast- or extruded-lead bricks made from pig lead, complying with ASTM B 29 with 1/2 percent antimony added, with tongues on one edge and end and grooves on one edge and end.

2.1.3 Borated Polyethylene: Manufactured specifically for neutron shielding and containing not less than 5 percent boron.

2.1.4 Lead Glass: Lead-barium, polished plate glass containing more than 60 percent heavy metal oxide, including 55 percent lead oxide by weight.

2.1.5 Lead Glazing Plastic: Transparent acrylic sheet impregnated with an organolead compound and containing 30 percent lead by weight.

2.1.6 Lead-Lined Concrete Masonry Units: Fabricated from 2 solid concrete units, complying with ASTM C 90 or ASTM C 129, separated vertically by a single lead sheet permanently bonded or anchored between the 2 halves. Size lead sheets to provide a **1-inch** overlap with adjacent units or provide supplemental lead to ensure uninterrupted protection.

2.1.7 Masonry Mortar: Comply with ASTM C 270, Type N, Proportion Specification.

2.1.8 Lead-Lined Plywood Panels: Panels complying with HPVA HP-1, at least **1/2 inch** thick, with a single lead sheet laminated to the back of the panel.

2.1.9 Lead-Lined Gypsum Lath: Gypsum lath with a single lead sheet, **1 inch** longer and wider than lath, laminated to the back of the lath so lead extends **1 inch** beyond one side and one end.

2.1.10 Lead-Lined Gypsum Board: Gypsum board of width and length required for support spacing and to prevent cracking during handling, with a single lead sheet laminated to the back of the board.

2.2 Doors and Frames:

2.2.1 Lead-Lined Steel Doors: Steel doors shall comply with NAAMM HMMA 861, except that a single continuous lead sheet, of thickness indicated and extending from top to bottom and edge to edge, shall be



installed either between back-to-back stiffeners or between stiffeners and stop face of door. Size doors for **1/16-inch** clearance from frames at heads and jambs and for minimum clearance at bottom.

2.2.2 **Lead-Lined Steel Door Frames:** Steel door frames shall comply with NAAMM HMMA 861 and lined with lead sheet of thickness not less than that required for doors and walls where frames are used.

2.2.3 **Lead-Lined Wood Doors:** Flush wood doors shall comply with NWWDA I.S. 1-A and have one continuous lead sheet extending from top to bottom and edge to edge, constructed in the core. Assemble lead lining and core with poured lead fasteners or steel bolts. Space fasteners not more than **1-1/2 inches** from door edge and about **8 inches** o.c. Countersink bolt heads and cover with poured lead.

2.2.4 **Neutron Shielding Doors and Frames:** Steel plate doors shall be lined with lead sheet and borated polyethylene and hung from structural-steel door frames.

2.3 **Lead Door Louvers:** Provide louvers with about 30 percent minimum free area, of sizes and types indicated. Fabricate from formed-lead sheet or lead extrusions of not less than lead thickness required for door in which louver is installed. Fabricate louvers to be lightproof with fixed maze-type blades that maintain required lead equivalence at all points and in all directions. Factory fit and assemble louvers in doors before shipping to Project site.

2.4 **View-Window Frames:** Fabricate from **0.0428-inch-thick**, formed-steel sheet or **0.064-inch** thick aluminum extrusions with mitered corners, welded or bolted with concealed fasteners.

2.4.1 Line with lead sheet formed to match frame contour, continuous in each jamb and across head and sill, lapping the stops, and fabricated wide enough to maintain an effective lap with lead of adjoining assemblies.

2.4.2 Construct so lead lining overlaps glazing material perimeter by at least **3/8 inch** and provide removable stops.

2.4.3 Form sill with an opening for sound transmission. Offset sound passage to make opening lightproof and to maintain required lead equivalence at all points and in all directions.

2.5 **Lead Glass:** Leaded glass shall be clear X-ray protective quality glass in single or multiple thicknesses. Leaded glass shall have lead equivalence required for the shield wall, door, or partition in which the leaded glass is installed.

2.6 **Modular Shielding Partitions:** Partial-height modular partitions assembled from factory-finished standard components consisting of lead-lined enameled steel framing members, lead-lined opaque panels, lead glazing plastic vision panels, and hardware necessary for assembly and for securing to other construction. Fabricate opaque panels from honeycomb-core metal panels with polyurethane paint finish.

2.7 **Film Transfer Cabinets:** Cabinets shall be factory-fabricated, double-wall construction, of **0.0428-inch-thick**, cold-rolled, stretcher-leveled, commercial-quality steel sheet free of scale, buckle, pits, and other defects.

2.8 **Informational Signs:** Fabricate signs by engraving lettering in high-pressure-laminate engraving stock with contrasting face and core. Machine engrave copy using high-speed cutters mechanically positioned by master templates for accurately formed letters, numbers, and symbols.

3.0 EXECUTION:

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3.1 Examination: Examine substrates in areas to receive radiation protection, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of radiation protection. Do not proceed with installation until unsatisfactory conditions have been corrected. Delete below if lead sheet is not installed on concrete floors. Do not proceed until concrete surfaces are clean, dry, and free of depressions and sharp projections that could damage or penetrate lead sheet.

3.2 Installation: Shall be in accordance with manufacturer's instructions.

3.2.1 Workmanship: Sheet lead shall be installed free of waves, lumps, and wrinkles and with a minimum of joints. Joints in sheet lead shall provide protection equivalent to the protection provided by the adjacent sheet lead. Joints shall be finished smooth and neat.

3.2.2 Protection: Lead shields shall be used to maintain continuity of protection where unshielded built-in items penetrate lead linings. Where outlet boxes, junction boxes, ducts, conduits, and similar items prevent the use of shields, lead sleeves or lead lining shall be used. Fasteners shall not disrupt the continuity of shielding.



Section 13112 Pre-Engineered Structures

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of pre-engineered metal buildings. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Metal buildings shall be the design and product of a recognized metal building manufacturer who is regularly engaged in the fabrication of pre-engineered structures.

2.1 Design Requirements:

2.1.1 Metal Buildings shall be designed for the dead load, designated live loads, and combinations of these loads as set forth in the MBMA Low Rise Building Systems Manual.

2.1.2 Framing and Structural Members: Structural steel members shall be designed in accordance with AISC publication, Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. Structural cold-formed steel framing members shall be designed in accordance with the AISI publication, Specification for the Design of Cold-Formed Steel Structural Members. Framed openings shall be designed to structurally replace the covering and framing displaced. Welding of steel shall be in accordance with AWS D1.1.

2.1.3 Exterior Covering: Maximum wind load deflection for wall sheets shall not exceed 1/180 of the span between supports; Maximum live load deflection for roof sheets shall not exceed 1/180 of the span between supports. Maximum deflections shall be based on sheets continuous across two or more supports with sheets unfastened and fully free to deflect.

2.2 Materials:

2.2.1 Hot-Rolled Structural Shapes: ASTM A 36 or A 529.

2.2.2 Tubing or Pipe: ASTM A 500, Grade B; ASTM A 501; or ASTM A 53.

2.2.3 Members Fabricated from Plate or Bar Stock: 42,000 psi minimum yield strength; ASTM A 529, A 570, or A 572.

2.2.4 Members Fabricated by Cold Forming: ASTM A 607, Grade 50.

2.2.5 Galvanized Steel Sheet: ASTM A 446 with G 90 coating.

2.3 Framing:

2.3.1 Rigid Frames shall be hot-rolled structural steel; factory-welded and shop-painted built-up "I" shape or open web rigid frame consisting of tapered or parallel flange beams and tapered columns. Furnish complete with attachment plates, bearing plates, and splice members. Frames shall be factory-drilled for bolted field assembly.

2.3.2 End Wall Columns shall be factory-welded, built-up "I" shape or cold-formed sections, fabricated of minimum 14-gauge material, and shop-painted.

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2.3.3 Wind Bracing shall be adjustable, threaded steel rods, 1/2 inch in diameter minimum; ASTM A 36 or A 572, Grade D.

2.3.4 Secondary Framing: Purlins, eave struts, end wall beams, and flange and sag bracing shall be minimum 16-gauge rolled formed sections and shop-painted. Base channel, sill angle, end wall structural members (except columns and beams), and purlin spacers shall be minimum 14-gauge cold-formed steel, galvanized.

2.3.5 Bolts shall be ASTM A 307 or A 325 as necessary for design loads and connection details. Bolts shall be shop-painted, except zinc- or cadmium-plated units shall be provided when in direct contact with panels.

2.4 Roofing and Siding: Provide flashings, closers, fillers, metal expansion joints, ridge covers, fascias, and other sheet metal accessories, factory-formed of same material and finish as roofing and siding.

2.4.1 Roof-Covering Assemblies shall have a wind uplift resistance rating of Class 90 in accordance with UL 580 and shall be listed in the UL Fire Resistance Directory for wind uplift resistance classification.

2.4.2 Steel Covering shall be zinc-coated steel conforming to ASTM A 446, Grade C, with G 90 coating complying with ASTM A 525. Steel sheets and panels shall be not less than 26-gauge.

2.4.3 Aluminized Steel Sheets shall be aluminum-coated, ASTM A 463, Drawing Quality with T1-40 coating. Metal thickness shall be not less than 26-gauge.

2.4.4 Aluminum Sheets shall be fabricated from aluminum alloy 3003 or 3004 Alclad with tempering as required to suit forming operations, ASTM B 209. Aluminum sheet thickness shall be not less than 0.032 inch.

2.4.5 Insulated Wall Panels shall be factory-assembled or field-assembled units, consisting of a central insulating core with metal interior and exterior face sheets securely fastened together with rivets, bolts, studs, "snap-on", or other approved methods of fastening, including interlocking with basic wall units.

2.5 Insulation:

2.5.1 Insulation shall be batts, blankets, and/or rigid material of required thickness and density to provide an overall tested heat transfer U-value as required. Insulation shall have a flame spread classification of 25 or less and a smoke developed rating not in excess of 50 when tested in accordance with ASTM E 84. Exposed insulation shall be faced with a vapor barrier of vinyl film, vinyl reinforced foil, or foil reinforced kraft.

2.5.2 Rigid or Semirigid Board Insulation shall conform to Fed. Spec. HH-I- 558, Form A, Class 1 or Class 2. Insulation shall have a white non-dusting and non-shedding painted finish.

2.5.3 Blanket Insulation shall conform to Fed. Spec. HH-I-558, Form B, Type I, Class 6. Insulation shall have a white sheet vinyl facing.

2.6 Accessories:

2.6.1 General: Provide coated steel accessories with coated steel roofing and siding; aluminum accessories with aluminum roofing and siding.

2.6.2 Gutters shall be formed in sections, complete with end pieces, outlet tubes, and special pieces that may be required. Finish to match roof fascia and rake.



2.6.3 Downspouts shall be formed in sections, complete with elbows and offsets, and shall be finished to match wall panels.

2.6.4 Circular Gravity Roof Ventilators shall be low-profile, ridge type ventilators, complete with base, bird screen, hood, flashing, closures, and fittings, finished to match roof panels.

2.6.5 Continuous Ridge Ventilators shall be factory-engineered and fabricated units of continuous heat valve type.

2.6.6 Wall Louvers: Provide units fabricated of not less than 18-gauge steel, finished to match wall panels. Provide bird screens of 1/2-inch x 1/2-inch galvanized steel mesh in rewirable frames on exterior face of louvers. Secure screens with clips to ensure ease of removal for cleaning and rewiring.

2.7 Hollow Metal Doors and Door Frames shall comply with Recommended Specifications for Standard Steel Doors and Frames (SDI-100), Steel Door Institute.

2.7.1 Materials: Hot-rolled, pickled, and oiled in compliance with ASTM A 569 and A 568; cold-rolled in compliance with ASTM A 366 and A 568.

2.7.2 Hollow Metal Units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling, and tapping, shall comply with ANSI A115. Locate finish hardware in compliance with BHMA Recommended Locations for Builder's Hardware.

2.7.3 Hardware: Provide hardware for each door, as follows:

2.7.3.1 Hinges: 1-1/2 pair, steel, template hinges, 4-1/2 inches x 4-1/2 inches.

2.7.3.2 Lockset: Cylindrical, key in knob.

2.7.3.3 Threshold: Extruded aluminum (exterior doors only).

2.7.3.4 Weatherstripping: Sponge neoprene or extruded vinyl, enclosed in an aluminum housing. Bottom weatherstripping shall be an aluminum extrusion with vinyl sweep strip.

2.8 Overhead Doors:

2.8.1 Overhead Doors shall be industrial type of standard manufacture, fabricated of 24-gauge galvanized steel minimum or 0.032-inch thick aluminum. Accessories shall include galvanized steel track, torsion-spring mechanism, ball-bearing roller, cylinder lock, and weatherstripping. Doors shall be manually operated, except that doors over 144 square feet in area shall be chain hoist or electric motor operated.

2.8.2 Overhead Coiling Doors:

2.8.2.1 General: Provide operating door assemblies as a complete unit produced by one manufacturer, including door curtain, guides, counterbalance, hood, hardware, operators, and installation accessories.

2.8.2.2 Door Curtain: Fabricate overhead coiling door curtain of interlocking slats designed to withstand required wind loading. Slats shall be structural quality, cold-rolled galvanized steel sheets complying with ASTM A 446, Grade A, with G90 zinc coating, complying with ASTM A 525, and phosphate treated before fabrication, or aluminum slats, 5052 alloy, standard mill finish, not less than 0.04 inch thick.

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2.9 Windows: Windows shall be of steel in accordance with the Steel Window Institute, The Specifier's Guide to Steel Windows, or of aluminum in accordance with the AAMA 101. Windows shall be complete with operating and locking hardware and glazing.

2.10 Fabrication: Shop fabricate to the required size and section, complete with base plates, bearing plates, and other plates as required for erection, welded in place, and with all required holes for anchoring or connections shop drilled or punched to template dimensions. Shop connections shall be power riveted, bolted, or welded. Field connections shall be bolted.

2.11 Shop Painting:

2.11.1 Clean Surfaces to be Primed of loose mill scale, rust, dirt, oil, grease, and other matter precluding paint bond. Follow procedures of SSPC-SP3 for power tool cleaning, SSPC-SP7 for brush-off blast cleaning, and SSPC-SP1 for solvent cleaning.

2.11.2 Prime Structural Steel primary and secondary framing members with rust-inhibitive primer having over 50 percent rust-inhibitive pigment, such as red-lead mixed pigment alkyd varnish (Fed. Spec. TT-P-86, Type II) or zinc chromate iron-oxide alkyd (SSPC PAINT 25).

2.11.3 Prime Galvanized Members, after phosphoric acid pretreatment, with zinc dust-zinc oxide primer (SSPC PAINT 5).

3.0 EXECUTION: Erection shall be in accordance with the approved erection instructions. Dissimilar materials that are not compatible when contacting each other shall be insulated from each other by means of gaskets or insulating compounds. Exposed surfaces shall be kept clean and free from sealant, metal cuttings, and other foreign materials.

3.1 Framing: Erect structural framing true to line, level, plumb, rigid, and secure. Provide rake or gable purlins with tight-fitting closure channels and fascias. Provide diagonal rod or angle bracing in both roof and sidewalls as required. At framed openings provide shapes of proper design and size to reinforce opening and to carry loads and vibrations imposed, including equipment furnished under mechanical or electrical work. Securely attach to building structural frame.

3.2 Roofing and Siding: Arrange and nest sidelap joints so that prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line. Protect factory finishes from damage. Provide weather seal under ridge cap; flash and seal roof panels at eave and rake with rubber, neoprene, or other closures to exclude weather.

3.2.1 Roof Sheets: Provide sealant tape at lapped joints of ribbed or fluted roof sheets and between roof sheeting and protruding equipment, vents, and accessories.

3.2.2 Wall Sheets: Apply elastomeric sealant continuous between metal base channel (sill angle) and concrete and elsewhere as necessary for waterproofing. Align bottoms of wall panels and fasten panels with blind rivets, bolts, or self-tapping screws.

3.3 Sheet Metal Accessories: Install gutters, downspouts, ventilators, louvers, and other sheet metal accessories, for positive anchorage to building and weathertight mounting.

3.4 Swing Doors and Frames: Install doors and frames straight, plumb, and level.



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3.5 Overhead Doors: Set doors and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports. Adjust moving hardware for proper operation.

3.6 Windows: Anchor windows securely in place. Seal entire perimeter of each unit with elastomeric sealant used for panels. Adjust and lubricate operating sash (vents) and hardware for proper operation. Clean surfaces of window units. Mount screens directly to frames with tapped screw clips.

3.7 Glazing: Clean channel surfaces and prime as recommended by sealant manufacturer. Cut glass to required size for measured opening; provide adequate edge clearance and glass bite all around. Install setting blocks at quarter points, set in a bed of sealant if heel-bead is used. Install spacers inside and out, all around, wherever liquid or plastic mastic compounds are used.

3.8 Thermal Insulation: Install blankets straight and true in one-piece lengths and both sets of tabs sealed to provide a complete vapor barrier.

3.9 Field Painting: Apply finish coating to factory-primed items.



SECTION 13152 SWIMMING POOL ACCESSORIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of swimming pool equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Diving Stands shall be fabricated of 1-1/2 inch Schedule 40 stainless steel pipe complying with ASTM A 53 or electric-resistance-welded pipe complying with ASTM A 135, with a minimum yield strength of **30,000 lbf/sq. in.**; hot-dip galvanized internally and externally. Their use shall be directed by facility dimensional requirements and shall comply with APHA, USS, NCAA, AAU, and FINA.

2.2 Diving Boards shall be fabricated of all aluminum complying with ASTM B 179 and finish indicated and to comply with performance requirements for structural aluminum; mill finish or decorative baked-enamel powder-coat finish; or of laminated wood and fiberglass. All upper surfaces shall be non-skid, and all edges shall be rounded and sealed.

2.3 Ladders shall be fabricated from low carbon Type 304 stainless steel complying with ASTM A 240/A 240M or ASTM A 666; cold rolled and finished on exposed faces with No. 2B finish; and have raised non-skid treads. Quantities, locations, and clearances shall comply with National Spa and Pool Institute standards.

2.4 Lifeguard Chairs shall be fabricated from Type 304 stainless steel (framework and handrails) complying with ASTM A 240/A 240M or ASTM A 666; cold rolled and finished on exposed faces with No. 2B finish; and have raised non-skid treads and non-skid platforms. Units shall comply with Safety Requirements, published by the National Swimming Pool Institute, and OSHA standards.

2.5 Underwater Lights of not less than 0.5 watts per square foot of pool area shall be provided in accordance with Lighting and Wiring, published by the National Spa and Pool Institute, and Article No. 68D of the National Electrical Code.

2.6 Pool Covers shall be polyethylene, having a flame spread rating of "0" as per ASTM E 84. Materials shall be non-toxic, non-absorbent, non-permeable, chemical-resistant and have a upper service limit of 110 F. Storage reels shall be constructed of Type 304 stainless steel complying with ASTM A 240/A 240M or ASTM A 666; cold rolled and finished on exposed faces with No. 2B finish.

2.7 Slides shall consist of fiberglass bodies with integral continuous flowing water supply, Type 304 stainless steel frames complying with ASTM A 240/A 240M or ASTM A 666; cold rolled and finished on exposed faces with No. 2B finish; and raised non-skid ladder treads.

2.8 Hardware and Fasteners. Hardware shall be manufacturer's standard, commercial-quality, corrosion-resistant, hot-dip galvanized steel and iron, stainless steel, or aluminum; secure, vandal-resistant design. Fasteners shall be manufacturer's standard, corrosion-resistant, hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped; and theft resistant.

3.0 EXECUTION: (Section not used.)



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SECTION 13182 SLUDGE INCINERATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and maintenance of sewage treatment plant incinerators. Products shall match existing materials and/or as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Refractory Materials shall comply with ASTM C 27.

2.2 Sand for Fluidized Bed shall be high silica sand having an effective size of 0.20 mm. and a uniformity coefficient of 1.8.

2.3 Repair and Replacement Parts for Burners shall be compatible with the existing burners.

3.0 EXECUTION:

3.1 Cleaning, Lubrication, and Adjustments: Thoroughly clean fan, blower, motor, and damper of dirt, dust, and other foreign material. Parts shall be lubricated and adjusted for proper operation.

3.2 Burner Parts shall be cleaned and primary and secondary air openings shall be adjusted as required for good combustion and to meet the design requirements for excess air to the burner. Adjustments shall be made with the incinerator in normal operation.

3.3 Cleaning of Fuel and Atomizing Lines: Gas, oil, air, and steam lines connected to the burner shall be disconnected, cleaned, and reconnected.

3.4 Startup: After completion of maintenance and repairs, the incinerator shall be started up and operating adjustments shall be made by the Contractor as required to achieve the design flow rate and emission quality of the incinerator.



SECTION 13204 CONCRETE/STEEL, ABOVE GROUND STORAGE TANK

1.0 Description of Work: This specification covers the furnishing and installation of an above ground concrete, steel interior double wall storage tank.

2.0 Products:

2.1 Primary Tank: The primary tank shall be rectangular in shape and have continuous welds on all sides, inside as well as outside. The primary tank shall be a minimum of 0.125 inch thick carbon steel

2.2 Concrete Encasement: The concrete encasement shall be 6 inches thick with a minimum design strength of 3000 p.s.i. The concrete mix shall have air entrained, and water reducing admixtures, fibermesh reinforcement, and steel reinforcement. Concrete portion of the tank shall be continuous and visually verifiable monolithic pour.

2.3 Fire Resistance: The tank shall be designed and tested to provide 2 hour fire protection for the interior tank.

2.4 Thermal and Corrosion Protection: The tank shall include thermal insulation to protect against temperature extremes.

2.5 Secondary Containment with Leak Protection: The tank system shall include an impervious barrier of 30 mil high density polyethylene to contain leaks from the primary tank. All exposed steel shall be powder coated to resist corrosion.

2.6 Overflow/Spill Containment: The tank shall include a minimum 5-15 gallon powder coated external or internal containment surrounding the fill pipe. The overflow container shall include a normally closed valve to release spilled product to the main tank.

2.7 Overflow Protection: Overflow protection shall be provided by two methods.

2.8 Exterior Finish: The exterior shall have a coated concrete finish to resist weather, reflect sunlight and inhibit corrosion.

2.9 Venting: Tank system shall conform to fire codes and UL standards.

2.10 Support Legs: Tank shall have concrete support legs of monolithic construction.

3.0 EXECUTION

3.1 The tank system and all accessories shall be installed in strict accordance with the manufacturer's recommendations, and all applicable fire and environmental codes.

3.2 Tanks shall be installed on reinforced concrete base slab.

3.3 Tanks shall be marked FLAMMABLE, NO SMOKING and product identification.

3.4 Tank and concrete shall be shop fabricated and require no assembly at the site. Tank shall be supplied from a manufacturer that has a minimum of 5 years of producing similar tanks.

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SECTION 13205 SETTLING CHAMBER

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of water treatment plant settling chambers and weirs. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION:

3.1 Interruptions of Treatment: Not more than one settling chamber shall be taken out of service at a time.

3.2 Installation:

3.2.1 Painting: Exposed new surfaces and surfaces marred during the work shall be painted to match existing color.

3.2.2 Startup: Final adjustments and startup shall be made in such a way as to ensure that all equipment operates at design conditions and rated capacity.

3.2.3 Weir Adjustment: Adjust existing weirs that have a top edge elevation variation of more than 1/32 inch, and all new weirs, to be level throughout their length at the elevation specified.

3.2.4 Weir Repair: Grind metal weir plates smooth and even, if grinding does not exceed amount of available equipment.



Section 13221 Water Treatment Plant Filters

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of gravity and pressure filters for water treatment plants. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Concrete Repair Materials shall be epoxy type grout in compliance with ASTM C 881.

2.2 Steel Plate, Welding Rods, and Welding Electrodes shall be of a composition that complies with Section II of ASME Boiler and Pressure Vessel Code.

2.3 Sequencing Controls and Solenoid Valves shall comply with NEMA ICS and UL 508.

2.4 Filter Media shall comply with the requirements of AWWA B100 and shall be equivalent to the existing filter materials.

2.5 Replacement Weirs and Troughs may be steel, conforming to ASTM A 36, or glass fiber reinforced plastic, in compliance with ASTM D 3841.

3.0 EXECUTION:

3.1 Tank and Trough Repair: Welding repairs shall comply with Paragraph UF-37 of Section VIII of the ASME Boiler and Pressure Vessel Code or AWS D1.1.

3.2 Weirs: Adjust weirs to the elevation required. Weirs may not have a top edge elevation variation of more than 1/32 inch throughout their length. Eroded top edges of metal weir plates shall be ground smooth and even, if grinding does not exceed amount of available adjustment.

3.3 Filter Media: Filtering materials shall be replaced in accordance with AWWA B100.

3.4 Testing: Test leak repairs by hydrostatic pressure or by pneumatic pressure if the leak is in the tank air space. Test sequence controls, solenoid valves, and backwash equipment to ensure that they operate at design conditions.

3.5 Cleaning: Clean tank interior of all sediment and foreign matter after completion of repair and testing. Clean sequence controls and associated electrical contacts.

3.6 Painting: Exposed metal surfaces shall be painted.

3.7 Disinfection: Disinfect piping and filters in accordance with AWWA B100.

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SECTION 13222 PRESSURE FILTERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and maintenance of pressure filters for water treatment plants. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Steel Plate, Welding Rods, and Welding Electrodes shall be of a composition that complies with Section II of ASME Boiler and Pressure Vessel Code.

2.2 Relief Valves shall be set to relieve at 15 psi above the normal operating pressure of the tank.

3.0 EXECUTION:

3.1 General: Welding repairs shall comply with Paragraph UF-37 of Section VIII of the ASME Boiler and Pressure Vessel Code or AWS D1.1.

3.2 Repair of Pin Holes: Weld holes of diameter less than half the plate thickness in compliance with AWS D1.1.

3.3 Repair of Cracks: Patch cracks or holes larger than one half the thickness of the tank shell plate.

3.4 Testing: Test leak repairs by hydrostatic pressure or by pneumatic pressure if the leak is in the air space of the tank.

3.5 Cleaning: Clean tank interior of all sediment and foreign matter after completion of repair and testing.



Section 13227 Backwash Tanks

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance for water treatment plant backwash tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Bolts and Screws: Existing bolts and screws removed due to repair work shall be replaced with new bolts or screws complying with ASTM A 193, Grade B8 and nuts complying with ASTM A 194, Class 8F of the same type, size, and finish.

2.2 Finishes: Items replacing existing items that are galvanized, plated, painted, or otherwise finished shall be of like finish.

2.3 Steel Tank Repair Parts shall be as specified in ASTM A 36, A 131, A 283, or A 573, depending upon required thickness.

2.4 Steel Tank Coatings shall be as specified in AWWA D102.

2.5 Concrete Tank Repair Material shall be epoxy type grout in compliance with ASTM C881.

2.6 Concrete Tank Coatings shall be a taste-free and odor-free, coal-tar base coating.

3.0 EXECUTION:

3.1 Preparation: Temporary backwash tank and accessories shall be furnished and installed as required to provide uninterrupted service.

3.2 Installation:

3.2.1 Flame Cutting: No cutting by torch or flame shall be done without written authorization from the Contracting Officer.

3.2.2 Testing: Test tanks by filling with water and inspecting for leaks. Test piping and valves hydrostatically at one and one half times normal working pressure or 50 psig, whichever is greater.

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SECTION 13320 SEWAGE TREATMENT PLANT ELECTRICAL CONTROLS AND INSTRUMENTATION

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of sewage treatment plant instrumentation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **Applicable Data:** Flow diagrams, loop diagrams, and installation drawings of the existing instruments and sampling systems for which maintenance and repair is to be provided should be requested from the Contracting Officer.

2.2 **Instrumentation:** All instrumentation shall be in accordance with the manufacturer's instructions.

3.0 EXECUTION:

3.1 **Scheduling and Coordination:** Contractor shall determine that arrangements have been made to take the equipment out of service for the duration of the work.

3.2 **General:** Perform listed maintenance procedures and repairs on meter and sampling system in compliance with the manufacturer's recommendations.

3.3 **Calibration:** Calibrate meter over the meter's range and adjust to read correctly.



SECTION 13321 WATER TREATMENT PLANT ELECTRICAL CONTROLS AND INSTRUMENTATION

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of water treatment plant electrical controls and instrumentation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **General:** Items not specified but required for the proper installation or repair of a specified item of work shall be provided. Items shall be of proper type, size, design, and characteristics for the use intended. Parts shall be factory-made.

2.2 **Finishes:** Items replacing existing items that are galvanized, plated, painted, or otherwise finished shall be finished with like finish in compliance with the manufacturer's standard practice.

2.3 **Electrical Controls and Instrumentation Components** for replacement purposes shall be designed for same service as the existing.

3.0 EXECUTION:

3.1 **Coordination:** Contractor shall determine that requirements for removal of the equipment from service, the bypassing of control valves, and installing of temporary replacements have been coordinated with the Contracting Officer. Bypassing of control valves or putting a control instrument in the Remote-Hand-Control mode will be done by the plant operators.

3.2 **Power Supplies** that may be a hazard during the performance of the work shall be locked out.

3.3 **Testing:** Check the operation of each instrument after it is returned to service. Adjust each instrument to operate properly over the design range.



SECTION 13322 FLOW MEASUREMENT DEVICE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of current type, turbine type, compound type, and fire service type meters for the measurement of flow. Products shall match existing materials and/or shall be as directed by contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Current Type Meters in sizes ranging between 5/8 inch and 6 inches shall conform to AWWA C 700.

2.2 Turbine Type Meter For Customer Services in sizes ranging between 1-1/2 inches and 12 inches shall conform to AWWA C 701.

2.3 Compound Type Meters in sizes ranging between 2 inches and 10 inches shall conform to AWWA C 702.

2.4 Fire Service Type Meters in sizes ranging between 3 inches and 10 inches shall conform to AWWA C 703.

2.5 Current Type Meters, Propeller-Driven in sizes ranging between 2 inches and 36 inches shall conform to AWWA C 704.

2.6 Multi-Jet Type Meters in sizes ranging between 5/8 inch and 2 inches shall conform to AWWA C 708.

3.0 EXECUTION: Calibration shall result in the flow measurement device reading correctly over its normal operating range.



SECTION 13800 FLOOR SAFES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of floor safes. Products shall match existing materials and/or as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Floor safes shall be constructed of heavy plate steel complying with ASTM A 36 / A 36M. Safes shall be a minimum of 1" thickness for door and ½" thickness for walls. Doors shall be designed to fit full body size with solid steel hinge mechanism using steel pins and internal mounting bolts.

2.2 Accessory Features: Floor safes shall have lift out lid, UL listed key changeable combination lock with relocking capability, and cover plate for total concealment under a carpet. Drop slot in head is optional.

3.0 EXECUTION:

3.1 Installation: Floor safes can either be installed in concrete slab floors or installed in a concrete enclosure in a wood floor.

3.1.1 Concrete Slab Installation: The contractor shall diamond saw cut through the concrete slab and remove the resulting piece forming a hole of the manufacturer recommended size for floor safe placement (minimum 3" below safe position). The finish concrete mixture and top of floor safe shall be set level with finish floor.

3.1.2 Wood Floor Installation: The contractor shall build a concrete form of recommended dimensions. Concrete shall be wire reinforce. Wood form shall be striped prior to completion of installation. Concrete shall be permanently attached to adjacent floor joists. The floor safe and finished concrete shall be flush with the top of the floor.

3.1.3 Concrete Mixture: The cement mixture shall be minimum of 3500 psi at 28 days and comply with requirements of Division 3.

3.2 Safe Protection: The contractor shall seal the safe door with masking tape in such a way as to prevent concrete from seeping between the door and body. The contractor shall also ensure that no water or dirt enters the door or safe cavity.



SECTION 13955 VEHICLE BARRIERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of portable, semi-permanent, permanent, power-assisted or manually deployed vehicle barriers. Type, size and capacity shall be as indicated or shall match existing.

2.0 PRODUCTS:

2.1 Retractable Barriers: In the raised position, the total retractable barrier heights shall be no less than 28 inches above the roadway surface and the width indicated. In the lowered position, the retractable barrier shall extend no more than 5/8 inch above the roadway surface. Retractable barriers in the lowered position shall be capable of supporting a 32,000-pound axle load or a 16,000-pound wheel load. Design for this load shall be in accordance with AASHTO-01.

2.1.1 Powered Retractable Barrier shall be capable of 240 complete up/down cycles per hour. Barrier motion shall be instantly reversible and shall be capable of raising the barrier from the lowered position to the raised position within 8 seconds during normal use, and within 2 seconds during an emergency. Barrier shall be capable of being closed from the raised position to the lowered position in not more than 3 seconds. Portable power-assisted retractable barriers shall be equipped with on and off ramps for smooth transition between surfaces.

2.1.1.1 Failure Modes of Operation: The system shall be designed to prevent lowering of the barrier in the event of hydraulic, electrical, or mechanical failure. A manual pump shall be included for operation of hydraulic and/or mechanical barriers without power.

2.1.1.2 Electric Motors: Unless otherwise indicated, electric motors shall have totally enclosed enclosures.

2.1.1.3 System shall be designed to maintain the barriers in the raised position, without inspection, for periods of time of up to 1 week. Equip hydraulic systems with pressure relief valves to prevent overpressure.

2.1.1.4 Hydraulic Power Unit shall contain hydraulic fluid which maintains its viscosity between 80 to 4000 saybolt universal seconds (SUS) even at constant heaviest use rate, for an ambient temperature range of 20 degrees F to 150 degrees F. Buried hydraulic lines for the connection of the hydraulic power unit to the barrier shall be flexible and/or carbon steel pipe. Flexible and rigid hydraulic line working pressure shall exceed the maximum system relief pressure. PVC pipe and fittings for burial of hydraulic lines shall be in accordance with ASTM D 3034 Type PS 46 with minimum pipe stiffness of 46.

a. Flexible hydraulic lines shall be in accordance with SAE J517.

b. Seamless carbon steel pipe shall be in accordance with ASTM A 106.

2.1.1.5 Hydraulic Power Unit Enclosure: A NEMA Type 3R enclosure as specified in NEMA 250 shall be provided to enclose the hydraulic power unit. The enclosure shall be designed for easy removal of the hydraulic power unit and other accessories without complete removal of the enclosure.



2.1.2 Manual retractable barriers shall be capable of being raised and lowered by manual means such as levers or hydraulics requiring a maximum 60 pounds of force. The manual mechanism shall contain a locking pin which accepts a padlock for securing the barrier when it is in the "UP" position.

2.2 Retractable Bollards: Total bollard height in the raised position shall be no less than 30 inches above the roadway surface and shall have an outside diameter of no less than 8 inches. Bollard system shall consist of a minimum of three bollards spaced no more than 32 inches from centerline to centerline of bollards across a 10-foot roadway. Bollards in the lowered position shall be capable of supporting a 16,000-pound wheel load each. Design for this load shall be in accordance with AASHTO-01.

2.2.1 Powered retractable bollards shall be capable of 240 complete up/down cycles per hour. Bollards shall be capable of being raised or lowered within a 3 to 15-second range during normal use and within 2.5 seconds for emergency operations.

2.2.1.1 Failure Modes of Operation: The system shall be designed to prevent lowering of the barrier in the event of hydraulic, electrical, or mechanical failure. A manual pump shall be included for operation of hydraulic and/or mechanical barriers without power.

2.2.1.2 Electric motors shall have totally enclosed enclosures unless otherwise indicated.

2.2.1.3 System shall be designed to maintain the barriers in the raised position, without inspection, for period of time of up to 1 week. If a hydraulic system is used, it shall be equipped with pressure relief valves to prevent overpressure.

2.2.1.4 Hydraulic power unit shall contain hydraulic fluid which maintains its viscosity between 80 to 4000 saybolt universal seconds (SUS) even at constant heaviest use rate, for an ambient temperature range of 20 degrees F to 150 degrees F. For ambient temperatures below 20 degrees F, a hydraulic oil heater shall be provided so that the oil viscosity remains between 80 to 4000 SUS. Buried hydraulic lines for the connection of the hydraulic power unit to the barrier shall be flexible and/or carbon steel pipe. Flexible and rigid hydraulic line working pressure shall exceed the maximum system relief pressure. PVC pipe and fittings for burial of hydraulic lines shall be in accordance with ASTM D 3034 Type PS 46 with minimum pipe stiffness of 46.

a. Flexible hydraulic lines shall be in accordance with SAE J517.

b. Seamless carbon steel pipe shall be in accordance with ASTM A 106.

2.2.1.5 Hydraulic Power Unit Enclosure: A NEMA Type 3R enclosure as specified in NEMA 250 shall be provided to enclose the hydraulic power unit. The enclosure shall be designed for easy removal of the hydraulic power unit and other accessories without complete removal of the enclosure.

2.2.2 Manual retractable bollards shall be capable of being raised and lowered utilizing a recessed handle on the top surface of the bollard, with a maximum force of 60 pounds or a manual hydraulic pump requiring a max 60 pounds of force. A recessed panel at the base of each bollard, adjacent to the bollard in the "DOWN" position, shall contain a spring actuated latching mechanism that automatically secures the bollard in either the full "UP" or full "DOWN" position. The panel shall have an access cover with provisions for a padlock to secure the access cover.

2.3 Crash Gate shall consist of steel buttresses anchored into the ground and an above grade assembly consisting of a heavy steel structural or a combination of heavy steel and structural aluminum capable of being opened and closed. The height of the gate shall be a minimum of 84 inches from the road surface to the top of the gate frame. The length shall close and protect a minimum 120 inch clear opening. The

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maximum clear opening between the gate frame and end posts, between the bottom of the gate and finished grade, and between any grill work shall be 3 inches.

2.3.1 **Powered Crash Gate:** The gate movement shall be controlled by an electromechanical gate operator or a hydraulic gate operator consisting of an operator unit with required control circuits and operator station. The control and operating voltage shall be 24 vac (nominal).

2.3.2 **Failure Mode of Operation:** The system shall be designed to prevent opening of the crash gate in the event of electrical or mechanical failure. A disconnect system for the gate drive shall be provided to allow manual operation of the barrier in the event of a power outage.

2.3.3 **Manual crash gate** shall be capable of being hinged from either side. Hinge points of both buttresses shall each contain a locking pin with padlock acceptance for securing the crash gate in the closed position. The crash gate shall withstand a 10,000-pound vehicle at impact speed of 50 miles per hour, with maximum gate deflection or vehicle penetration of 10 feet.

2.4 **Crash Beam** shall be an above-grade assembly that, in the "DOWN" position, shall present a formidable obstacle to approaching vehicles. The height of the barrier shall be a minimum of 30 inches as measured from the roadway surface to the centerline of the crash beam. The crash beam shall be capable of blocking a minimum road width of 120 inches. The crash beam end shall contain a locking pin with padlock acceptance for securing the crash beam when it is in the "DOWN" position. Crash beam shall withstand a 10,000-pound vehicle at impact speed of 15 miles per hour, with a maximum beam deflection of 20 feet.

2.4.1 **Powered crash beam** shall be operated by means of a hydraulic power system. The crash beam shall be capable of being raised or lowered within an 8- to 15-second time range.

2.4.1.1 **Failure Mode of Operation:** A disconnect system for the crash beam shall be provided to allow manual operation of the barrier in the event of an electrical or mechanical failure.

2.4.2 **Manual crash beam** shall be manually raised and lowered with the aid of a counterbalanced end requiring approximately 60 pounds of force.

2.5 **Electrical Work:** Motors, manual or automatic motor control equipment except where installed in motor control centers, and protective or signal devices required for the operation specified herein, and wiring required for operation shall be provided in accordance with DIVISION 16 ELECTRICAL Section.

2.6 **Control Panel** and control circuit shall be provided to interface between all barrier control stations and the power unit. The control station is defined as the main control panel and the remote control panel as shown. The control circuit shall contain all relays, timers, and other devices or an industrial programmable controller programmed as necessary for the barrier operation. The control panel shall allow direct interface with auxiliary equipment such as card readers, remote switches, loop detectors, infrared sensors, and gate limit switches. The enclosure shall be as indicated on the drawings. All device interconnect lines shall be run to terminal strips.

2.6.1 **Voltage:** The control circuit shall operate from a 120 volt 60 Hz supply.

2.6.2 **Main control panel** shall be supplied to control barrier function. This panel shall have a key-lockable main switch with main power "ON" and panel "ON" lights. Buttons to raise and lower each barrier shall be provided. Barrier "UP" and "DOWN" indicator lights shall be included for each barrier. An emergency fast operate circuit (EFO) shall be operated from a push button larger than the normal controls. The EFO shall also be furnished with an EFO-active light and reset button. The main control



panel shall have a key lockable switch to arm or disable the remote control panel. An indicator light shall show if the remote control panel is enabled.

2.6.3 Remote control panel shall have a panel "ON" light that is lit when enabled by a key lockable switch on the main control panel. Buttons to raise and lower each barrier shall be provided. Barrier "UP" and "DOWN" indicator lights shall be included for each barrier. The EFO shall be operated from a push button larger than the normal controls. The EFO shall be interconnected with an EFO-active light. When the remote control panel EFO is pushed, operation of the barrier will not be possible from this panel until reset at the main control panel.

2.7 Miscellaneous Equipment:

2.7.1 Safety Equipment: Red/yellow 8-inch traffic lights shall be supplied for each entrance and exit to alert motorists of the barrier position. Traffic lights are not required for manual barriers. The yellow light shall indicate that the barrier is fully open. All other positions shall cause the light to show red. Brackets shall be supplied to allow the light to be mounted a minimum 4.5 feet above the roadway pavement on a 3.5-inch outside diameter metal post or mounted directly on the crash gate.

2.7.2 Heater: A waterproof barrier heater with a thermostat control and NEMA 4 junction box connection point shall be provided for de-icing and snow melting. The heater shall provide barrier operation to an ambient temperature of minus 40 degrees F. For retractable bollards, a 250-watt heater shall be provided for each bollard.

2.7.3 Signage shall read "Axle Weight Limit 9 Tons" and shall conform to FHWA-01 sign (R12.2).

2.7.4 Vertical Arm Gates (Traffic Arms) shall have an opening and closing time of less than or equal to 15 seconds. The gates shall be capable of 15 duty cycles per hour as a minimum. Gate shall operate the arm through 90 degrees. Gate operators shall be supplied with single phase 120 volt motors. Each gate shall be capable of being operated from a remote open-close push button station. Gates shall have a hand-crank mechanism which will allow manual operation during power failures. Each gate shall be supplied with a hand crank. Gate arms shall be constructed out of wood, steel, fiberglass, or aluminum, as specified by the manufacturer for the given lengths as shown on the drawings. Gate arms shall be covered with 16-inch wide reflectorized red and white sheeting. Each gate shall be furnished with a spare gate arm. Gate operator cabinets shall be constructed of galvanized steel and shall be painted manufacturers standard color as approved. Each gate operator shall be provided with an obstruction detector that will automatically reverse the gate motor when an obstruction is detected. The obstruction detector shall be any of the following three types: An electronic loop vehicle detector buried in the road, a photocell electric eye mounted on the gate operator, or a safety strip mounted on the lower edge of the arm. The detector system shall be automatically deactivated when the arm reaches the fully lowered position. Slab size and anchorage for gate operator shall be per manufacturer requirements.

2.8 Finish: Surfaces shall be painted in accordance with requirements of DIVISION 9 Section on painting except for materials supplied with manufacturers standard finish. The roadway plate shall have a nonskid surface. The barrier front shall have 6-inch wide reflective yellow stripes 4 inches apart. Bollards shall be painted reflective yellow with 3-inch wide black diagonal stripes. The barrier crash gate shall be painted white and the crash beam shall be painted reflective yellow with 3-inch wide black diagonal stripes.

2.9 Concrete shall conform to DIVISION 3 Concrete section.

2.10 Welding shall be in accordance with AWS D1.1.

2.11 Pavement: After placement of the vehicle barrier, the pavement sections shall be replaced to match the section and depth of the surrounding pavement. Pavement shall be warped to match the elevations of

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existing pavement. Positive surface drainage, away from the vehicle barrier, shall be provided by pavement slope.

3.0 EXECUTION

3.1 Installation shall be in accordance with manufacturers instructions.

3.2 Buried Hydraulic Lines shall be placed in polyvinyl chloride (PVC) sleeves. Positive drainage shall be provided from the hydraulic power unit to the barrier for drainage of condensation within the PVC sleeve.

3.3 All controls shall be terminated with compression ring-style terminals. Roundhead screws and lock washers shall be used to provide vibration-resistant connections. Connections between any printed circuit cards and the chassis shall be made with screw connections or other locking means to prevent shock or vibration separation of the card from its chassis.



DIVISION 14 CONVEYING SYSTEMS



SECTION 14210 PASSENGER ELEVATORS – ELECTRIC

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of passenger elevators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Elevators shall be of size, type, and operation directed by the Contracting Officer.

2.1.1 Elevators shall comply with the requirements of ANSI A17.1 "Safety Code for Elevators and Escalators" and ICC A117.1. Elevators with section 4.10 in the Americans with Disabilities Act (ADA) Accessibility guidelines (ADAAG), Section 407 in ICC A117.1, and FED-STD 795 Uniform Federal Accessibility Standards.

2.1.2 Calculations shall be provided to demonstrate compliance with ASME A17.1, Rule XXIV, and to demonstrate that the proposed elevator system meets requirements for seismic loading of the local zone in accordance with International Conference of Building Officials(ICBO) ICBO-01; certified copies of test reports may be submitted on lieu of calculations.

2.1.3 Elevator cab shall be manufacturer's standard cab and shall be of equivalent or greater value to a galvanized metal shell with enamel finish.

2.1.3.1 Elevator doors shall be galvanized metal with enamel finish.

2.1.3.2 Walls of elevator shall have raised plastic laminate panels.

2.1.3.3 Structural and non-exposed ferrous metal surfaces shall receive two coats of structural grade primer.

2.1.3.4 Elevator shall be complete with battery powered emergency lighting, emergency exit, handrails, exhaust fan, emergency communications systems, protective car pads and hooks.

2.1.3.5 Floor Finish shall be resilient tile flooring not less than 3/16 inch or vinyl tile not less than 1/8 inch thick. Tile shall be laid flush with the platform threshold.

2.1.3.6 Car and hoist-way doors for passenger elevators shall be operated simultaneously by an electric-power door operator. The doors shall operate smoothly in both directions and shall be cushioned to stop at the open and closed positions. Operators shall be high-speed heavy-duty type, which will provide an average door-opening speed of 2-1/2 fps. Reversal of doors when closing shall be accomplished by the "DOOR OPEN" button, car door safety edge, or interruption of the photoelectric light beams. In case of a power failure, the doors shall be capable of being opened manually.

2.1.3.7 Hoist-way frames and doors together shall be designed and fabricated as part of a Class B 1-1/2 Hour fire-rated door/frame assembly to meet requirements of NFPA 252 and shall bear the label of an approved testing laboratory.

2.2 Operating Equipment:



2.2.1 Hoisting Equipment : As directed by contracting officer, provide either variable-voltage, variable-frequency ac-type or variable-voltage dc-type hoisting machines. Provide geared or gear-less traction machines as directed. Provide solid-state power converters. Provide regenerative system with total harmonic distortion of regenerated power limited to 5 percent per IEEE 519. Provide means for absorbing regenerated power when elevator system is operating on standby power. Provide line filters or chokes to prevent electrical peaks or spikes from feeding back into building power system.

2.2.1 Sound and Vibration isolating foundation shall effectively prevent the transmission of machine vibration and sound to building structure. Location and deflection characteristics of isolation units shall produce a uniform and non-excessive loading on units under all operating conditions.

2.3 Finishes:

2.3.1 Galvanizing: ASTM A 526, G90 Coating Designation.

2.3.2 Enamel: Shop-applied baked enamel of color as selected by the Contracting Officer.

2.3.3 Plastic Laminate: Fed. Spec. L-P-508, color, texture, and pattern as selected by the Contracting Officer.

2.3.4 Stainless Steel shall be ASTM A 176 Type 302/304, austenitic, corrosion-resistant with grain of belting in direction of longest dimension. Surfaces shall be smooth and without waves and shall be in compliance with ASTM A 666 and ASTM A 568/A 568M.

2.4 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on the car shall be provided. Wiring shall be in accordance with the National Electrical Code and shall, except for traveling cables, be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs. Traveling cables shall be of the best grade for the service and shall be so installed to provide a proper size loop for the car. Traveling cables shall have a fire-resistant outer braid.

2.5 Passenger Car Operation Provide manufacturer's standard microprocessor operation system for each elevator or group of elevators as required to provide type of operation system indicated.

2.5.1 Single Elevator, Two-Stops: Provide "Automatic Operation" as defined in ASME A17.1

2.5.2 Single Elevator: Provide "Selective/Collective Automatic operation" as defined in ASME 17.1.

2.5.3 Multiple-Car Group: Provide "group automatic operation" as defined in ASME A17.1.

2.5.4 Auxiliary Operations: Provide standby power operation, independent service, loaded-car bypass, nuisance call cancel, earthquake emergency operation, and automatic dispatching of loaded car.

2.6 Controller: Elevator controller shall utilize a microprocessor-based logic system in compliance with ASME A17.1.

2.6.1 System shall provide comprehensive means to access the computer for elevator diagnostic purpose without need for any external devices and shall have permanent indicators to indicate important elevator statuses as an integral part of the controller.

2.6.2 Failure of any single magnetically-operated switch, contact or relay to release in the intended manner; or the failure of any static control device, speed measuring circuit, or speed pattern generating circuit to operate as intended; or the occurrence of a single accidental ground or short circuit shall not permit the car

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to start or run if any hoist-way door or gate interlock is unlocked or if any hoist-way door or car door or car-top contact is not in the made position.

2.6.3 While on car-top inspection or hoist-way access operation, failure of any single magnetically-operated switch, contactor or relay to release in the intended manner; or the failure of any static-control device to operate as intended, or the occurrence of a single accidental ground shall not permit the car to move even with the hoist-way door locks and car contacts in the closed or made position.

2.6.4 Dedicated permanent status indicators shall be provided on the controller to indicate when the safety string is open, when the door locks are open, when the elevator is operating at high speed, when the elevator is on independent service, when the elevator is on fireman's service, when the elevator has failed to successfully complete its intended movement. In addition, the means of displaying other special or error conditions that are detected by the microprocessor shall be provided.

3.0 EXECUTION:

3.1 Preparation: Prior to installation of elevator, ensure that shafts and openings for moving equipment are plumb, level, and in line. Check measurements of space for equipment and means of access for installation and operation.

3.2 Installation: Install machinery, guides, controls, car, equipment, and accessories in accordance with ASME A17.1, applicable codes, and manufacturer's recommendations. Installation shall provide a quiet, smoothly operating installation, free from side sway, oscillation, or vibration. Tamper resistant fasteners are to be use in public areas.

3.3 Inspection: At completion of installation, elevator shall be inspected in accordance with ANSI A17.2 "Inspectors' Manual for Electric Elevators". All deficiencies shall be corrected and re-tested.

3.4 Testing: shall be in accordance with requirements of ASME A17.1 and ASME A17.2.2 and as specified below. The Contractor shall conduct a complete test of the system. After the system has passed all tests, the Contractor shall notify the Contracting Officer in writing, 14 days prior to the time of performing the acceptance test, that the system is complete and is ready for final acceptance testing. The Contractor after receiving written approval from the Contracting Officer will conduct a complete acceptance test of the system. Final testing will be witnessed by a certified elevator inspector. The inspector shall be certified in accordance with ASME QEI-1. The Contractor shall provide an elevator certificate signed by the inspector for each elevator. The certificate shall be provided to the Contracting Officer within 30 day after the completion of all testing.

3.4.1 Testing Period Each elevator shall be tested with the specified rated-load in car continuously for a period of 35 percent of the duty time. During the test run the car shall be stopped at all floors in both directions of travel for a standing period of 10 seconds per floor. A manual test of the final limits (UP and DOWN over-travel) shall also be performed.

3.4.2 Speed Load Testing The actual speed of elevator car in both directions of travel shall be determined with the rated-load and with no-load in the elevator car. Actual measured speed of car with the rated-load in the UP direction shall be within 5 percent of rated speed. The maximum difference in actual measured speeds obtained under the various conditions outlined shall not exceed 10 percent of the total difference between the UP and DOWN speeds.

3.4.3 Car Leveling Testing Elevator car-leveling devices shall be tested for accuracy of landing at all floors with no-load, symmetrical load, and the rated-load in both directions of travel.



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3.4.4 Temperature Rise Testing Temperature rise of hydraulic pump motor, motor drive, exciter and booster shall be conducted during the full-load test run for minimum one hour. Under these conditions, temperature rise of equipment shall not exceed the requirements established in NEMA MG 1 Chapter 12. Test shall be started when all parts of equipment are within the temperature required by NEMA at time of starting tests.

3.4.5 Insulation-Resistance Testing Insulation-resistance testing shall be performed to ensure that the complete elevator wiring systems will be free from short circuits and grounds. Electrical conductors shall have an insulation-resistance of not less than 1 megohm between each conductor and ground, and not less than 1 megohm between each conductor and all other conductors. Prior to testing, provisions shall be made to prevent damage to electronic devices.



SECTION 14211 PASSENGER ELEVATORS - HYDRAULIC

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of passenger elevators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Elevators shall be of size, type, and operation directed by the Contracting Officer.

2.1.1 Elevators shall comply with the requirements of ANSI A17.1 "Safety Code for Elevators and Escalators" and ICC A117.1. Elevators with section 4.10 in the Americans with Disabilities Act (ADA) Accessibility guidelines (ADAAG), Section 407 in ICC A117.1, and FED-STD 795 Uniform Federal Accessibility Standards.

2.1.2 Calculations shall be provided to demonstrate compliance with ASME A17.1, Rule XXIV, and to demonstrate that the proposed elevator system meets requirements for seismic loading of the local zone in accordance with International Conference of Building Officials(ICBO) ICBO-01; certified copies of test reports may be submitted on lieu of calculations.

2.1.3 Elevator cab shall be manufacturer's standard cab and shall be of equivalent or greater value to a galvanized metal shell with enamel finish.

2.1.3.1 Elevator doors shall be galvanized metal with enamel finish.

2.1.3.2 Walls of elevator shall have raised plastic laminate panels.

2.1.3.3 Structural and non-exposed ferrous metal surfaces shall receive two coats of structural grade primer.

2.1.3.4 Elevator shall be complete with battery powered emergency lighting, emergency exit, handrails, exhaust fan, emergency communications systems, protective car pads and hooks.

2.1.3.5 Floor Finish shall be resilient tile flooring not less than 3/16 inch or vinyl tile not less than 1/8 inch thick. Tile shall be laid flush with the platform threshold.

2.1.3.6 Car and hoist-way doors for passenger elevators shall be operated simultaneously by an electric-power door operator. The doors shall operate smoothly in both directions and shall be cushioned to stop at the open and closed positions. Operators shall be high-speed heavy-duty type, which will provide an average door-opening speed of 2-1/2 fps. Reversal of doors when closing shall be accomplished by the "DOOR OPEN" button, car door safety edge, or interruption of the photoelectric light beams. In case of a power failure, the doors shall be capable of being opened manually.

2.1.3.7 Hoist-way frames and doors together shall be designed and fabricated as part of a Class B 1-1/2 Hour fire-rated door/frame assembly to meet requirements of NFPA 252 and shall bear the label of an approved testing laboratory.



2.2 Operating Equipment: Provide motors, pumps, controllers, hydraulic fluid reservoir, cylinder, casing, plunger, piping, guide rails, buffers, buttons, wiring, indicators, hardware, fittings, and all other equipment required to provide a fully operational elevator shall be provided.

2.2.1 Pump units: Provide positive-displacement type with a maximum of 10 percent variation between no load and full load and with minimum pulsations. Provide solid state starting, and variable-voltage variable-frequency motor control.

2.2.2 Hydraulic Silencers: Provide hydraulic silencer containing pulsation-absorbing material in a blowout-proof housing at pump unit.

2.2.3 Piping: Provide size, type, and weight piping as recommended by manufacturer of elevator. Provide flexible connections to power unit. Provide dielectric couplings at plunger/cylinder units. Encase underground piping in watertight PVC pipe.

2.3 Finishes:

2.3.1 Galvanizing: ASTM A 526, G90 Coating Designation.

2.3.2 Enamel: Shop-applied baked enamel of color as selected by the Contracting Officer.

2.3.3 Plastic Laminate: Fed. Spec. L-P-508, color, texture, and pattern as selected by the Contracting Officer.

2.3.4 Stainless Steel shall be ASTM A 176 Type 302/304, austenitic, corrosion-resistant with grain of belting in direction of longest dimension. Surfaces shall be smooth and without waves and shall be in compliance with ASTM A 666 and ASTM A 568/A 568M.

2.4 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on the car shall be provided. Wiring shall be in accordance with the National Electrical Code and shall, except for traveling cables, be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs. Traveling cables shall be of the best grade for the service and shall be so installed to provide a proper size loop for the car. Traveling cables shall have a fire-resistant outer braid.

2.5 Passenger Car Operation Provide manufacturer's standard microprocessor operation system for each elevator or group of elevators as required to provide type of operation system indicated.

2.5.1 Single Elevator, Two-Stops: Provide "Automatic Operation" as defined in ASME A17.1.

2.5.2 Single Elevator: Provide "Selective/Collective Automatic operation" as defined in ASME 17.1.

2.5.3 Multiple-Car Group: Provide "group automatic operation" as defined in ASME A17.1.

2.5.4 Auxiliary Operations: Provide standby power operation, independent service, loaded-car bypass, nuisance call cancel, earthquake emergency operation, and automatic dispatching of loaded car.

2.6 Electric controller shall be of the microprocessor based logic type with battery backup provided with reduced voltage starting. Components required for proper elevator performance shall be neatly wired and mounted in a completely enclosed in a cabinet with a latched door. Control cabinet shall be designed for mounting on power unit, wall or floor stand. Electric control apparatus shall be completely isolated from oil reservoir. A feature shall be incorporated in electrical control circuit which will cause elevator car to descent automatically to the lowest terminal landing, if the system runs low on oil during ascending of the

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car. The car and hoist-way doors shall automatically open when car reaches landing to allow passengers to exit. Parked car shall have doors in closed position and all control buttons shall be inoperative.

3.0 EXECUTION:

3.1 Preparation: Prior to installation of elevator, ensure that shafts and openings for moving equipment are plumb, level, and in line. Check measurements of space for equipment and means of access for installation and operation.

3.2 Installation: Install machinery, guides, controls, car, equipment, and accessories in accordance with ASME A17.1, applicable codes, and manufacturer's recommendations. Installation shall provide a quiet, smoothly operating installation, free from side sway, oscillation, or vibration. Tamper resistant fasteners are to be used in public areas.

3.3 Inspection: At completion of installation, elevator shall be inspected in accordance with ANSI A17.2 "Inspectors' Manual for Electric Elevators". All deficiencies shall be corrected and re-tested.

3.4 Testing: shall be in accordance with requirements of ASME A17.1 and ASME A17.2.2 and as specified below. The Contractor shall conduct a complete test of the system. After the system has passed all tests, the Contractor shall notify the Contracting Officer in writing, 14 days prior to the time of performing the acceptance test, that the system is complete and is ready for final acceptance testing. The Contractor after receiving written approval from the Contracting Officer will conduct a complete acceptance test of the system. Final testing will be witnessed by a certified elevator inspector. The inspector shall be certified in accordance with ASME QEI-1. The Contractor shall provide an elevator certificate signed by the inspector for each elevator. The certificate shall be provided to the Contracting Officer within 30 days after the completion of all testing.

3.4.1 Testing Period Each elevator shall be tested with the specified rated-load in car continuously for a period of 35 percent of the duty time. During the test run the car shall be stopped at all floors in both directions of travel for a standing period of 10 seconds per floor. A manual test of the final limits (UP and DOWN over-travel) shall also be performed.

3.4.2 Speed Load Testing The actual speed of elevator car in both directions of travel shall be determined with the rated-load and with no-load in the elevator car. Actual measured speed of car with the rated-load in the UP direction shall be within 5 percent of rated speed. The maximum difference in actual measured speeds obtained under the various conditions outlined shall not exceed 10 percent of the total difference between the UP and DOWN speeds.

3.4.3 Car Leveling Testing Elevator car-leveling devices shall be tested for accuracy of landing at all floors with no-load, symmetrical load, and the rated-load in both directions of travel.

3.4.4 Temperature Rise Testing Temperature rise of hydraulic pump motor, motor drive, exciter and booster shall be conducted during the full-load test run for minimum one hour. Under these conditions, temperature rise of equipment shall not exceed the requirements established in NEMA MG 1 Chapter 12. Test shall be started when all parts of equipment are within the temperature required by NEMA at time of starting tests.

3.4.5 Insulation-Resistance Testing Insulation-resistance testing shall be performed to ensure that the complete elevator wiring systems will be free from short circuits and grounds. Electrical conductors shall have an insulation-resistance of not less than 1 megohm between each conductor and ground, and not less than 1 megohm between each conductor and all other conductors. Prior to testing, provisions shall be made to prevent damage to electronic devices.



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SECTION 14212 FREIGHT ELEVATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of freight elevators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. This section is to be used in conjunction with sections 14210 and 14245.

2.0 PRODUCTS:

2.1 Elevators shall comply with the requirements of ANSI A17.1. When provisions for the handicapped are required, elevators shall comply with the requirements of ANSI A117.1. Elevator cab shall be galvanized metal shell with enamel finish. Elevator doors shall be galvanized metal with enamel finish. Structural and non-exposed ferrous metal surfaces shall receive two coats of structural grade primer.

2.2 Operating Equipment:

2.2.1 Motors, pumps, controllers, hydraulic fluid reservoir, cylinder, casing, plunger, piping, guide rails, buffers, buttons, wiring, indicators, hardware, fittings, and all other equipment required to provide a fully operational elevator shall be provided.

2.2.2 Car Frame and Platform: Provide special heavy-duty welded steel units designed to withstand impacts and wheel loadings indicated. Provide car with dimensions and openings sized as directed by Contracting Officer.

2.2.3 Freight Elevator Car: shall have plain steel panel sides to top of car, fabricated of not less than 12 gauge steel, or as designated by Contracting Officer. Panels shall be not more than 36 inches wide. Top of car shall be not less than 14 gauge steel panels with a removable panel for emergency exit. Provide car with a finish floor of raised-pattern steel floor plate welded or bolted to platform framing members. Car shall be equipped with bumper guards.

2.2.3 Load-Weighing Device: Provide eighty percent maximum load indicator. Prevent elevator movement when rated capacity exceeded.

2.2.4 Sills and Door Frames: Provide structural steel door frames and truckable sills for hoist-way entrances.

2.2.5 Entrance Doors: Upper panel of each freight elevator hoist-way door shall be equipped with a clear wire glass vision panel. Lower panel of each freight elevator door shall be provided with a 1/2 inch thick steel toe guard. Door interlock system shall prevent movement until doors are properly closed.

2.2.6 Elevator Controls and Signals: Operating and signal fixtures for freight elevators shall conform to the general requirements for passenger elevator operating and signal fixtures, with the exception that complying with FED-STD 795 and 36 CFR 1191 is not required.

2.3 Finishes:



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2.3.1 Galvanizing: ASTM A 526, G90 Coating Designation.

2.3.2 Enamel: Shop-applied baked enamel.

2.4 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on the car shall be provided. Wiring shall be in accordance with the National Electrical Code and shall, except for traveling cables, be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs. Traveling cables shall be of the best grade for the service and shall be so installed to provide a proper size loop for the car. Traveling cables shall have a fire-resistant outer braid.

3.0 EXECUTION:

3.1 Preparation: Prior to installation of elevator, ensure that shafts and openings for moving equipment are plumb, level, and in line. Check measurements of space for equipment and means of access for installation and operation.

3.2 Installation: Install machinery, guides, controls, car, equipment, and accessories in accordance with applicable codes and standards. Installation shall provide a quiet, smoothly operating installation, free from side sway, oscillation, or vibration.

3.3 Inspection: At completion of installation, elevator shall be inspected in accordance with ANSI A17.2. All deficiencies shall be corrected and re-tested.

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SECTION 14401 PERSONNEL LIFTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of personnel lifts. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Personnel Lifts: Personnel lifts shall be electrically operated, electronically controlled platform type. Capacity shall be as directed. Lift shall have a capacity safety factor of 5. Lift speed shall not exceed manufacturer's recommended rate of speed. Lift shall have double steps with non-skid surfaces spaced on belt. Drive belts and/or chains shall have safeties that automatically lock the carriage to the guide rails in the event of slack or lift belt/chain failure. Lifts shall conform to ANSI A90.1 "Man-lift Standard". Man-lifts shall be complete with necessary debris deflector, screens and guards for moving parts and floor openings.

2.2 Controls:

2.2.1 Three electrically operated safety stop devices mounded above top landing on "up" travel side. Two mounted on guide rails and one attached to head circles.

2.2.2 Three electrically operated safety stop devices mounted below bottom landing on "down" travel side. Two safety stop devices mounted on guide rails and one attached to man-lift legs.

2.2.3 Provide control rope system with wire in center of rope.

2.2.4 Red warning lights furnished and mounted immediately below top landing on "up" travel side, and below ceiling at bottom landing on "down" travel side.

2.3 Motor: Motors shall be sized for capacity of lifts. Motor shall be direct drive, gear type with totally enclosed electric brake. Power requirements shall be as directed.

2.4 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on lifts shall be provided. Wiring shall be in accordance with the National Electrical Code and shall be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs. Magnetic starter and electrical controls to be mounted in a pre-wired NEMA 12 (dust-tight) control panel. Fused disconnect switch within sight of motor shall be provided.

2.5 Ladder: Provide emergency ladder rungs mounted on one side of frame at twelve inches on center.

2.6 Hoist Belt: Provide either fourteen or sixteen inch wide belt of PVC solid woven polyester tested and certified for man-lift service. Basic warning messages and the direction of travel are to be stenciled onto the belt.

3.0 EXECUTION:



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3.1 Preparation: Prior to installation of lifts, ensure that shafts and openings for moving equipment are plumb, level, and in line. Check measurements of space for equipment and means of access for installation and operation.

3.2 Installation: Install machinery, guides, controls, lifts and equipment, and accessories in accordance with applicable codes and standards. Installation shall provide quiet, smooth operation free from side sway, oscillation, or vibration.

3.3 Inspection: At completion of installation, lifts shall be inspected in accordance with ANSI A17.2. All deficiencies shall be corrected and re-tested.



SECTION 14402 WHEEL CHAIR LIFTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of wheel chair lifts. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wheel Chair Lifts shall be of size, type, and configuration designated and shall be designed for the applicable exterior exposed to weather vertical lift configuration. Wheel chair lifts shall comply with the requirements of ANSI A90.1. In addition, lifts shall comply with Part XX and XXI of ASME A17.2, "Safety Code for Elevators and Escalators".

2.2 Operating Equipment: Motors, key-operated controllers, casings, guide rails, buffers, buttons, wiring, indicators, hardware, fittings, and all other equipment required to provide a fully operational chair lift shall be provided. A means of manual lowering shall be provided in case of a power failure. Rated capacity for lift shall be 550 pounds and 12 fpm.

2.3 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on chair lifts for an exterior application shall be provided. Wiring shall be in accordance with the National Electrical Code and shall, except for traveling cables, be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs. Traveling cables shall be of the best grade for the service and shall be so installed as to provide a proper size loop for the chair lift. Traveling cables shall have a fire resistant outer braid.

2.4 Platform: Provide 0.123 inch thick galvanized steel with black rubber flooring. Provide rectangular steel-tube frames with flush galvanized steel-sheet panels.

3.0 EXECUTION:

3.1 Preparation: Prior to installation of chair lifts, ensure that installation surfaces are true to lines and levels. Check measurements of space for equipment and means of access for installation and operation.

3.2 Installation: Install machinery, guides, controls, chair lifts, equipment, and accessories in accordance with applicable codes and standards. Installation shall provide a quiet, smooth operation, free from side sway, oscillation, or vibration.

3.3 Inspection: At completion of installation, chair lift shall be inspected in accordance with ANSI A17.2. All deficiencies shall be corrected and re-tested.



SECTION 14416 VEHICULAR LIFTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of vehicular lifts. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Vehicular Lifts: Lifts shall comply with ANSI B153.1 and ALI/ETL requirements. Lifts shall have automatic mechanical lift locks. Lift lock shall be automatically activated when lift is operated to full stroke to prevent accidental lowering. Provide feature to allow manual lowering in case of power loss.

2.2 Operating Equipment: Column Lift frames of capacity selected, motors, controllers, pumps, hydraulic fluid reservoir, push type cylinders, metered control valves, plunger, piping, buffers, wiring, indicators, hardware, fittings, and all other equipment required to provide a fully operational vehicle lift shall be provided.

2.3 Wiring: All wiring necessary to connect operating buttons, switches, signals, and all electrical equipment on the lift shall be provided. Wiring shall be in accordance with the National Electrical Code and shall be installed in conduit, electrical metallic tubing, or metal wire ways, except that flexible conduit may be used for short runs.

3.0 EXECUTION:

3.1 Preparation: Prior to installation of vehicular lifts, ensure that floors are level and will accept loading expected. Check measurements of space for equipment and clearances for operation.

3.2 Installation: Install machinery, controls, and lift and its equipment and accessories in accordance with manufacturer's instructions and applicable codes and standards, to provide a quiet, smoothly operating installation, free from side sway, oscillation, or vibration.



SECTION 14611 MATERIAL HANDLING HOISTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of material handling hoists. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Electric Chain Hoists: Hoist motors shall be H4 duty classification. Class F insulation shall be used in hoist motor for 30 minute operation. Load chain shall be grade 80 alloy, case hardened and zinc plated sized for the intended load. Hoists shall employ AC motor brakes employing single or multiple all-steel disks. Controls shall be hand held, low voltage electrical, with emergency shut off and enclosed in NEMA 3R rated weatherproof enclosure. Hoist shall include fail safe limit switches in the hoist enclosure. Hoist shall meet requirements of ANSI B30.16 standard. Load hook shall be heavy duty drop forged with safety latch. . Hoist shall have swivel top and bottom hooks.

2.2 Manual Chain Hoists: Load capacity of hoist shall be as specified. Load chain shall be grade 80 alloy, case hardened and zinc plated sized for the intended load. Load hook shall be heavy duty drop forged with safety latch. Hoist mechanism shall be double pawl ratchet system with Weston type brake using a non asbestos friction disk. Hoist shall have swivel top and bottom hooks. Hoist shall require between 50 and 80 pounds effort to move load.

2.3 Electric Wire Rope Hoists: : Hoist motors shall be H4 duty classification. Class F insulation shall be used in hoist motor for 30 minute operation. Lift range shall be between 20 and 150 feet. Lifting cable shall be pre-formed wire rope, of hoisting service construction, made of extra improved steel (XIP) with an independent wire rope center. Load hook shall be heavy duty drop forged with safety latch. . Hoist shall have swivel top and bottom hooks. Controls shall be hand held, low voltage electrical, with emergency shut off and enclosed in NEMA 3R rated weatherproof enclosure. Hoist shall include fail safe limit switches in the hoist enclosure. Hoist shall meet requirements of ANSI B30.16 standard.

3.0 EXECUTION: The Contractor shall complete the assembly of any equipment furnished partially assembled and place the items in position as directed. The hoists shall be assembled and securely bolted in position, hoisting chain or wire rope installed, and the hoist made ready for regular operation. The Contractor shall furnish all miscellaneous hardware items required to complete the installation of all equipment and components. Equipment shall be primed and finish painted with a suitable corrosion-resistant paint on all parts and components not made of corrosion-resistant materials or otherwise protected.



SECTION 14650 ASH HOISTS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ash hoists. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Winches and Sheaves:

2.1.1 Wire Rope Sheaves shall be iron or steel with bronze bushings, furnished either plain or as an assembly of frame, sheave, swivel hook, and axle as required.

2.1.2 Winches shall be of steel construction with bronze bearings on rotating parts. Winches shall have a capacity of not less than 500 pounds, with band action handbrake and drum width adequate for the quantity and diameter of wire rope to be used. Winches shall be marine type with gear cover and shall have corrosion-resistant parts and finish suitable for outdoor use.

2.1.2.1 Power Winches: NEMA 3 weather-protected, with two speeds (30 or 60 fpm) for lifting and a single speed for lowering, automatic upper-limit switch for hook travel, with push-button control.

2.1.2.2 Hand wench shall have spring-operated holding dogs, free-spooling feature, and adjustable handles.

2.1.3 Wire Rope: Wire rope shall be flexible, hoisting grade composed of approximately 7 strands or bundles of small diameter steel wire with a fiber or independent wire rope core.

2.2 Mast and Boom: Mast, boom, and miscellaneous fabricated components shall be provided as required to complete the unit assembly. Boom shall rotate. Fabricated parts shall be finished with a corrosion-resistant paint.

2.2.1 Mast shall telescope where required. Fully extended mast shall allow transport of ash container from bottom of pit to bed of truck without handling container twice.

2.2.2 Ash-Handling Pit shall have watertight door covering where required. Doors shall be mechanically linked to mast so that they automatically open and close with the raising and lowering of the mast.

3.0 EXECUTION: The Contractor shall complete the assembly of any equipment furnished partially assembled and place the items in position as directed. The ash hoist shall be assembled and securely bolted in position, hoisting ropes installed, and the hoist made ready for regular operation. The Contractor shall furnish all miscellaneous hardware items required to complete the installation of all equipment and components. Equipment shall be primed and finish painted with a suitable corrosion-resistant paint on all parts and components not made of corrosion-resistant materials or otherwise protected.

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SECTION 14660 CRANES AND HOISTS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of cranes and hoists. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **Crane:** Material Handling Industry Crane Manufacturers Association of America (MHI CMAA) 70 "electric overhead traveling cranes", MHI CMAA 74 "Top Running and Under Running, Single Girder Electric Overhead Traveling Cranes Utilizing Under Running Trolley Hoist", or ANSI MH27.1 for under hung cranes and monorail systems.

2.2 **Hoist:** Bridge drives shall be either the A-1 or A-4 drive arrangement as specified in MHI CMAA 70.

2.3 **Hoisting Ropes:** Hoisting ropes shall be regular lay, preformed, uncoated, improved or extra improved plow steel, 6 by 37 construction, with independent wire rope core conforming to FS RR-W-410, Type I, Class 3. The hoisting ropes shall be selected such that the rated capacity load plus the load block weight divided by the number of parts of rope shall not exceed 20 percent of the certified breaking strength of the rope. Hoisting ropes shall be secured to the hoist drum so that no less than three wraps of rope remain at each anchorage of the hoist drum at the extreme low position (limit switch stop).

2.4 **Hook Assembly:** shall be single barbed and shall be made of forged steel complying with ASTM A 668/A 668M. Hooks shall be fitted with safety latches.

2.5 **Foot-walks:** The location and construction of foot-walks shall be in accordance with ASME B30.2.

3.0 EXECUTION:

3.1 **Installation :** Major components of the crane shall be shop assembled as completely as possible. The erection procedures shall ensure that the crane is erected without initial stresses, forced or improvised fits, misalignments, nicks of high-strength structural steel components, stress-raising welds, and rough burrs. After the crane is erected, any damaged painted surfaces shall be cleaned and repainted. After erection is complete, the equipment shall be serviced. All necessary grease and oil, of approved quality and grade for the initial servicing and field test, shall be provided by the Contractor.

3.2 **Testing:** Unless otherwise indicated, the following tests shall be performed using a test load of 125 percent of rated load; a. Hoist Static Load Test, b. Dynamic Load Test, c. Hoist Load Brake, d. Hoist Loss of Power Test, e. Trolley Dynamic Load Test, and f. Dynamic Load Test.



DIVISION 15 MECHANICAL



Section 15060 Mechanical Piping

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of piping. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Piping shall comply with ANSI B31.1, where applicable. Piping in pressure systems shall comply with requirements of the ASME Boiler and Pressure Vessel Code, where applicable.

2.1 Steel Pipe:

2.1.1 Pipe: Carbon steel pipe shall comply with ASTM A 53 or A 106. Galvanized pipe shall comply with ASTM A 53. Stainless steel pipe shall comply with ASTM A 312.

2.1.2 Fittings: Malleable iron threaded fittings shall comply with ANSI B16.3. Forged steel threaded and socket weld fittings shall comply with ASTM A 181 and shall be fabricated in compliance with ANSI B16.11. Forged stainless steel threaded and socket weld fittings shall comply with ASTM A 182 and shall be fabricated in compliance with ANSI B16.11. Carbon steel butt welded fittings shall comply with ASTM A 234 and shall be fabricated in compliance with ANSI B16.9. Stainless steel butt welded fittings shall comply with ASTM A 403 and shall be fabricated in compliance with ANSI B16.9.

2.1.3 Flanges: Carbon steel flanges shall comply with ASTM A 181 and shall be fabricated in compliance with ANSI B16.5. Stainless steel flanges shall comply with ASTM A 182 and shall be fabricated in compliance with ANSI B16.5.

2.1.4 Bolting: Carbon steel bolting shall comply with ASTM A 307, Grade B, and shall be fabricated in compliance with ANSI B18.2.1 and B18.2.2. Stainless steel bolting shall comply with ASTM A 193, Grade B8, with hex nuts complying with ASTM A 194, Grade 8F, and shall be fabricated in compliance with ANSI B18.2.1 and B18.2.2.

2.2 Copper and Brass Pipe:

2.2.1 Pipe: Seamless copper pipe shall comply with ASTM B 42. Seamless red brass pipe shall comply with ASTM B 43. Copper pipe to be used with brazing or welding shall be oxygen free and shall comply with ASTM B 302 or B 88.

2.2.2 Fittings: Threaded fittings shall comply with ASTM B 249 and shall be fabricated in compliance with ANSI B16.15. Solder fittings shall comply with ASTM B 88 and shall be fabricated in compliance with ANSI B16.18. Butt welding fittings shall comply with ASTM B 302 or B 88 and shall be fabricated in compliance with ANSI B16.9.

2.2.3 Flanges shall comply with ASTM B 61 and shall be fabricated in compliance with ASME B16.24.

2.2.4 Bolting shall comply with ASTM B 36 and shall be fabricated in compliance with ANSI B18.2.1 and B18.2.2.

2.3 Cast and Ductile Iron Pipe:

2.3.1 Pipe: Bell and spigot pipe shall comply with ASTM A 74 and shall be in compliance with ANSI A112.5.1 and AWWA C106. Bell and spigot pipe is not as readily available as other pipe and shall only be



used to repair existing bell and spigot pipe. Push-on type pipe shall comply with ASTM A 377 and shall be in compliance with AWWA C151. Mechanical joint pipe shall comply with ASTM A 377, ANSI and AWWA C111 and C151. Flanged pipe shall comply with ASTM A 377, B16.1, and AWWA C115. Threaded pipe shall comply with ASTM A 377 and shall be threaded at both ends for screwed fittings.

2.3.2 Fittings: Bell and spigot fittings shall comply with ASTM A 74, ANSI A112.5.1, and AWWA C110. Bell and spigot pipe is not as readily available as other pipe and shall only be used to repair existing bell and spigot pipe. Push-on type fittings shall comply with ASTM A 126 or A 536 and AWWA C110. Mechanical joint fittings shall comply with ASTM A 126 or A 536 and AWWA C110 and C111. Flanged fittings shall comply with ASTM A 126 or A 536, ANSI B16.1, and AWWA C110. Threaded fittings shall comply with ASTM A 126 and ANSI B16.4.

2.3.3 Flanges shall comply with ASTM A 126 or A 536, AWWA C115, and ANSI B16.1.

2.3.4 Gaskets: Gaskets for cast-iron soil pipe shall comply with ASTM C 564. Gaskets for mechanical joint or push-on type pipe shall comply with AWWA C111.

2.3.5 Bolting: Alloy steel bolting shall comply with ASTM A 193, Grade B8, and A 194, Grade 8F. Carbon steel bolting shall comply with ASTM A 307, Grade B, and shall be fabricated in compliance with ANSI B18.2.1 and B18.2.2.

2.4 Polyvinyl Chloride Pipe:

2.4.1 Pipe: Pressure rated pipe shall comply with ASTM D 1785. Waste, vent, and drain pipe shall comply with ASTM D 2665. Sewer pipe shall comply with ASTM D 2729.

2.4.2 Fittings: Threaded fittings shall comply with ASTM D 2464. Socket solvent weld type fittings for pressure pipe shall comply with ASTM D 2466 or D 2467. Socket solvent weld type fittings for waste and drain pipe shall comply with ASTM D 2665. Socket solvent weld type fittings for sewer pipe shall comply with ASTM D 2729.

2.4.3 Flange Dimensions shall be in compliance with ASME B16.5.

2.4.4 Bolting shall be alloy steel bolts and nuts complying with ASTM A 193, Grade B8, and A 194, Grade 8F.

2.5 ABS Pipe:

2.5.1 Pipe: Waste and drain pipe shall comply with ASTM D 2661. Sewer pipe shall comply with ASTM D 2751. All other ABS pipe shall comply with ASTM D 1527.

2.5.2 Fittings: Threaded fittings shall be Schedule 80 ABS and shall be industry standard. Socket solvent weld fittings for waste and drain pipe shall comply with ASTM D 2661. Socket solvent weld fittings for sewer pipe shall comply with ASTM D 2751. Socket solvent weld fittings for all other pipe shall be ABS Schedule 40 complying with ASTM D 2468 or ABS Schedule 80.

2.6 Vitrified Clay Pipe:

2.6.1 Pipe: Regular vitrified clay pipe shall comply with ASTM C 700. Perforated vitrified clay pipe shall comply with ASTM C 498.

2.6.2 Fittings shall be regular vitrified clay complying with ASTM C 700.

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2.6.3 Compression Joint Sealing Element shall comply with ASTM C 425 and shall be of rubber, plastic, or metal.

2.7 Asbestos Cement Pipe shall not be repaired but shall be replaced with new piping that does not contain asbestos, as directed by the Contracting Officer.

2.8 Polyethylene Pipe:

2.8.1 Pipe: Polyethylene shall comply with ASTM D 2447. Pipe shall be polyethylene SDRPR and shall comply with ASTM D 3035.

2.8.2 Fittings: Butt fusion type fittings shall comply with ASTM D 3261. Socket type heat fusion fittings shall comply with ASTM D 2683. Insert type heat fusion fittings shall comply with ASTM D 2609.

2.9 Conduit Systems:

2.9.1 Carrier Pipe: Carbon steel pipe shall comply with ASTM A 106. Polyvinyl chloride pipe shall comply with ASTM D 1785. Copper pipe shall comply with ASTM B 42. Fiberglass reinforced plastic pipe shall meet commercial standards.

2.9.2 Insulation: For systems 250 degrees or less, polyurethane foam insulation shall comply with commercial standards. For systems over 250 degrees, calcium silicate insulation shall comply with ASTM C 533.

2.9.3 Outer Jacket: For systems 250 degrees or less, polyvinyl chloride outer jacket shall comply with ASTM D 1785 or fiberglass reinforced plastic outer jacket shall meet commercial standards. For Systems over 250 degrees, cast-iron outer jacket shall comply with ASTM A 377, or steel conduit outer jacket shall be epoxy-coated, spiral weld, 10 gauge minimum.

2.10 Gaskets shall comply with ASME B16.21 and/or the following:

2.10.1 Gaskets shall be rubber complying with ASTM C 564.

2.10.2 Gaskets for mechanical joint or push-on type cast-iron or ductile iron pipe shall be rubber complying with AWWA C111.

2.11 Solvent Cement for solvent welding of pipe shall comply with ASTM D 2564, except solvent cement for ABS pipe and fittings shall comply with ASTM D 2235.

2.12 Dielectric Unions and Flanges:

2.12.1 Dielectric unions and flanges shall comply with Fed. Spec. WW-U-531 and requirements of ANSI B16.39 and ANSI B16.24.

3.0 EXECUTION:

3.1 Flame Cutting: No cutting by torch shall be done without authorization from the Contracting Officer.

3.2 Restoration: All disturbed pavement, sodding, soil, and other objects shall be restored to match original condition. Pavement shall be restored with material to maintain the same load bearing capacity as the original.



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3.3 Welding: All welding shall be performed in compliance with ANSI B31.1 and/or ASME Boiler and Pressure Vessel Code Section IX, as applicable.

3.4 Solvent Cement Joints shall be made in compliance with ASTM D 2855.

3.5 Heat Fusion Joints in polyethylene pipe and fittings shall be made in compliance with ASTM D 2657.

3.6 Concrete Linings in cast and ductile iron pipe shall be prepared with cement mortar complying with AWWA C104. Pipe leak clamps shall be ductile iron, split sleeve type.

3.7 Protective Covering for Replacement Underground Steel Pipe shall be mechanically applied in a factory or field plant especially equipped for the purpose. Specials, valves, and fittings that cannot be coated and wrapped mechanically shall have the protective covering applied by hand. Joints shall be coated and wrapped by hand. The pipe covering shall consist of a coat of coal-tar primer, a coat of coal-tar enamel, a wrapper of coal-tar-saturated asbestos felt, and a wrapper of kraft paper or a coat of water-resistant whitewash, applied in the order named and complying with the requirements of AWWA C203 in all respects to materials, thicknesses, methods of application, tests, and handling, except that interior lining will not be required. Joints and fittings shall be coated and wrapped in compliance with AWWA C203.

3.8 Hydrostatically Test Pipe Systems where required by ANSI B31.1 or ASME Code.

3.9 Dielectric Unions or Flanges shall be provided for connections between ferrous and nonferrous metallic pipe or equipment.

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Section 15100 Valves

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of valves. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Valve pressure/temperature ratings shall equal or exceed the ratings of the valves being replaced. Pressure/temperature ratings shall be in accordance with ANSI B16.5. Valves shall comply with the ASME Boiler and Pressure Vessel Code where applicable.

2.1 Gate Valves shall comply with MSS SP-70 and MSS SP-80 as applicable.

2.2 Globe Valves shall comply with MSS-SP-85 and MSS SP-80 as applicable.

2.3 Check Valves shall comply with MSS SP-71 and MSS SP-80.

2.4 Needle Valves shall comply with MIL-V-24586 and/or with applicable MSS specifications.

2.5 Ball Valves shall comply with MSS SP-72.

2.6 Butterfly Valves shall comply with MSS SP-67 and/or AWWA C504.

2.7 Pressure Relief Valves shall comply with ANSI Z21.22 and ASME CSD-1.

2.8 Pressure Regulators shall comply with ASSE 1003 as applicable.

2.9 Flow Control Valves shall comply with MIL-V-23254.

2.10 Backflow Preventers shall comply with AWWA C506.

2.11 Vacuum Breakers shall comply with ASSE 1001 and MS-87005.

2.12 Solenoid Operated Valves: Coil shall be epoxy encapsulated, manufactured to UL 429, and rated for ac voltage.

2.13 Float Valves shall comply with Fed. Spec. A-A-246.

2.14 Stop and Waste Valves shall comply with MIL-V-22052.

2.15 Plugs and Cocks shall comply with MSS SP-78.

2.16 Diaphragm Valves shall comply with applicable MSS specifications.

3.0 EXECUTION:

3.1 Flame Cutting: No cutting by torch shall be done without authorization from the Contracting Officer. Where flame cutting is authorized, at least one person shall be standing by exclusively with a fire extinguisher within 10 feet of the work and within full view of the area. The fire extinguisher shall have been inspected and certified by a licensed service agency within the last 12 months.



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3.2 Welding: All welding shall be performed in compliance with ANSI B31.1 and/or ASME Boiler and Pressure Vessel Code Section IX, as applicable.

3.3 Restoration: All disturbed pavement, sodding, soil, and other objects shall be restored to match original condition. Pavement shall be restored with material to maintain the same load bearing capacity as the original.



Section 15120 Piping Accessories

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of piping accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Filters: Pressure-temperature rating and filter medium particle size retention rating of the replacement filter shall equal or exceed the ratings of the existing filter. Pressure drop at the required capacity shall not exceed that of the replaced filter. Filters shall be constructed in accordance with ASME Code where applicable.

2.2 Strainers shall comply with Fed. Spec. WW-S-2739.

2.2.1 Low Pressure Y-Type Strainers shall have Type 304 stainless steel screens. Bodies of threaded or flanged strainers shall be cast iron. Bodies of butt-weld end strainers shall be Schedule 40 cast carbon steel.

2.2.2 High Pressure Y-Type Strainers shall comply with ASME Code if applicable. Strainers shall have Type 304 stainless steel screens. Bodies of threaded or flanged strainers shall be cast iron. Bodies of butt-weld end strainers shall be Schedule 80 cast carbon steel.

2.3 Traps shall be in accordance with ASTM F 1139, and steam traps shall comply with ASME Code where applicable.

2.3.1 Thermostatic Traps shall be constructed of cast brass. Thermostatic element valve cone shall be stainless steel.

2.3.2 Float and Thermostatic Traps shall have body and cover constructed of cast iron or semi-steel. Thermostatic element shall have stainless steel valve cone and valve seat. Provide stainless steel or seamless copper float.

2.3.3 Inverted Bucket Traps shall have body and cover constructed of cast iron or semi-steel. Bucket shall be brass or stainless steel, with lever mechanism of heat-treated stainless steel.

2.3.4 Thermodynamic Traps shall have body and cover constructed of stainless steel. Disc shall be heat-treated stainless steel.

2.4 Expansion Joints shall comply with standards of the Expansion Joint Manufacturer's Association (EJMA). Replacement expansion joints shall equal or exceed the pressure-temperature ratings of the replaced expansion joint.

2.4.1 Expansion Compensators shall have 2 ply phosphor bronze bellows, brass shrouds, and end fittings for copper piping systems, or 2 ply stainless steel bellows, carbon steel shrouds, and end fittings for steel piping systems.

2.4.2 Rubber Expansion Joints shall be constructed of duck and butyl rubber with full-faced integral flanges, internally reinforced with steel retaining rings.



2.4.3 Slip Joints shall comply with ASME B31.1 and shall be of the type designed for repacking under pressure.

2.4.4 Flexible Ball Pipe Joints shall be designed for 360 degree rotation, with minimum of 30 degree angular flexing movement for sizes 1/4 inch to 6 inches, 15 degrees for sizes 8 inches and larger. Certify carbon steel joints for environmental shock testing in accordance with MIL-S-4456 or MIL-S-901C. Joints shall comply with Section II of ASME Boiler and Pressure Vessel Code and ANSI B31.1 Power Piping for materials and design of pressure-containing parts and bolting.

2.4.5 Expansion Joints for Grooved Piping shall be combination couplings and nipples constructed of cut grooved short pipe nipples and couplings, or slip-type expansion joints constructed of carbon steel pipe and couplings.

2.5 Pipe Supports: Pipe supports shall comply with MSS SP-58 and SP-69. Contact between dissimilar metals shall be prevented in supporting copper tubing. Those portions of pipe supports which contact the tubing shall be copper-plated, rubber- or vinyl-coated, or stainless steel. All pipe supports located in sewage wetwells shall be 18-8 stainless steel.

2.6 Valve Boxes shall be of cast iron, extension sleeve type; shall be not less than 5 inches in diameter; shall have a minimum thickness at any point of 3/16 inch; and shall be provided with cast-iron bases and covers. Covers shall have cast thereon an appropriate name designating the service for which the valve is used. All parts of valve boxes, bases, and covers shall be coated by dipping in bituminous varnish.

2.7 Flexible Hoses:

2.7.1 Flexible Hoses for Non-Ferrous Piping shall be bronze hose covered with bronze wire braid with copper tube ends or bronze flanged ends, braze-welded to hose.

2.7.2 Flexible Hose for Ferrous Piping shall be stainless steel hose covered with stainless steel wire braid with NPT steel nipples or 150 psi ANSI flanges, welded to hose.

2.7.3 Rubber Flexible Hoses shall be rubber and butyl construction with integral full-faced duck and butyl flanges, internally steel wire reinforced, and furnished complete with steel retaining rings.

3.0 EXECUTION:

3.1 Flame Cutting: No cutting by torch shall be done without authorization from the Contracting Officer. Where flame cutting is authorized, at least one person shall be standing by exclusively with a fire extinguisher within 10 feet of the work and within full view of the area. The fire extinguisher shall have been inspected and certified by a licensed service agency within the last 12 months.

3.2 Restoration: All disturbed pavement, sodding, soil, and other objects shall be restored to match original condition. Pavement shall be restored with material to maintain the same load bearing capacity as the original.

3.3 Welding: All welding shall be performed in compliance with ANSI B31.1 and with ASME Code Section IX where applicable.

3.4 Y-Type Strainers shall be located in supply line ahead of the following equipment if integral strainer is not included in equipment.

- a. Pumps.
- b. Steam traps serving steam main drips.
- c. Temperature control valves.

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- d. Pressure reducing valves.
- e. Temperature or pressure regulating valves.

3.5 Installation of Steam Traps: Install strainer ahead of trap if not integral with trap.

3.6 Pipe Support Installation: Concrete inserts or L-shaped anchor bolts shall be used to support piping from new cast-in-place concrete. Expansion anchors shall be used to fasten supports to existing concrete and masonry.

3.7 Valve Boxes shall be set plumb. Each valve box shall be placed directly over the valve it serves, with the top of the box brought flush with the finished grade. After being placed in proper position, earth shall be filled in around each valve box and thoroughly tamped on each side of the box.

3.8 Flexible Hoses shall be installed on equipment side of shutoff valves, horizontally and parallel to equipment shafts wherever possible.



SECTION 15160 PUMPS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of pumps. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Worn or Damaged Pump Parts shall be replaced rather than repaired.

2.2 New Pump Impellers, when required, shall be statically balanced before installation.

2.3 Used Impellers shall be checked for balance before reinstallation. Out of balance impellers shall either be balanced or replaced.

2.4 Close Coupled Pumps, when replaced, shall be replaced complete with motor.

3.0 EXECUTION:

3.1 Before Any Work is started, the pump driver shall be locked out and tagged to prevent any driving power to the pump. The pump suction and discharge piping shall be valved off, locked, and tagged, or pipe line blanks shall be installed.

3.2 Before Any Work is performed on pumps in acid or other toxic material service, the pump must be vented and drained (flushed, if possible). Acid-proof personal protection shall be worn until pump and parts have been cleaned and neutralized.

3.3 Gaskets shall be replaced whenever a gasketed joint has been disturbed.

3.4 Flexible Coupling Alignment shall be required if either the pump or motor mounting has been disturbed and shall be to the tolerances specified by the flexible coupling manufacturer.

3.5 Removal and Installation of impellers shall be accomplished using pullers, jacks, crane, or hoist. Impact tools are strictly prohibited.

3.6 Turbine Pumps removed from casings shall be lifted vertically to prevent damage to the pump or the pump casing.

3.7 New Impeller Rings, Gaskets, and Strainer shall be installed before reassembly of turbine pumps.

3.8 Relief Valve in discharge line for positive displacement pumps shall be set and tested at 110 percent of design discharge pressure or as recommended by pump manufacturer for service in which pump is used.



Section 15261 Insulation For Aboveground Pipe

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of insulation for aboveground pipe. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Insulation shall be in accordance with the following. Service Temperature, F Insulation Material
3,000 Maximum Fiber Blanket, ASTM C 892
1,600 Maximum Calcium silicate, ASTM C 533
1,500 Maximum Expanded perlite, ASTM C 610
1,200 Maximum Preformed mineral fiber, ASTM C 547
800 Maximum Cellular glass, ASTM C 552
225 Maximum Rigid, preformed cellular urethane, ASTM C 591
60 F and below Cellular glass, ASTM C 552 (cold piping) or mineral fiber, Fed. Spec. HH-I-558

2.2 Insulation Jacket Materials shall have fire hazard ratings that do not exceed 75 for flame spread and 150 for fuel contributed and smoke developed, except where otherwise required by the authority having jurisdiction. Test ratings shall be determined in compliance with ASTM E 84 and NFPA 255.

2.3 Accessory Materials, including insulating cements, adhesives, staples, coatings, tapes, bands, and other accessory materials shall be as recommended for the particular application by the manufacturer of the insulation or jacket.

3.0 EXECUTION: Vapor barrier shall be continuous throughout each piping run for cold piping (-30 F to 60 F).



SECTION 15262 INSULATION FOR UNDERGROUND PIPE

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of insulation for underground pipe. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Insulation for Conduit Systems shall be calcium silicate complying with ASTM C 533 or polyurethane foam for low temperature systems (250 F and below).

2.2 Insulation Jackets for Conduit Systems shall be cast iron complying with ASTM A 377 or epoxy-coated spiral weld steel conduit for high temperature systems (above 250 F); or shall be polyvinyl chloride complying with ASTM D 1785 or fiberglass reinforced plastic for low temperature systems (250 F and below).

3.0 EXECUTION:

3.1 Backfill on Pipe System shall be 12 inches minimum.

3.2 Ground Surface shall be resodded or otherwise restored to the condition existing prior to the work.



SECTION 15281 BOILER FIREBOX INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of boiler firebox insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Block or Board Insulation:

2.1.1 Mineral Fiber Rock, Slag, or Glass in accordance with ASTM C 612.

2.1.2 Fiber blanket, ASTM C 892.

2.1.3 Calcium Silicate in accordance with ASTM C 533.

2.1.4 Cellular Glass in accordance with ASTM C 552.

2.1.5 Cellular Polyurethane in accordance with ASTM C 591.

2.1.6 Expanded Perlite in accordance with ASTM C 610.

2.2 Blanket Insulation: Mineral fiber rock, slag, or glass in accordance with ASTM C 553 or ASTM C 592.

2.3 Loose Fill Insulation:

2.3.1 Mineral Fiber Rock, Slag, or Glass in accordance with ASTM C 764.

2.3.2 Vermiculite in accordance with ASTM C 516.

2.3.3 Perlite in accordance with ASTM C 549.

2.4 Insulating Cement:

2.4.1 Mineral Fiber Rock, Slag, or Glass in accordance with ASTM C 195 or ASTM C 449.

2.4.2 Exfoliated Vermiculite in accordance with ASTM C 196.

2.5 Castable Refractory in accordance with ASTM C 401.

2.6 Spray-Applied Fibrous Insulation in accordance with ASTM C 720 and ASTM C 762.

2.7 Refractory Supports attached to pressure parts of the boiler shall comply with the ASME Boiler and Pressure Vessel Code.

3.0 EXECUTION:



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3.1 Safety: The boiler shall be removed from service, cooled, drained, and purged prior to conducting internal inspection or repairs. No personnel shall enter the boiler until the atmosphere in the boiler has been checked and found to be free of toxic, explosive, or suffocating gases.

3.2 Closing up the Boiler: The repair shall not be covered by replaced or reinstalled materials until authorized.

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SECTION 15290 DUCTWORK INSULATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ductwork insulation. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Rigid Fiberglass Ductwork Insulation shall conform to ASTM C 612. It shall consist of rigid fibrous glass board with foil facing, vapor sealed and attached to ducts with mechanical fasteners. Density shall be 3 lb/ft³.

2.2. Flexible Fiberglass Ductwork Insulation shall conform to ASTM C553, TYPE I, CLASS B-4. It shall consist of 3/4 lb/ft³ density fibrous glass blanket with reinforced foil and kraft facing lapped and joints sealed vapor tight.

2.3 Ductwork Insulation shall have a flame spread rating not exceeding 75 and a smoke developed rating not exceeding 150 as determined by test procedures in ASTM E 84. Components such as adhesives, mastics, and cements must meet the same individual ratings as the minimum requirements.

2.4 Adhesives shall conform to ASTM C 916.

2.5 Vapor Barrier shall conform to ASTM C 1136 Type I for exposed ducts and Type I or Type II for concealed ducts.

3.0 EXECUTION: Insulation shall be installed so that finishes are smooth and all joints are tight and sealed.



SECTION 15301 FIRE PROTECTION SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fire protection systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fire Protection System Materials and Components shall be Underwriters' Laboratories (UL) listed and/or Factory Mutual System (FM) approved for their intended use in accordance with all applicable National Fire Protection Association (NFPA) National Fire Codes.

2.2 Test Reports shall be submitted for all tests required by referenced publications applicable to the particular materials and components furnished for use in the work.

3.0 EXECUTION:

3.1 The Design, Fabrication, Installation, and Testing of fire protection systems shall be in accordance with all applicable NFPA National Fire Codes and their respective appendices. These codes include but are not necessarily limited to the following:

NFPA 12	Carbon Dioxide Extinguishing Systems
NFPA 16A	Closed-Head Foam-Water Sprinkler Systems
NFPA 17	Dry Chemical Extinguishing Systems
NFPA 1961	Fire Hose
NFPA 1962	Fire Hose, Care, Maintenance and Use
NFPA 1963	Fire Hose Connections
NFPA 20	Fire Pumps, Centrifugal
NFPA 30	Flammable and Combustible Liquids Code
NFPA 11	Foam Extinguishing Systems
NFPA 11A	Foam Systems, Medium and High Expansion
NFPA 16	Foam-Water Sprinkler and Spray Systems
NFPA 12B	Halon 1211 Fire Extinguishing Systems
NFPA 12A	Halon 1301 Fire Extinguishing Systems
NFPA 24	Private Fire Service Mains

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NFPA 231C	Rack Storage of Materials
NFPA 13A	Sprinkler Systems, Care, Maintenance
NFPA 13	Sprinkler Systems, Installation
NFPA 14	Standpipe and Hose Systems
NFPA 26	Water Supplies, Valves Controlling
NFPA 22	Water Tanks for Private Fire Protection

3.2 Scheduling Interruptions and Coordination: At least 48 hours before commencing work on any specific system, the Contractor shall notify the Contracting Officer of all interruptions, if any, that must be made to the system and the estimated period of time the system will be out of service during each interruption. Interruptions shall be made only at the time or times approved by the Contracting Officer. Equipment and standby systems shall be provided for building protection during interruption to the existing systems.

3.3 Tests: All field tests required by applicable standards shall be performed in the presence of the Contracting Officer.



SECTION 15401 INTERIOR PLUMBING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of interior plumbing. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work. Contact the Fire Protection Engineering Branch for requirements of piping material.

2.0 PRODUCTS:

2.1 Drinking Water Dispensers:

2.1.1 Electric Water Coolers shall comply with ARI 1010 and shall use one of the halogenated hydrocarbons as refrigerant. Top surfaces of the dispenser in contact with water shall be stainless steel or porcelain enameled steel. Piping connections from the shutoff or stop valve and outlet valve arrangement shall be chrome-plated brass, copper tubing, or stainless steel.

2.1.2 Drinking Fountains shall comply with Fed. Spec. WW-P-541/6.

2.2 Hot Water Generators and Storage Tanks:

2.2.1 Heating Element for the hot water generator shall consist of U-bend coils, a tube sheet, and air element head. The coil shall be seamless tubing inserted into holes in the tube sheet and secured by expanding. The tube sheet shall be copper alloy or other nonferrous metal. Tubing for the heating element shall be light drawn copper tubing complying with ASTM B 75 or copper alloy tubing complying with ASTM B 111, copper alloy No. 706. Element shall be in accordance with 21 CFR 175.

2.2.1.1 Copper Tubing shall be designed for a working pressure of 150 psig steam and shall withstand an internal hydrostatic pressure of 225 psig for not less than 15 seconds without leaking or any evidence of damage.

2.2.1.2 Copper Alloy Tubing shall be designed for a working pressure of 400 psig with 400 F hot water and shall withstand an internal hydrostatic pressure of 600 psig for not less than 15 seconds without leaking or any evidence of damage.

2.2.1.3 The Head for the Heating Element shall be close grained cast iron or fabricated steel for steam service, or cast or fabricated steel for high temperature hot water service. The heads shall be partitioned to separate the steam supply and condensate return. The head shall be equipped with tappings or flanges for the supply, return, air relief, and vacuum breaker connections. The air-relief valve and vacuum breaker connection shall be ½ inch pipe size.

2.2.2 New Storage Tanks shall be constructed, tested, and marked in compliance with the ASME Boiler and Pressure Vessel Code, Section VIII. The tank shall be glass-lined steel. Tanks shall be cathodically protected if required by local conditions. Tanks shall be in accordance with Mil. Spec. MIL-T-12295. The thermal efficiency and standby heat loss shall comply with the requirements of ASHRAE 90A.

2.2.3 Storage Tank Repair shall comply with the ASME Boiler and Pressure Vessel Code, Section VIII.

2.2.4 Heaters/Storage Tanks shall be equipped with ASME rated accessories.

2.3 Pneumatic Water Supply Systems:

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2.3.1 New Pneumatic Tanks shall be designed for 125 psig working pressure and shall be constructed in compliance with ASME Boiler and Pressure Vessel Code, Section VIII. Tanks shall be equipped with manhole in head, water gauge glass, pressure gauges, water pressure relief valves, and tapped openings for all piping.

2.3.2 Compressor shall be belt-driven by a motor having a maximum speed of 1800 rpm. The motor shall have a manual across-the-line starter and thermal overload protection. Guards complying with OSHA requirements shall be provided for all exposed moving parts.

2.3.3 Control System: Pressure switches shall be of the adjustable type having an operating range of 30 to 90 psig. The switch shall be three position type.

2.4 Gas Fired Water Heaters:

2.4.1 Water Heater Storage Tank shall be steel with a copper or glass lining and shall comply with ANSI Z21.10.1. Equipment shall comply with the approval requirements of AGA Directory of Certified Appliances and Accessories. For elevations above 2,000 feet, the AGA rating shall be reduced at the rate of 4 percent for each 1,000 feet above sea level. Safety pilot valve shall be supplied to automatically shut off the main gas supply to the burner or burners in the event that the pilot flame is extinguished.

2.4.2 Flue Gas Piping shall be single-wall metal pipe constructed of not less than No. 24 B&S gauge sheet copper or No. 20 gauge galvanized sheet steel.

2.4.3 Relief Valves shall comply with ANSI Z21.22. Relief valves shall be ASME rated.

2.4.4 Thermostat shall be snap action type actuated by water temperature.

2.5 Oil Fired Water Heaters:

2.5.1 Water Heater Tank shall be glass-lined steel. Tanks of 120-gallon capacity, or less, shall be hydrostatically tested to 300 psig. Tanks shall have vertical flue passages or annular flue passages between the tank and the casing. Tanks shall be cathodically protected if required by local conditions.

2.5.2 Burner shall be mechanical pressure atomizing type.

2.5.3 Controls shall consist of a combustion safeguard (primary control) to shut down the burner in event of ignition failure or flame failure, a limit control to prevent overheating in case of thermostat failure, and a thermostat of the adjustable immersion type to control water temperature.

2.5.4 Relief Valve shall comply with ANSI Z21.22. Relief valves shall be ASME rated.

2.5.5 Draft Regulator shall be of the automatic, barometric type designed for installation in the chimney or flue connector at the outlet of the water heater. The draft regulator shall meet the requirements of UL 378.

2.5.6 Flue Gas Piping shall be single wall steel pipe, minimum 28 gauge. Finish shall be zinc coated or oxidized to form blue black color.

2.6 Electric Water Heaters:



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2.6.1 Water Heater Tanks shall be glass-lined steel complying with UL 174, with dual heating elements. Each element shall be 4.5 KW. The elements shall be wired so that only one element can operate at a time. Tanks shall be cathodically protected if required by local conditions.

2.6.2 Relief Valves shall comply with ANSI Z21.22. Relief valves shall be ASME rated.

2.6.3 Thermostats shall be provided in compliance with UL 174.

2.6.4 Wiring shall comply with NFPA 70.

2.6.5 Heating Elements shall be medium watt density commercial grade incoloy sheathed flanged mounted elements with prewired terminal leads, and element fusing per the National Electrical Code.

2.7 Lavatories:

2.7.1 Lavatories shall be first quality vitreous china or enameled cast iron.

2.7.2 Drains and Jam Nuts shall be cast wrought copper alloy. Strainer shall be copper alloy or corrosion-resisting steel.

2.7.3 Faucets shall be single, center set, combination, or single control mixing type, complying with Fed. Spec. WW-P-541/4.

2.7.4 Stop Valves shall be angle or straight type and constructed of copper alloy, chrome plated.

2.7.5 Traps shall be P-type.

2.7.6 Soap Dispensers shall be glass or metal type with a capacity of 12 fluid ounces for liquid soap.

2.8 Urinals:

2.8.1 Wall-Hung Urinals shall have integral trap and extended shield; shall have washout, blowout, or siphon-jet flushing action; and shall be constructed of first quality vitreous china.

2.8.2 Pedestal Type Urinals shall have integral trap, siphon-jet flushing action, and a bottom outlet for connection to a closet type floor flange. Urinal shall be constructed of first quality vitreous china.

2.8.3 Trough Type Urinals shall be wall-hung with an integral flushing rim and shall be constructed of first quality vitreous china.

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SECTION 15451 STEEL TANKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steel tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Tank Materials shall be as required for the service by AWWA D100 or D103 for water tanks, or by API standards for petroleum product tanks.

2.2 New Tanks shall comply with AWWA or API standards as applicable for the service. Storage tanks for flammable liquids shall also comply with UL and NFPA requirements.

2.3 Nozzle Flange Diameters and Drillings shall be in compliance with ANSI B16.5.

2.4 Butt Weld Nozzles shall be in compliance with ANSI B16.25.

3.0 EXECUTION:

3.1 Tank Repair and Installation Work shall comply with applicable requirements of AWWA D100 or D103, or with API standards.

3.2 Welding shall be performed in accordance with AWS D1.1. Pipe welding to nozzles shall be performed in accordance with ASME Boiler and Pressure Vessel Code, Section IX.



SECTION 15452 PLASTIC TANKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of plastic tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Tank Material shall be reinforced fiberglass polyester in compliance with AWWA D120 for water tanks, or ASTM C 582 for tanks in chemical service.

2.2 New Tanks shall be horizontal, cylindrical tanks and shall comply with AWWA D120 or ASTM D 3299 as applicable. Chemical resistance tests, when required, shall be performed at the fabrication shop in compliance with ASTM C 581.

2.3 Nozzle Flange Diameters and Drillings shall be in compliance with ANSI B16.5.

3.0 EXECUTION: Repair and installation work shall be performed in compliance with recommended procedures and practices of SPII and of PPI, where applicable.

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SECTION 15475 POOL EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of pool equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Electric Swimming Pool Heaters shall be UL listed and shall conform to the ASME Boiler and Pressure Vessel Code. The heating elements shall be constructed of copper and shall be pre-wired with the connection at the element terminal sealed against moisture. Controls shall include a differential thermostat and a high temperature limit manual reset switch.

2.2 Gas-Fired Swimming Pool Heaters shall conform to the ASME Code and shall be approved by the American Gas Association. Heat exchangers shall be two-or four-pass design with copper-finned tubes. The burner shall be constructed of stainless steel and shall be provided with all necessary valving to meet ASME Code requirements.

2.3 Diatomite Filtration System shall consist of a centrifugal circulating pump, plastic filter elements surrounded by diatomaceous earth coating, a dry chemical feeder for feeding diatomaceous earth, and a modulating level control valve for the filter inlet line.

2.4 Swimming Pool Chlorinators shall be the gaseous chlorine cylinder-mounted type. Materials for construction of chlorinators shall be in accordance with recommendations of the Chlorine Institute.

2.5 Swimming Pool Surge Tank System shall include a surge tank, a vertical pump, and an electronic float switch. The surge tank shall be in compliance with ASME Code requirements for unfired pressure vessels.

2.6 Pool Drains shall be constructed of cast iron.

3.0 EXECUTION:

3.1 Personnel shall not begin repairs on the electric swimming pool heater until power to the heater has been disconnected.

3.2 Chlorine Gas Storage and Use shall be in accordance with recommendations of the Chlorine Institute Inc., Chlorine Manual.



SECTION 15481 COMPRESSED AIR EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of compressed air equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 All New Compressed Air Equipment and Materials for Repair or Replacement shall comply with ANSI/ASME B19.3, and ASME Boiler and Pressure Vessel Code, Section VIII.

2.2 New Reciprocating Air Compressors shall be of the single or two-stage, heavy-duty, double-acting, water-cooled or air-cooled, "Y" or "L" cylinder type complete with flange-mounted drive motor. The piston, valve, and cylinder construction shall not require lubrication. Teflon piston rings and Teflon or carbon rider rings shall be used. Compressors shall operate at a speed not in excess of 1,800 rpm.

2.2.1 Bearings: Main crankshaft bearings shall be anti-friction roller or ball type. Connecting rod bearings shall be sleeve type.

2.2.2 Valves: Compressor cylinder valves shall be of the channel, feather, or plate type suitable for service without external lubrication.

2.2.3 Lubrication: Force-feed lubrication system shall lubricate the crankshaft, connecting rod, and crosshead bearings.

2.2.4 Rod Packing: Piston rod packing shall be Teflon or carbon non-lubricating type.

2.2.5 Intake Air Filter - Silencer shall be a pipe-supported dry type capable of removing 95 percent of all particles 10 microns and larger.

2.2.6 Intercooler and Aftercooler shall be a shell-and-tube or plate type.

2.2.7 Motor shall be squirrel-cage induction, drip-proof, NEMA Class B, with split-sleeve bearings.

2.3 New Centrifugal and Rotary Screw Compressors shall be of the multi-stage or two-stage type driven by an electric motor through speed-increaser gears.

2.3.1 Intake Air Filter-Silencer shall be a full-capacity dry type capable of removing 95 percent of all particles 10 microns and larger.

2.3.2 Blowoff Silencer shall be a full-capacity blowoff vent type.

2.3.3 Bearings: Centrifugal compressor radial bearings shall be of the pivoted shoe type. Axial bearings shall be Kingsbury-type thrust bearings capable of absorbing thrust in either direction. Rotary screw compressor radial bearings shall be anti-friction roller type. Ball thrust bearings shall be provided to carry the axial load.

2.3.4 Seals: Centrifugal compressors shall be labyrinth or carbon ring-type air and oil seals. Rotary screw compressors shall be stainless steel sealing rings.

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- 2.3.5 Intercoolers and Aftercoolers shall be water-cooled shell and tube type.
- 2.3.6 Vents and Drains: Vents shall be tapped and plugged. Drains shall be complete with drain valves.
- 2.3.7 Lubricating Oil System shall be a shaft-driven main oil pump, motor-driven auxiliary oil pump, dual oil coolers, oil reservoir, dual oil filters, pressure switches and gauges, check valves, valves, and interconnecting piping.
- 2.3.8 Check Valves shall be 150-pound class, carbon steel.
- 2.4 New Control Air Compressor and Dryer shall be air-cooled with a reciprocating compressor and a single receiver constructed in accordance with ASME Code requirements. Motor shall be NEMA Class B design with built-in overload protection. Unit shall include an air gauge, pop safety valve, external check valve, filter, pressure switch, and drain cock. Air dryer shall be refrigerated type designed for continuous operation with hermetically sealed compressor, heat exchanger, ambient air filter, and automatic drain trap. Oil and water filter shall have aluminum housing with pressure rating of 250 psig at 70 F and include manual drain valve and 10 replacement filters.
- 2.5 Aftercoolers shall be of the watercooled, shell-and-tube pipeline type with adequate surface area to limit the discharge to the temperature required. The unit shall include moisture separators, gauge glasses, automatic condensate traps, valves, drain piping, and thermal reliefs on the water side.
- 2.6 Receivers shall meet ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 requirements and shall include pressure gauge, relief valve, shutoff valve, automatic moisture trap, and drain valve. Receivers shall be designed for 200 psi.
- 2.7 All Rotating Parts and Equipment shall be true, dynamically balanced at the factory, and shall include vibration isolators.
- 2.8 Safety Guards shall meet OSHA requirements.
- 2.9 Pressure Regulators shall be designed for a maximum inlet pressure of 125 psi and a maximum temperature of 200 degrees F. Regulators shall be single-seated, pilot-operated with valve plug, bronze body and trim, and threaded connections. Regulator shall include a pressure gauge.
- 3.0 EXECUTION:
- 3.1 Repair and Replacement Work done on receiver tanks shall be in accordance with ASME Boiler and Pressure Vessel Code and the NBBI. Repair procedures shall provide structural integrity as required by NB-23.
- 3.2 Welding shall be performed in compliance with AWS D1.1 and ASME Boiler and Pressure Vessel Code, Section IX.
- 3.3 Repaired Pressure Parts and Replacement Pressure Parts shall be tested after completion of repair or installation in accordance with the ASME Code.



SECTION 15556 FIRE TUBE BOILERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of fire tube boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Replacement parts and materials shall comply with requirements of the ASME Boiler and Pressure Vessel Code for new construction.

3.0 EXECUTION:

3.1 No Personnel shall enter the boiler until the boiler has been removed from service, cooled, drained, and purged and the atmosphere in the boiler has been checked and found to be free of toxic or explosive gases.

3.2 Repair and Maintenance Work shall be performed in accordance with procedures developed by the Contractor that are in compliance with requirements of the ASME Boiler and Pressure Vessel Code and the NB-132 and have been approved by the Contracting Officer.

3.3 Waterside Repairs: Wash drum internals to remove loose scale and soft deposits prior to making repairs.

3.4 Fireside Repairs:

3.4.1 Remove Soot and Other Deposits from furnace tube, fire tubes, and tube sheets.

3.4.2 Cracks at the junction of the furnace tube and tube sheet shall be repaired by welding.

3.4.3 Boiler Shell and Tube Sheet Patches shall be designed and installed in compliance with the National Board Inspection Code Chapter VI. All patches shall comply with the requirements for new construction of ASME Boiler and Pressure Vessel Code, Section I or IV.

3.4.4 Damaged Fire Tubes shall be removed and replaced with new tubes, except for a single leaking fire tube, which may be repaired by plugging at tube sheet at both ends.

3.4.5 Corroded Surfaces may be built up by fusion welding in compliance with the NBBI National Board Inspection Code.

3.4.6 Seal Welds used for fluid tightness shall be applied in compliance with NB-132.

3.5 Closing the Boiler:

3.5.1 Manholes, Handholes, and Gaskets: Clean seating surfaces, replace old gaskets with new gaskets, and reinstall or close all manholes and handholes.

3.5.2 Front and Rear Door: Clean seating surface, replace gaskets, and close front and rear access doors.

3.5.3 The Repair shall not be covered by replaced or reinstalled materials until authorized.

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3.6 Inspection and Testing of completed boiler repairs shall be in compliance with the ASME Code.



SECTION 15557 WATER TUBE BOILERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of water tube boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Replacement parts and materials shall comply with requirements of the ASME Boiler and Pressure Vessel Code for new construction.

3.0 EXECUTION:

3.1 No Personnel shall enter the steam drum or lower drum until the boiler has been removed from service, cooled, drained, and purged and all steam and water valves, including drain and blowdown valves, have been closed, and locked or tagged. No personnel shall enter the boiler until the atmosphere in the boiler has been checked and found to be free of toxic or explosive gases.

3.2 Repair and Maintenance Work shall be performed in accordance with procedures developed by the Contractor that are in compliance with requirements of ASME Boiler and Pressure Vessel Code and the NB-132 and have been approved by the Contracting Officer.

3.5 Waterside (Internal) Repairs: Wash drum internals to remove loose scale and soft deposits. Turbine the water tubes. Perform chemical cleaning by either circulation or soaking.

3.6 Cracks in Drums shall be repaired in compliance with the NBBI National Board Inspection Code.

3.7 Tube Seat Leaks may be repaired by internal seal welding of the tubes in compliance with NB-132.

3.8 Fireside (External) Repairs:

3.8.1 Clean Deposits from fireside surfaces by washing with hot alkaline water, brushing, scraping, or air lancing. Surfaces shall be dried immediately after washing.

3.8.2 Corroded Surfaces may be built up by fusion welding in compliance with NB-132, Chapter VI.

3.8.3 Drum Shell Patches shall be designed and installed in compliance with NB-132.

3.8.4 Minor Cracks in tube shall be repaired by replacement of a tube section. Minimum length of replacement tube section shall be 12 inches. Use backing rings when sections are welded into existing tubes. Use the TIG (tungsten-inert-gas) process for the root pass.

3.8.5 For Major Tube Damage, replace entire tube. If only one or two tubes require replacement, the damaged tubes may be removed and the holes plugged if approved by the Contracting Officer.

3.8.6 Seal Welds used for fluid tightness shall be applied in compliance with NB-132.

3.9 Closing the Boiler:

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3.9.1 Manholes, Handholes, and Gaskets: Clean seating surfaces, replace old gaskets with new gaskets, and reinstall or close all manholes and handholes.

3.9.2 The Repair shall not be covered by replaced or reinstalled materials until authorized.

3.10 Inspection and Testing of completed boiler repairs shall be in compliance with the ASME Code.



SECTION 15558 HIGH TEMPERATURE WATER BOILERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of high temperature water boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Replacement parts and materials shall comply with requirements of the ASME Boiler and Pressure Vessel Code for new construction.

3.0 EXECUTION:

3.1 Personnel shall not enter the boiler until it has been removed from service, cooled, drained, and purged.

3.2 Repair and Maintenance Work shall be performed in compliance with requirements of the ASME Boiler and Pressure Vessel Code and the NBBI National Board Inspection Code, and approved by the Contracting Officer.

3.3 Tubes shall be replaced as specified in NB-23.

3.4 Tube Joints, Headers, and Drums shall be repaired as specified in NB-23.

3.5 Material and Equipment removed for access to the boiler or to make repairs shall be reinstalled following successful completion of performance tests and authorization of the Contracting Officer.

3.6 Repairs to Pressure Parts shall be inspected and tested as specified in NB-23. The Contractor shall submit the Inspection Certificate to the Contracting Officer.



SECTION 15559 CAST-IRON BOILERS AND FIREBOXES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of cast-iron boilers and fireboxes, and furnishing and installation of cast-iron boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Replacement parts and materials shall comply with the requirements of the ASME Boiler and Pressure Vessel Code for new construction.

2.1 Gas-Fired, Oil-Fired, and Combination Gas/Oil-Fired Boilers: Boilers shall be rated and tested in accordance with ANSI Z21.13. Boilers shall meet the requirements of the following safety codes and standards: UL 726, UL 795, and UL 296. Boilers shall be provided with combustion controls.

3.0 EXECUTION:

3.1 No Personnel shall enter the boiler until it has been removed from service, cooled, drained, and purged, and the atmosphere has been checked and found to be free of toxic or explosive gases.

3.2 Repair and Maintenance Work shall be performed in accordance with procedures developed by the Contractor, in compliance with requirements of the ASME Boiler and Pressure Vessel Code and NB-132, and approved by the Contracting Officer.

3.3 Clean Fireside Surfaces: Thoroughly clean flueway and firebox surfaces.

3.4 Clean Waterside Surfaces to remove sludge and sediment.

3.4.1 On Steam Boilers, open blowdown valve and flush water until clear while under steam pressure. On water boilers, open boiler drain cock to remove sludge and sediment that have settled to the bottom. Then refill boiler to correct water level for steam boilers or correct water pressure for water boilers.

3.4.2 If Boiler is Shut Down, remove plugs and open drain cock. Wash the inside of the boiler with water to remove sludge and sediment. Fill boiler and drain again. Fill boiler to correct level or pressure.

3.5 Replace Damaged Boiler Section: Clean seating surfaces and replace gaskets or sealant before installing boiler sections.

3.6 Repair Cracks by brazing in compliance with the ASME Boiler and Pressure Vessel Code, Section IV and Section IX.

3.7 Closing the Boiler:

3.7.1 Manholes, Handholes, and Gaskets: Clean seating surfaces, replace old gaskets with new gaskets, and reinstall or close all manholes and handholes.

3.7.2 Other Materials: The repair shall not be covered by replaced or reinstalled materials until authorized.

3.8 Inspection and Testing of completed boiler repairs shall be in compliance with the ASME Code.



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SECTION 15560 CLEANING OF BOILERS

1.0 DESCRIPTION OF WORK: This specification covers cleaning of boilers. Products and materials used shall be in accordance with the boiler manufacturer's recommendations and/or shall be as directed by the Contracting Officer. Cleaning procedures shall be developed by the Contractor and shall be in accordance with the boiler manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Equipment required for cleaning, such as acid feed tank and pump, alkaline feed tank and pump, mixer, neutralizer tank and pump, power brushes, high pressure sprays, and other equipment shall be supplied by the Contractor.

2.2 Chemical Cleaning Materials:

2.2.1 Boilout Chemicals shall be trisodium phosphate complying with ASTM D 538, caustic soda complying with ASTM D 456, and soda ash complying with ASTM D 458.

2.2.2 Acid Cleaning Chemicals shall be:

Hydrochloric Acid complying with Fed. Spec. 0-H-765

Ammonium Bifluoride, $N_2H_4F_2$

Hydroxyacetic Acid, $CH_2OHCOOH$, Technical Grade

Formic Acid, $HCOOH$, Technical Grade

Phosphoric Acid complying with Fed. Spec. 0-0-670

Sulfuric Acid complying with Fed. Spec. 0-S-809

Sulfamic Acid, HSO_3NH_2

2.2.3 Neutralizing-Passivating Chemicals shall be as follows:

Monosodium Phosphate, H_2NaO_4P

Di-sodium Phosphate, Na_2HPO_4

Ammonia, Anhydrous, complying with Fed. Spec. 0-A-445

Hydrazine, Anhydrous, H_2NNH_2

Sodium Sulfite complying with Mil. Spec. MIL-S-13943

Sodium Nitrate complying with Mil. Spec. MIL-S-322

2.2.4 Flushing Water shall be demineralized water with a conductivity end point of 50 micro-ohms.

2.2.5 Pressure Draining Gas shall be commercially pure, 99.5 percent nitrogen.

2.3 Mechanical Cleaning Materials and Equipment:

2.3.1 Brushes shall be of the type for use with power units.

2.3.2 Washwater shall be hot alkaline washwater for removing ash deposits.

3.0 EXECUTION:

3.1 Clean Boilers of all scale and deposits.



3.2 Inspection: After cleaning, the boiler shall be given a visual inspection for effectiveness of scale removal.

3.3 Welding and Burning: No welding or burning shall be allowed during cleaning operations.

3.4 Alkaline Boilout:

3.4.1 Boilout Chemicals shall be completely dissolved in water before being introduced into the boiler.

3.4.2 Boilout chemicals shall be trisodium phosphate and caustic soda, 1,500 to 2,500 ppm concentration or caustic soda and soda ash, 3,000 ppm concentration.

3.4.3 Boilout Pressure shall be operating pressure for boilers operating at 200 psig and less. For boilers operating at above 200 psig, the boilout pressure shall be 200 psig or one-half the operating pressure, whichever is higher. In no case shall boilout pressure exceed 600 psig.

3.4.4 Concentration of Chemicals and duration of boilout will be dependent upon the scale analysis. Boilout time may vary from 8 to 24 hours with boiler water solids purged by blowdown at approximately 4-hour intervals.

3.4.5 Flush Unit with demineralized water until the effluent is clear of visible solids.

3.5 Acid Cleaning, using either the circulating or soaking method, shall be done in the following sequence.

- a. Wash heating surfaces with an acid solvent containing a proper inhibitor.
- b. Flush unit with clean water.
- c. Neutralize and passivate the unit.
- d. Flush the unit with clean water.

3.6 Circulating Method:

3.6.1 Acid Application: Acid cleaning time shall vary from a minimum of 4 hours, depending on scale analysis. Time shall be determined by analyzing samples of return solvent for iron concentration and acid strength.

3.6.2 Flushing: After cleaning, flush unit with demineralized water until pH reaches 6.5.

3.6.3 Neutralization: After flushing, neutralize the unit with ammonia and hydrazine for 2 hours at 200 F.

3.6.4 Final Flush: Final flush with demineralized water until pH reaches 7.5.

3.7 Soaking Method:

3.7.1 Application: Acid cleaning time shall vary from 4 to 8 hours depending on scale analysis. For soft sludges, cleaning time shall be a minimum of 4 hours. Cleaning time shall be 6 hours for thin coatings of hard scale. For heavy deposits, cleaning time shall be a maximum of 8 hours. The time periods noted are actual retention time of the solvent in the unit, including the time of filling and draining. Unit shall be drained under nitrogen pressure.

3.7.2 Flushing: After required cleaning time, flush unit with demineralized water.

3.7.3 Neutralizing: After flushing, the unit shall be neutralized and passivated with a solution of soda ash and boiled out for a period of 4 to 6 hours. The boilout pressure shall be operating pressure for boilers

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operating at 200 psig and less. For boilers operating at above 200 psig, the boilout pressure shall be 200 psig or one-half the operating pressure, whichever is higher. In no case shall boilout pressure exceed 600 psig.

3.7.4 Final Flush: After boilout, the unit shall be drained and flushed with demineralized water containing sodium nitrate, until the pH reaches 7.5.

3.8 Effluent Neutralization: The solvent effluent drained from the unit shall be neutralized with caustic soda or soda ash to a pH of 6.8 to 8.5.



SECTION 15565 FIREBRICK FIREBOXES FOR BOILERS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of materials for repair and maintenance of fire brick fireboxes for boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Replacement Parts and Materials for pressure parts, or for attachment to pressure parts, shall comply with requirements of the ASME Boiler and Pressure Vessel Code for new construction.

2.2 The Following Refractory Materials shall comply with the requirements of ASTM C 27: fire brick, refractory tile, plastic refractory, castable refractory, and refractory mortar.

3.0 EXECUTION:

3.1 Repair and Maintenance Work shall be performed in accordance with procedures developed by the Contractor that are in compliance with requirements of the ASME Boiler and Pressure Vessel Code and have been approved by the Contracting Officer.

3.2 No Personnel shall enter the boiler until it has been removed from service, cooled, drained, and purged, and the atmosphere in the boiler has been checked with a Burrel or other suitable instrument and found to be free of toxic, explosive, or suffocating gases.

3.3 Fire Tube Boilers:

3.3.1 When Replacing Burner Throat Tile, maintain correct throat diameter and ensure that throat is centered in the furnace.

3.3.2 Repair Burner Throat and Furnace Liner Tile Cracks with high temperature bonding mortar.

3.3.3 Wash Coat Burner Throat and Furnace Liner Tile with high temperature bonding mortar diluted with water.

3.3.4 Patch Cracks, 1/8 inch and larger in width, with high temperature bonding mortar or high temperature plastic refractory.

3.3.5 Patch Gap between castable refractory and baffle tile with high temperature plastic refractory.

3.3.6 Patch Damaged Rear Door Refractory with castable refractory.

3.4 Watertube Boilers: Repair cracks with ceramic fiber. Apply wash coat to burner throat.

3.5 Closing the Boiler: Repairs shall not be covered by replaced or reinstalled materials until authorized.

3.6 Drying Out:

3.6.1 Air Dry: Allow refractory to air dry as long as possible.

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3.6.2 Fire Dry: To thoroughly dry refractory by firing, fire boiler intermittently at low rate.



SECTION 15566 FIREBRICK FOR INSULATION OF BOILER FIREBOXES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of firebrick for insulation of boiler fireboxes. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Replacement Parts and Materials for attachment to pressure parts of the boiler shall comply with requirements of the ASME Boiler and Pressure Vessel Code for new construction.

2.2 Firebrick, Plastic Refractory, Castable Refractory, and Refractory Mortar shall conform to the requirements of ASTM C 27.

3.0 EXECUTION:

3.1 No Personnel shall enter the boiler until it has been removed from service, cooled, drained, purged, and the atmosphere in the boiler has been checked with a Burrel or other suitable instrument and found to be free of toxic, explosive, or suffocating gases.

3.2 Repair and Maintenance Work shall be performed in accordance with procedures in compliance with requirements of the ASME Boiler and Pressure Vessel Code and NB-132, and approved by the Contracting Officer.

3.3 Closing the Boiler: Repairs shall not be covered by replaced or reinstalled materials until authorized.

3.4 Drying Out: Allow refractory to dry as long as possible.



SECTION 15571 OIL-FIRED AND GAS-FIRED BURNERS FOR BOILERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of oil-fired and gas-fired burners for boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Oil-Fired Burner Pipe, Tubing, Fittings, Flanges, Valves, and Gaskets shall comply with the requirements of ASME B31.1.

2.2 Gas-Fired Burner Pipe, Tubing, Fittings, Flanges, Valves, and Gaskets shall comply with the requirements of ANSI Z223.1.

2.3 Burner and Pilot System and Combustion and Safety Controls shall comply with the requirements of NFPA 85A, 85B, or 85D.

2.4 Electrical Devices: Electrical equipment, control relays, devices, wiring, and enclosures shall comply with the requirements of ANSI C1.

3.0 EXECUTION:

3.1 No Personnel shall enter the boiler until it has been removed from service, cooled, purged and the atmosphere in the boiler has been checked with a Burrel or other suitable instrument and found to be free of toxic, explosive, or suffocating gases.

3.2 Before Welding, Brazing, or Cutting, gas piping shall be purged and the atmosphere checked and found to be free of an explosive gas mixture.

3.3 Oil-Fired Burner Repairs: All oil-fired burners, equipment, and control repairs shall be accomplished in compliance with ANSI B31.1 and C1, NFPA 85A or 85D, and Mil. Spec MIL-B-18796. All welding of piping shall comply with the welding procedures and qualifications of ANSI B31.1.

3.4 Gas-Fired Burner Repairs: All gas-fired burners, equipment, and control repairs shall be accomplished in compliance with ANSI Z223.1 and C1, NFPA 85A or 85B, and Mil. Spec. MIL-B-18796. All welding of piping shall comply with the welding procedures and qualifications of ANSI B31.2.

3.5 Inspection and Testing:

3.5.1 Leak Test all piping.

3.5.2 Pressure Test all piping in compliance with ANSI B31.1 for oil-fired burners or ANSI B31.2 for gas-fired burners.



SECTION 15572 COAL-FIRING SYSTEMS FOR BOILERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of coal-firing systems for boilers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Coal-Firing System Equipment and Materials shall comply with the requirements of ANSI B31.1, ASME Boiler and Pressure Vessel Code Section II, and NFPA 85E.

2.2 Burner and Pilot System and Combustion and Safety Controls shall comply with the requirements of NFPA 85E.

2.3 Electrical Devices: Electrical equipment, control relays, devices, wiring, and enclosures shall comply with the requirements of ANSI C1 and NFPA 70.

3.0 EXECUTION:

3.1 No Personnel shall enter the boiler until it has been removed from service, cooled, purged, and the atmosphere in the boiler has been checked with a Burrel or other suitable instrument and found to be free of toxic, explosive, or suffocating gases.

3.2 Before Welding, Brazing, or Cutting, coal piping shall be purged and the atmosphere checked and found to be free of an explosive coal/air mixture.

3.3 Coal-Fired Burner Repairs: All coal-fired burners, equipment, and control repairs shall be accomplished in compliance with ANSI B31.1 and C1, ASME Boiler and Pressure Vessel Code, Section II, and NFPA 85E. All welding of piping shall comply with the welding procedures and qualifications of ANSI B31.1 and ASME Boiler and Pressure Vessel Code, Section IX.

3.5 Testing: Leak test all piping. Pressure test all piping in compliance with ANSI B31.1 and ASME Boiler and Pressure Vessel Code, Section II.



SECTION 15573 DRAFT CONTROL EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of draft control equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Structural Steel shall comply with ASTM A 36.

2.2 Steel Pipe shall comply with ASTM A 53.

2.3 Piping Components shall comply with ASTM A 105.

2.4 Flanges, Fittings, and Valves shall comply with ASTM A 181.

2.5 Seamless Copper Tube shall comply with ASTM B 75.

2.6 Insulation shall comply with ASTM C 547.

2.7 Thermal Insulation and Finishing Cement shall comply with ASTM C 449.

2.8 Welding and Brazing Materials shall be as specified in Section II of the ASME Boiler and Pressure Vessel Code.

3.0 EXECUTION:

3.1 Safety: Adequate natural or forced ventilation shall be provided during repair activities conducted in confined spaces. Forced or induced draft fans shall be rendered inoperable before performing internal repairs to the fan casing or adjacent ductwork.

3.2 Repairs shall be accomplished in compliance with NFPA 70.

3.3 Welding and Brazing shall be performed in accordance with Section IX of the ASME Boiler and Pressure Vessel Code.

3.4 Drive Train Components shall be repaired or replaced to transmit power free from vibration at the required torque.



SECTION 15576 BREECHING

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of breeching. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Metal Breeching:

2.1.1 Carbon Steel shall comply with ASTM A 568.

2.1.2 Galvanized Steel shall be carbon steel complying with ASTM A 568, galvanized in compliance with ASTM A 123.

2.1.3 Stainless Steel shall comply with ASTM A 167.

2.1.4 High Heat Insulating Refractory shall be an alumina-silica-base castable refractory complying with ASTM C 27.

2.1.5 Acid Resistant Liner shall be phenolic, rubber, and polyester resin liner.

2.1.6 Insulation: Calcium silicate block type insulation shall comply with ASTM C 533. Mineral fiber insulation shall be block type complying with ASTM C 612, Class 1.

2.1.7 Bolts and Nuts: Where breeching is connected to stack by means of a flange, bolts shall be high temperature alloy steel bolts complying with ASTM A 193, with hex nuts complying with ASTM A 194.

2.1.8 Paint for prime coats and finish coats for touchup or refinishing shall be of the high heat-resistant type.

2.2 Masonry:

2.2.1 Mortar and Grout for repair of cracks in reinforced concrete shall comply with ASTM C 476. Mortar for use in the repair or replacement of brick lining in high heat breeching shall be ground fire clay complying with ASTM C 27. Chemical-resistant mortar shall be resin mortar complying with ASTM C 395.

2.2.2 Brick for lining of high heat breeching requiring acid resistance shall be refractory brick complying with ASTM C 27. Brick for breeching requiring acid resistance shall be chemical-resistant brick complying with ASTM C 279, type H.

2.2.3 Inspection Doors shall be heavy-duty cast iron or steel, lined on interior with insulating, castable refractory complying with ASTM C 64.

2.2.4 Insulation: Calcium silicate block type insulation shall comply with ASTM C 533. Mineral fiber insulation shall be block type complying with ASTM C 612, Class 1.

2.3 Refractory Brick:

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2.3.1 Brick shall be high heat refractory type complying with ASTM C 27.

2.3.2 Mortar: Fire clay mortar shall be of high heat, ground type complying with ASTM C 27. Chemical-resistant mortar shall be the silica type complying with ASTM C 466.

2.3.3 Refractory shall be of the insulating, castable type complying with ASTM C 27. Chemical-resistant type castable refractory shall be in compliance with ASTM C 401.

2.3.4 Inspection Doors shall be heavy-duty cast iron or cast steel, lined on the interior with insulating castable refractory complying with ASTM C 64.

3.0 EXECUTION:

3.1 Flame Cutting: No cutting by torch shall be done without authorization from the Contracting Officer.

3.2 Welding: All welding shall be performed in compliance with AWS D1.1.

3.3 Installation of Breechings shall be in compliance with NFPA 211.



SECTION 15577 STACKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of stacks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Metal Stacks:

2.1.1 Carbon Steel shall comply with ASTM A 568.

2.1.2 Galvanized Steel shall be carbon steel complying with ASTM A 568, galvanized in compliance with ASTM A 123.

2.1.3 Stainless Steel shall comply with ASTM A 167.

2.1.4 Insulating Refractory shall be alumina-silica base castable refractory complying with ASTM C 27.

2.1.5 Acid-Resistant Liner shall be phenolic, rubber, and polyester resin liner.

2.1.6 Insulation: Calcium silicate block type insulation shall comply with ASTM C 533. Mineral fiber insulation shall be block type complying with ASTM C 612, Class 1.

2.1.7 Insulation Jacket: Canvas jacket shall be 8-ounce standard proprietary canvas jacket. Aluminum jacket shall be 0.016 inch thick, corrugated, embossed, or smooth, complying with ASTM B 209, temper H14, Type 3003 or 5010 with 50-pound polyethylene vapor barrier. Supports for aluminum jacket shall be stainless steel Z-clips and bands 0.016 inch thick by 3/4 inch wide.

2.1.8 Bolts and Nuts: Where breeching is connected to stack by means of a flange, bolts shall be high temperature alloy steel bolts complying with ASTM A 193, with hex nuts complying with ASTM A 194.

2.1.9 Steel Rivets shall comply with ASTM A 502.

2.1.10 Steel Structural Wire Rope shall be zinc-coated and shall comply with ASTM A 603.

2.1.11 Paint For Prime Coats and Finish Coats for touchup or refinishing shall be of the high-heat-resistant type.

2.2 Masonry Stacks:

2.2.1 Ceramic Glazed Clay Brick shall comply with ASTM C 126.

2.2.2 Chemical-Resistant Masonry Units shall comply with ASTM C 279.

2.2.3 Castable Refractory shall comply with ASTM C 401.

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2.2.4 Mortar for Fireclay Brick shall comply with ASTM C 27. Mortar for chemical-resistant applications shall comply with ASTM C 395. Mortar and grout for reinforced masonry shall comply with ASTM C 476.

2.3 Prefabricated Stacks shall consist of double-wall vent pipe and fittings. All components shall be UL-listed and shall comply with NFPA 211.

3.0 EXECUTION:

3.1 Installation or Repair of all stacks shall be in accordance with NFPA 211.

3.2 Flame Cutting: No cutting by torch shall be done without authorization from the Contracting Officer.

3.3 Welding: All welding shall be performed in compliance with AWS D1.2.



SECTION 15580 BOILER FEEDWATER EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of boiler feedwater equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Specialty Components and Parts shall be in accordance with applicable requirements of the ASME Boiler and Pressure Vessel Code.

2.2 Welding and Brazing Materials shall be as specified in Section II of the ASME Boiler and Pressure Vessel Code.

3.0 EXECUTION:

3.1 Repairs shall be accomplished with either the entire feedwater system or applicable portions isolated from service and drained.

3.2 All Isolation Valves shall be secured in the closed position, all drain valves secured in the open position, and pumps rendered inoperative before and during repairs to the deaerators, softeners, and chemical feeders.

3.3 Welding shall be performed in accordance with Section IX of the ASME Boiler and Pressure Vessel Code.

3.4 Electrical Work shall comply with the requirements of NFPA 70.

3.5 Drive Train Components shall be repaired or replaced to transmit power free from vibration at the required torque.

3.6 Repair Procedures for receiver vessels shall provide structural integrity as specified in NB-23.

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SECTION 15581 GAS METERS AND REGULATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gas meters and regulators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Meters: Meters shall conform to ANSI B109.2, Style B, without resettable counter. Meters shall be pipe or pedestal mounted.

2.2 Pressure Regulators: Pressure regulators shall have iron or steel bodies and shall be adjustable for changing the downstream pressure. The regulator shall be adjustable with automatic loading, and shall have automatic pressure relief. The pressure relief shall be diaphragm-operated, spring-loaded type with vent for relief.

2.3 Valves: Valves shall conform to API Spec. 6D, Class 150.

3.0 EXECUTION:

3.1 Installation of Meters shall conform to ANSI B31.8. Permanent gas meters shall be installed with provisions for isolation and removal for calibration and maintenance.

3.2 Installation of Pressure Regulators shall be installed with by-pass line and lubricated plug valves installed in the by-pass line and on each side of the regulator between the regulator and by-pass connections.

3.3 Installation of Strainer shall be upstream of meter.

3.4 Installation of Pressure Reducing Valve at Meter Station shall be provided as needed.



SECTION 15590 FUEL HANDLING SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fuel handling systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fuel Handling System Components shall comply with applicable requirements of API.

2.2 Fuel Unloading Hose shall be in compliance with applicable requirements of UL 180, 330, 536, and 569 and of ANSI/ASME B31.3.

2.3 Gasoline Dispensing Pumps shall be in compliance with applicable requirements of UL 79 and 87 and of MIL-P-10406.

2.4 Oil/Water Separators shall be of the coalescing type, with coalescing media as required for the application. Separators shall be repaired or constructed in compliance with Section VIII of the ASME Boiler and Pressure Vessel Code.

3.0 EXECUTION:

3.1 Repair and Replacement Work shall be performed in compliance with applicable requirements of NFPA 30, NFPA 70, and the ASME Code.

3.2 Welding shall be performed in accordance with ANSI B31.3 and ASME Boiler and Pressure Vessel Code, Section IX.

3.3 Flushing: Repaired or replaced systems shall be flushed with the same type of fuel intended for use in the system until the outflowing fuel is free of sediment and emulsion and does not appear cloudy or hazy.

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SECTION 15610 WARM AIR FURNACES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of warm air furnaces. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work

2.0 PRODUCTS:

2.1 New Furnace shall comply with the AGA Directory of Certified Appliances and Accessories, NFPA 70, and UL 296, 378, 499, 727, 795, and 900 as applicable.

2.2 Filters may be permanent, cleanable type or throw-away type and shall comply with requirements of UL 900. Face velocity of air at maximum flow rate shall not exceed 360 cubic feet per minute for standard velocity filters and 520 feet per minute for high velocity filters.

2.3 Flues shall be double-walled and constructed of galvanized steel complying with ASTM A 526.

2.4 Controls:

2.4.1 Thermostats shall be low voltage type designed to operate on control circuits not exceeding 30 volts.

2.4.2 Limit Control for Oil or Gas Furnaces shall be designed and installed to shut down the burner when the bonnet air temperature reaches 200 F. Differential shall be fixed at not less than 10 F and not greater than 25 F.

2.4.3 Blower Control shall prevent operation of blower after burner has fired until the discharge air at bonnet reaches a predetermined temperature. Fan "on" setting shall be adjustable within range of 90 F to 140 F. Differential setting may be fixed between 24 F and 36 F or adjustable between 20 F to 50 F. Blower control shall include manual switch.

2.5 Gas Furnaces:

2.5.1 Gas Burners shall be of corrosion-resistant steel and shall be designed, adjusted, rated, and certified to fire natural, manufactured, mixed, or propane gas. Burners rated 400,000 Btuh input or less shall be manually or electrically ignited, standing pilot type. Burners rated greater than 400,000 Btuh input shall be electrically ignited, proven pilot type.

2.5.2 Heat Exchangers shall be fabricated from steel complying with ASTM A 568.

2.5.3 Gas Valves shall be provided with a safety shutoff that will, in the event of flame failure, cause safety shutdown of the burner; an automatic pilot; and except for furnaces firing propane gas, an automatic gas pressure regulator.

2.5.4 Furnace Housings shall be constructed of not less than 22-gauge steel complying with ASTM A 424, with baked enamel coating.

2.6 Oil Furnaces:

2.6.1 Burners shall be of flange-mounted high pressure atomizing type. Burner ignition shall be by continuous, automatic, cadmium cell control. The burner shall incorporate an oil pump, burner motor, combustion air fan, and burner tube.

2.6.2 Heat Exchangers shall be fabricated from cold-rolled steel complying with ASTM A 568 with radiation shield and combustion chamber of stainless steel complying with ASTM A 167.

2.6.3 Furnace Housings shall be constructed of not less than 22-gauge steel complying with ASTM A 424 with baked enamel coating.

2.7 Electric Furnaces:

2.7.1 Heater Elements shall be helically coiled, nickel-chromium wire, individually sequenced with individual thermal limit controls and fusible links for each element. Entire design shall be UL 499 listed and shall comply with NFPA 70.

2.7.2 Furnace Housings shall be constructed of not less than 22-gauge steel complying with ASTM A 424 with baked enamel coating.

3.0 EXECUTION:

3.1 New Furnace shall be installed in accordance with UL 499, UL 727, or UL 795 as applicable.



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- 3.2 Welding shall be performed in compliance with AWS D1.1.
- 3.3 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.
- 3.4 Corroded Heat Exchangers shall be removed and replaced.
- 3.5 Flue: Replace corroded sections of flue in compliance with UL 378.
- 3.6 Controls: Replace defective controls in compliance with NFPA 70.

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SECTION 15621 GAS UNIT HEATERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of gas unit heaters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Unit Heater shall comply with AMCA 99 and 210, AGA Directory of Certified Appliances and Accessories; NFPA 70; and UL Electrical Construction Materials Directory and UL 795.

2.2 Heat Exchangers shall be fabricated from steel complying with ASTM A 569 to form a unitized, multi-section type heat exchanger and combustion chamber for each burner.

2.3 Burners shall be of a corrosion-resistant steel with unitized rows of burners to provide one burner per heat exchanger section and shall have crossover igniter to provide positive ignition of each burner row.

2.4 Housings shall be fabricated from sheet steel of a thickness to provide sufficient strength to ensure rigidity and shall include a flue connection. The housing shall be provided with means for suspension or floor mounting as required.

2.5 Fans shall be the propeller type, fabricated of aluminum or steel, dynamically balanced, and direct motor driven. Fan motors shall be totally enclosed type, and built-in thermal overload protection shall be provided for single-phase motors.

2.6 Controls:

2.6.1 Thermal Limit Control shall be provided to shut off gas supply in the event normal operating temperatures are exceeded.

2.6.2 Fan Delay Switch shall be provided for continuous fan operation after burner shutdown until heat exchanger temperature is reduced to prevent excessive heat build-up.

2.6.3 Gas Valve with Safety Shutoff and Manual Main Shutoff shall be provided with automatic pilot and shall automatically regulate gas pressure and, in the event of flame failure, shall cause safety shutdown of burner.

2.6.4 Thermostat shall be wall-mounted, heavy-duty type with enclosed contacts, with a 3-position selector switch to permit manual fan operation independent of temperature control. Control circuit voltage shall not exceed 30 volts as provided by a factory-installed control circuit transformer.

3.0 EXECUTION:

3.1 Welding shall be in compliance with AWS D1.1.

3.2 Blazing shall be in compliance with ASME Boiler and Pressure Vessel Code, Section IX.

3.3 Damage to Galvanized Coatings shall be repaired by applying galvanizing repair paint complying with ASTM D 520.



SECTION 15622 OIL UNIT HEATERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of oil unit heaters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Unit Heaters shall comply with AMCA 99 and 210, AGA Directory of Certified Appliances and Accessories; NFPA 70; UL Electrical Construction Materials Directory; and UL 296.

2.2 Heat Exchangers shall be of corrosion-resistant steel and shall include a combustion chamber (primary heating surface) and a heat exchanger (secondary heating surface).

2.3 Burners shall be the high pressure or low pressure atomizing type. The burner shall be completely automatic and shall incorporate an oil pump, burner motor, combustion air fan, burner tube, and automatic ignition.

2.4 Housings shall be fabricated from sheet steel of a thickness to provide sufficient strength to ensure rigidity. The housing shall be provided with means of suspension. Housing shall include a flue connection.

2.5 Fan shall be the propeller type fabricated of aluminum or steel.

2.6 Controls:

2.6.1 Thermal Limit Control shall be provided to shut off oil supply in the event normal operating temperatures are exceeded.

2.6.2 Fan Delay Switch shall be provided for continuous fan operation after burner shutdown until heater exchanger temperature is reduced to prevent excessive heat build-up.

2.6.3 Thermostat shall be unit- or wall-mounted and shall be heavy duty type with enclosed contacts, with a 3-position selector switch to permit manual fan operation independent of temperature control. Control circuit voltage shall not exceed 30 volts as provided by a factory-installed control circuit transformer.

3.0 EXECUTION:

3.1 Welding and Brazing shall be in compliance with AWS D1.1.

3.2 Damage to Galvanized Coatings shall be repaired by applying galvanizing repair paint complying with ASTM D 520.

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SECTION 15661 AIR-COOLED CONDENSING UNITS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air-cooled condensing units. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: All products shall be rated in accordance with ARI 210 and 270.

2.1 Compressor: Provide a hermetic or semi-hermetic compressor with crankcase heaters, inherently protected motors, spring mounts, and capacity modulation.

2.2 Condenser Coils: Provide copper tubes with mechanically bonded aluminum fins.

2.3 Fans and Motor: Provide propeller-type with direct drive or belt drive and vertical discharge. Protect fan with heavy-gauge wire guard. Provide motors which are inherently protected, permanently lubricated, and weatherproof. Motors shall be totally enclosed type or dripproof.

2.4 Casing: Furnish a unit designed for outdoor mounting. Fabricate the casing of heavy-gauge steel that is zinc coated and finished with enamel.

2.5 Controls: Provide safety and operating controls, factory-wired and mounted in an enclosure. Include pressure switches and motor overload devices.

3.0 EXECUTION: Follow manufacturer's recommendations.



SECTION 15670 CONDENSERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of condensers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Air-Cooled Condensers:

- 2.1.1 New Air-Cooled Condenser, when required, shall be a factory-fabricated and assembled unit consisting of coils, fans, and electric motor drive. The condenser shall be designed, fitted, and rated in compliance with recommendations and requirements of ARI 460, ASHRAE 20, and UL 207. Sizing of condenser shall be based on a temperature difference between entering outside air and condensing refrigerant not exceeding 30 F. The saturated refrigerant condensing temperature shall not be over 130 F.
- 2.1.2 Electric Motor shall be totally enclosed type located within the enclosure and fully protected from the weather. Motor starter shall be magnetic across the line type with general purpose enclosure. Thermal overload protection shall be the manual reset type.
- 2.1.3 Housing shall be fabricated from sheet carbon steel complying with ASTM A 569.
- 2.1.4 Refrigerant Piping shall be hard drawn copper, Type L, refrigeration grade complying with ASTM B 75. Valves shall be of brass construction, diaphragm packless or back seating type, specifically designed for refrigeration service.

2.2 Water-Cooled Condensers:

- 2.2.1 New Condensers shall be of shell-and-tube construction. The condenser shall be designed, fitted, and rated in compliance with the recommendations and requirements of ARI 450, ASHRAE 22, and UL 207. The condenser shall be constructed in compliance with Section VIII of ASME Boiler and Pressure Vessel Code.
- 2.2.2 Refrigerant Receiver shall comply with Sections II and VIII of the ASME Boiler and Pressure Vessel Code.
- 2.2.3 Condenser materials for repairs shall be in compliance with Section II of the ASME Boiler and Pressure Vessel Code.
- 2.2.4 Condenser Tubes shall be fabricated of seamless copper tubing with integral fins, and the tubes shall be individually replaceable and rolled or brazed into the tube sheets of the shell-and-tube unit. The entire bundle shall be removable on shell-and-coil units.

3.0 EXECUTION:

- 3.1 Condensers shall be repaired and retested in compliance with Section VIII of the ASME Boiler and Pressure Vessel Code.
- 3.2 Condenser Tubes shall be repaired and retested in compliance with Section VIII of the ASME Boiler and Pressure Vessel Code.
- 3.3 Welding and Brazing shall be performed in compliance with AWS D1.1 and Section IX of the ASME Boiler and Pressure Vessel Code.
- 3.4 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.

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SECTION 15680 REFRIGERANT EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of refrigerant equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Performance Ratings: The performance rating of each item of the new refrigerant equipment furnished shall comply with the applicable portions of ARI 450, 460, 495, and 590.

2.2 Bearings shall be an exact replacement. Bearing life shall be equal to the bearing to be replaced.

2.2.1 Bearings for reciprocating equipment shall be precision, oil-cooled or babbitted type.

2.2.2 Bearings for centrifugal equipment or rotary screw equipment shall be precision, oil-cooled type.

2.3 Mufflers shall be a hot-gas muffler or an exact replacement as indicated. Muffler shall be able to reduce vibration and noise from pulsation.

3.0 EXECUTION:

3.1 Welding: All welding shall be in compliance with AWS D1.1.

3.2 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.

3.3 Controls:

3.3.1 Chiller Controls: Replace, adjust, and recalibrate defective parts and assemblies.

3.3.2 Starter Controls: Replace defective contactors and relays as necessary.

3.3.3 Capacity Controls: Adjust guide vane linkages and actuator control in compliance with the manufacturer's specification.

3.4 Noncondensables: Check accumulation rate of noncondensables in absorption refrigerant equipment for compliance with manufacturer's instructions.



SECTION 15683 REFRIGERATION SPECIALTIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of refrigeration specialties. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Thermostatic Expansion Valves shall be rated and tested in accordance with ASHRAE 17 or ARI 750.

2.2 Filter Driers shall be sealed in-line type or replaceable core type as required. Filter driers shall be tested and rated in accordance with ASHRAE 63 and ARI 710 and shall meet the requirements of UL 207.

2.3 Sight Glasses for moisture and liquid indication shall be UL listed.

2.4 Refrigerants shall be designated in accordance with ASHRAE 34.

3.0 EXECUTION: Installation of all refrigeration equipment shall comply with ASHRAE 15.



SECTION 15711 NATURAL DRAFT COOLING TOWERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of natural draft cooling towers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Cooling Towers shall be constructed in compliance with NFPA 214 and Mil. Spec. MIL-C-16278.

2.2 Wood Towers:

2.2.1 Framework shall be repaired with or constructed of redwood complying with CTI STD-103, or Douglas fir complying with CTI STD-114. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

2.2.2 Louvers shall be repaired with or constructed of redwood, Douglas fir or west coast hemlock.

Douglas fir and hemlock shall have a preservative treatment in compliance with CTI WMS-112.

2.2.3 Water Basin shall be repaired with or constructed of redwood or Douglas fir. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

2.3 Metal Towers:

2.3.1 Framework shall be repaired with or constructed of carbon steel complying with ASTM A 36, hot-dipped galvanized in compliance with ASTM A 123.

2.3.2 Louvers shall be repaired with or constructed of carbon steel complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

2.3.3 Water Basin shall be repaired with or constructed of carbon steel complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

2.4 Glass Fiber Towers:

2.4.1 Framework shall be repaired with redwood complying with CTI STD-103, Douglas fir complying with CTI STD-114, or carbon steel complying with ASTM A 36, hot-dipped galvanized in compliance with ASTM A 123. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

2.4.2 Louvers shall be of rigid formed plastic complying with Fed. Spec. L-P-535.

2.4.3 Water Basin shall be repaired or constructed of redwood or Douglas fir or of carbon steel complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

3.0 EXECUTION:

3.1 Existing Cooling Tower to be Repaired shall be repaired in compliance with NFPA 214.

3.2 Welding and Brazing shall be performed in compliance with AWS D1.1.

3.3 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520. 3.4 Testing: Upon completion of repair work on a cooling tower or installation of a cooling tower, the repaired cooling tower shall be tested for proper operation in compliance with the manufacturer's specifications, and with CTI ATC-105 and ASME PTC 23 for field performance.



SECTION 15712 FORCED DRAFT AND INDUCED DRAFT COOLING TOWERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of forced draft and induced draft cooling towers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Cooling Towers shall be constructed in compliance with NFPA 214. Fire hazard rating for plastic impregnated materials shall not exceed 25. Plastic shall not drip or run during combustion. Determine ratings by ASTM E84 or NFPA 255.

2.2 Wood Towers:

2.2.1 Louvers shall be redwood, complying with CTI STD-103 or Douglas fir or hemlock complying with CTI STD-114. Douglas fir and hemlock shall have a preservative treatment in compliance with CTI WMS-112.

2.2.2 Fill or Contact Surface shall be redwood, complying with CTI STD-103, or Douglas fir or hemlock complying with CTI STD-114. Douglas fir and hemlock shall have a preservative treatment in compliance with CTI WMS-112.

2.2.3 Drift Eliminators shall be redwood, complying with CTI STD-103, Douglas fir or hemlock complying with CTI STD-114, or rigid formed plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84. Douglas fir and hemlock shall have a preservative treatment in compliance with CTI WMS-112.

2.2.4 Water Distribution Basin shall be redwood, complying with CTI STD-103 or Douglas fir complying with CTI STD-114. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

2.2.5 Water Collection Basin shall be redwood, complying with CTI STD-103, Douglas fir complying with CTI STD-114, or carbon steel complying with ASTM A 366 and hot-dipped galvanized in compliance with ASTM A 525. Douglas fir shall have a preservative treatment in compliance with CTI WMS-112.

2.2.6 Framework shall be redwood, complying with CTI STD-103, Douglas fir complying with CTI STD-114, or carbon steel complying with ASTM A 36 and hot-dipped galvanized in compliance with ASTM A 123.

2.2.7 Casing shall be carbon steel, complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

2.3 Metal Towers:

2.3.1 Louvers shall be carbon steel, complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

2.3.2 Fill or Wet Deck shall be carbon steel in compliance with ASTM A 366 and hot-dipped galvanized in compliance with ASTM A 525, rigid formed plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84, or stainless steel complying with ASTM A 167.

2.3.3 Drift Eliminators shall be carbon steel, complying with ASTM A 366 and galvanized in compliance with ASTM A 525, rigid plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84, or stainless steel complying with ASTM A 167.

2.3.4 Water Distribution Basin shall be carbon steel, complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

2.3.5 Water Collection Basin or Pan shall be carbon steel, complying with ASTM A 366 and hot-dipped galvanized in compliance with ASTM A 525 or stainless steel complying with ASTM A 167.

2.3.6 Framework shall be carbon steel, complying with ASTM A 36, hot-dipped galvanized in compliance with ASTM A 123; or stainless steel complying with ASTM A 167.

2.3.7 Casing shall be carbon steel, complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525; or stainless steel complying with ASTM A 167.

2.4 Glass Fiber Towers:

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2.4.1 Louvers shall be formed rigid plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84.

2.4.2 Fill shall be rigid plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84.

2.4.3 Drift Eliminators shall be formed rigid plastic complying with ASTM D 1784, Type 1, Grade 1 with flame spread rating of 15 or less per ASTM E84.

2.4.4 Water Distribution Basin shall be redwood, complying with CTI STD-103, Douglas fir complying with CTI STD-114, carbon steel complying with ASTM A 36 and hot-dipped galvanized in compliance with ASTM A 123, or carbon steel complying with ASTM A 366 and hot-dipped galvanized in compliance with ASTM A 525. Douglas fir shall have a preservative treatment complying with CTI WMS-112.

2.4.5 Water Collection Basin shall be redwood, complying with CTI STD-103, Douglas fir complying with CTI STD-114, carbon steel complying with ASTM A 36 and hot-dipped galvanized in compliance with ASTM A 123, or carbon steel complying with ASTM A 366 and hot-dipped galvanized in compliance with ASTM A 525. Douglas fir shall have a preservative treatment complying with CTI WMS-112.

2.4.6 Framework shall be redwood, complying with CTI STD-103, Douglas fir complying with CTI STD-114, or carbon steel complying with ASTM A 36 and hot-dipped galvanized in compliance with ASTM A 123. Douglas fir shall have a preservative treatment complying with CTI WMS-112.

2.4.7 Casing shall be carbon steel, complying with ASTM A 366, hot-dipped galvanized in compliance with ASTM A 525.

3.0 EXECUTION:

3.1 Existing Cooling Tower to be Repaired shall be repaired in compliance with NFPA 214.

3.2 Welding shall be performed in compliance with AWS D1.1.

3.3 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.

3.4 Testing: Upon completion of repair work on a cooling tower or installation of a cooling tower, the repaired cooling tower shall be tested for proper operation in compliance with the manufacturer's specifications, CTI ATC-105, and ASME PTC 23, for field performance.



SECTION 15751 COILS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of coils. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Pressures:

2.1.1 Water Coil Design Working Pressure shall be 200 psig.

2.1.2 Steam Coil Design Working Pressure shall be 200 psig steam.

2.1.3 Each Replacement Water or Steam Coil shall be hydrostatically tested at 250 psig at the factory.

2.1.4 Each Replacement Direct Expansion Coil shall be pneumatically tested at the factory under water at not less than 300 psig. Each coil shall be completely dehydrated and sealed at the factory upon completion of pressure tests.

2.2 Water, Steam, and Direct Expansion Coils:

2.2.1 Tubing shall be round, seamless, copper tubing, complying with ASTM B 75.

2.2.2 Fins shall be aluminum or copper.

2.2.3 Coil Casing shall be made of galvanized sheet steel complying with ASTM A 526, minimum thickness of 14 gauge.

2.2.4 Water or Steam Coil Headers shall be fabricated from steel pipe complying with ASTM A 53, Grade B; extra heavy seamless copper tubing complying with ASTM B 75; or semisteel complying with ASTM A 126, Class C.

2.2.5 Direct Expansion Coil Headers shall be fabricated from extra heavy seamless copper tubing complying with ASTM B 75.

2.2.6 Each Water Coil shall be provided with a plugged vent tap and drain tap.

2.2.7 Each Steam Coil shall be provided with a vacuum breaker.

2.3 Electrical Heating Coils (and Heat Strips):

2.3.1 Resistance Wire shall be nickel-chromium wire.

2.3.2 Tubular Sheath shall be corrosion-resisting in the surrounding medium and suitable for the temperatures required by the particular application.

2.3.3 Insulating Material shall be densely packed, high purity magnesium oxide.

2.3.4 Insulator Supports for directly exposed elements shall be ceramic or porcelain.

2.3.5 Grid and Heat Strip Elements shall have the resistance wire surrounded by the insulation material and enclosed within the tubular sheath. The sheath shall be imbedded and completely sealed within the cast aluminum grid. Electrical terminals shall project through the cast aluminum grid and shall be designed to minimize the entrance of atmospheric moisture into the heating element.

2.3.6 Heat Strip Element resistance wire shall be uniformly spaced along the length of the sheath.

3.0 EXECUTION:

3.1 Fins shall be mechanically bonded or soldered to the tubes. Tubes shall be rolled and bushed, brazed, or welded to headers. Where required, multiple type supports shall be provided to prevent tube sag. The fin tube and header section shall float within the casing to allow free expansion.

3.2 Removing, Saving, Testing, Cleaning, and Recharging Refrigerants:

3.2.1 Refrigerant in a system in which the coil is to be repaired or replaced shall be removed, saved, and reused in recharging the system. When repair or replacement of the coil has been completed, the refrigerant system shall be pressure-tested and recharged with refrigerant.

3.2.2 The Repaired Coil shall be pressure-tested to 300 psig with dry nitrogen and allowed to stand for 24 hours with no pressure drop after repair or replacement of the coil. Then evacuate the system and/or coil with a vacuum pump capable of pulling 1 mm Hg vacuum absolute. Operate the vacuum pump until a vacuum of 2.5 mm Hg absolute is reached. After evacuation, recharge the system with the refrigerant

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previously removed. Recharge the refrigerant back into the system through a filter drier with capacity capable of removing foreign materials and moisture in the amount of refrigerant removed. The system shall be replenished with refrigerant to provide a fully charged system.

3.2.3 If the system has lost its full charge of refrigerant, a new suction line and liquid line filter drier, sized as recommended by the condenser manufacturer, shall be provided and the system pressure tested, evacuated, and recharged with refrigerant as specified above.

3.3 Welding shall be in compliance with AWS D1.1.

3.4 Brazing shall be in compliance with ASME Boiler and Pressure Vessel Code, Section IX.

3.5 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.

3.6 Testing: Hydrostatically test repaired water and steam coils at 1-1/2 times the maximum working pressure.



SECTION 15760 STEAM AND HOT WATER UNIT HEATERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of steam and hot water unit heaters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Unit Heaters shall comply with the requirements of AMCA 99 and 210; NFPA 70; and UL Electrical Construction Materials Directory.

2.2 Coils:

2.2.1 Coils shall be constructed of round seamless copper tubing complying with ASTM B 75, mechanically or hydraulically bonded or expanded into fins constructed of copper or of aluminum complying with ASTM B 209. Tube joints shall be made with high temperature brazing alloys complying with ASTM E 56.

2.2.2 Coil Headers shall be fabricated from seamless carbon steel pipe complying with ASTM A 53, extra heavy seamless copper tubing complying with ASTM B 75 or B 251, or semi-steel complying with ASTM A 126, Class C. 2.3 Housings shall be fabricated from sheet steel complying with ASTM A 569 of a thickness and of sufficient strength to ensure rigidity. Unit heater housings shall be provided with means of suspension or floor mounting as required.

2.4 Fan and Drive:

2.4.1 Propeller and Centrifugal Fans shall be fabricated of aluminum or steel.

2.4.2 Centrifugal Fan Shaft shall be sized for maximum fan speed.

2.4.3 Fan Bearings on belt-driven units shall be self-aligning, permanently lubricated, or the periodic lubricating type with accessible lubricating means. Bearings shall be designed to withstand radial and thrust working loads.

2.5 Controls: Unit heaters shall be furnished with unit-mounted line voltage thermostats to provide ON/OFF fan control.

3.0 EXECUTION:

3.1 Welding shall be in compliance with AWS D1.1.

3.2 Brazing shall be in compliance with ASME Boiler and Pressure Vessel Code, Section IX.

3.3 Damage to Galvanized Coatings shall be repaired by applying galvanizing repair paint complying with ASTM D 520.



Section 15765 Cleaning Of Heat Exchangers

1.0 DESCRIPTION OF WORK: This specification covers the cleaning of heat exchangers. Products and materials used shall be in accordance with the heat exchanger manufacturer's recommendations and/or shall be as directed by the Contracting Officer. Cleaning procedures shall be developed by the Contractor and shall be in accordance with the heat exchanger manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS

2.1 Equipment required for cleaning such as acid feed tank and pump, alkaline feed tank and pump, mixer, neutralizing tank and pump, power brushes, power cutters, and other related items shall be supplied by the Contractor.

2.2 Chemical Cleaning Materials:

2.2.1 Acid Cleaning Chemicals shall be hydrochloric acid complying with Fed. Spec. O-H-765, ammonium bifluoride NH_4HF_2 , and sulfuric acid complying with Fed. Spec. O-S-809.

2.2.2 Neutralizing Chemicals shall be one percent soda ash solution complying with ASTM D 458 and one percent caustic solution complying with ASTM D 456.

2.2.3 Flushing Water shall be potable having not more than 1,000 ppm total solids.

2.3 Mechanical Cleaning Materials and Equipment:

2.3.1 Hot Water shall be used for high velocity wash.

2.3.2 Powered Brushes shall be of the type for use with power units.

2.3.3 Nylon Brushes shall be of the type blown with high pressure water.

3.0 EXECUTION:

3.1 General: Clean heat exchangers of all scale and deposits. Straighten and clean fins on finned tubes.

3.2 Inspection: After heat exchanger cleaning operation, tubes will all be given a visual inspection by the Contracting Officer for effectiveness of scale removal.

3.3 Welding and Burning: No welding or burning shall be allowed during cleaning operation.

3.4 Acid Wash Time may vary from four to eight hours depending on scale analysis. Time shall represent actual retention of the solvent in the unit, including filling and draining time.

3.5 Effluent Neutralization: Solvent effluent drained from the unit shall be neutralized with caustic in compliance with ASTM D 456 or soda ash in compliance with ASTM D 458, to a pH of 6.8 to 8.5.



SECTION 15780 AIR DEHYDRATION EQUIPMENT (ADHE)

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air dehydration equipment. **The AdhE consists of two components. The Air Dehydration Unit (ADU) and the Air Distribution Equipment (ADE).** Products shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with product manufactures recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The equipment provided shall be of sufficient capacity to establish, control and maintain a preservation environmental with a daily average of less than 50 o/o relative humidity 100 o/o percent of the time. The ADU shall be capable of establishing initial relative humidity levels within 96 hours of startup and thereafter returning the application to established standards within 24 hours. Equipment shall be sized for the specific facility and consist of components with sufficient capacity to evenly distribute dehumidified air to all areas of the preservation area.

2.1 ADU/ADE shall be of a type proven in satisfactory operation for a minimum of ten years. Dehumidifier shall be of the non-cycling sorption type with single desiccant, rotary structure. The casing shall be fabricated as a unitized body with welded aluminum construction for maximum strength and durability. Suitable access panels on both sides of the unit shall allow access for inspection or servicing without disconnecting ducting or electrical wiring. Airflow balancing dampers to be furnished. The ADU/ADE shall be designed for continuous operation. The rotary structure shall be a monolithic fabricated extended surface composite consisting of inert silicates reinforced with uniform diameter glass fibers for maximum strength. The fabricated structure shall be smooth and continuous in the direction of the airflow without interruptions or sandwich layers which restrict airflow or create a leakage path at joining surfaces. Desiccant shall not channel, cake or fracture due to repeated temperature and moisture cycling. The materials of construction shall be non-toxic.

Design shall be modular in approach to readily allow connection to accessories such as face and bypass, pre- or post cool modules. Electrical components shall be UL recognized and wiring methods in accordance with the latest edition of the National Electric Code. Full face contact pressure seals shall be provided to separate the process and reactivation airstreams and eliminate detrimental leakage of air or moisture with static pressure differentials of up to 8" of water gauge. ADU/ADE shall be factory assembled, fully automatic complete with laminar flow desiccant wheel, reactivation heaters, reactivation energy control system, roughing filters, motors, fans, non-ratcheting desiccant rotor drive unit, automatic controller and all components auxiliaries. Dehumidifier shall be functionally tested at the manufactures factory and shipped complete with all components necessary to maintain normal operation.

2.2 The ADU/ADE shall be capable of reliable operation within an ambient temperature range of -40F to 120F. In the event of a power failure the ADU shall have the capability to automatically restart immediately after restoration of power.

2.3 ADU shall have the capacity to operate on natural gas L.P. or electric. ADU shall be provided with a monitoring system to determine if the unit is functioning properly.

2.4 Monitor System: Provide full time local automated control system for the ADU/ADE that will show performance data and record temperature, relative humidity and any alarm conditions and provide graphical plot of performance. Provide a safety override that will shut down the ADU if carbon based gases come in contact in excess of 10 percent of the lower explosive limit. The ADU/ADE unit shall shut off when overhead doors are opened.

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2.5 ADU/ADE Supporting Components: The ADU/ADE units shall be a complete package units, supporting components such as ductwork, connectors, reducers, airflow directors, baffles, flexible hose, PVC pipe, mounting hardware, utility connections, are not part of the package units.

2.6 Warranty ADU/ADE equipment shall have a three year warranty. When used, desiccant wheel rotor, silica gel, solid media and corrugated desiccant rotors shall be warranted for 5 years. If the ADU utilizing different technology is used, it shall provide equivalent warranty.

3.0 EXECUTION: ADUs shall be mounted and employed in such a manner as to the maximize space utilization while providing best protection to the ADU and the ADU performance. Sufficient access shall be provided to the ADU for maintenance and operational requirements. All **connectors** and airflow devices shall be located so as to prevent damage while moving equipment in the preservation area.



SECTION 15781 PACKAGED HEATING AND COOLING UNITS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air-cooled packaged heating and cooling units, including through-wall, roof top, and computer room type units with electrical heat. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Capacity and Performance shall be based on standard air density (0.075 pounds per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent. Capacity ratings shall be in accordance with ARI 240 and 270.

2.2 Casing shall have a corrosion protective coating. Casing shall have 1/2-inch thick minimum thermal insulation and the compressor compartment shall have acoustical insulation.

2.3 Compressors shall be direct drive semi-hermetic with a maximum operating speed of 1,750 rpm. Each compressor shall have an independent refrigeration circuit with integral sub-cooling unit.

2.4 Evaporator Coils shall be copper tubing with aluminum fins. New coils shall be pressure and leak tested at the factory at 1.5 times the working pressure.

2.5 Filters shall be 2-inch thick throwaway type.

2.6 Condensers shall have copper tubes and aluminum fins. New condensers shall be leak tested at the factory at 1.5 times the working pressure. A separate direct drive fan shall be included for each refrigeration circuit.

2.7 Heating Coil shall be low watt density, fin-tubular construction, protected by thermal safety switches.

2.8 Humidifier of the infrared type shall be provided for computer room type units.

3.0 EXECUTION:

3.1 Welding shall be performed in accordance with AWS D1.1 and/or ASME Boiler and Pressure Vessel Code, Section IX.

3.2 Brazing shall be performed in accordance with ASME Boiler and Pressure Vessel Code, Section IX.

3.3 Damage to Galvanized Coatings shall be repaired with paint complying with ASTM D 520.

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SECTION 15782 PACKAGED HEAT PUMPS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air-cooled packaged heat pumps, including through-wall and roof top type units with supplemental electric heat. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Capacity and Performance shall be based on standard air density (0.075 pounds per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent. Capacity ratings shall be in accordance with ARI 240 and 270.

2.2 Casings shall have a corrosion protective coating. Casing shall have 1/2-inch thick minimum thermal insulation, and the compressor compartment shall have acoustical insulation.

2.3 Compressors shall be direct drive semi-hermetic with a maximum operating speed of 1,750 rpm. Each compressor shall have an independent refrigeration circuit with integral sub-cooling unit. Refrigerant accessories shall include a reversing valve and suction line oil/gas accumulator.

2.4 Evaporator Coils shall be copper tubing with aluminum fins. New coils shall be pressure and leak tested at 1.5 times the working pressure.

2.5 Filters shall be 2-inch thick throwaway type.

2.6 Condensers shall have copper tubes and aluminum fins. New condensers shall be leak tested at the factory at 1.5 times the working pressure. A separate direct drive fan shall be included for each refrigeration circuit.

2.7 Auxiliary Heating Coil shall be low watt density, fin-tubular construction, protected by thermal safety switches.

2.8 Controls shall provide for automatic switchover between cooling and heating cycles.

3.0 EXECUTION:

3.1 Welding shall be performed in accordance with AWS D1.1 and/or ASME Boiler and Pressure Vessel Code, Section IX.

3.2 Brazing shall be performed in accordance with ASME Boiler and Pressure Vessel Code, Section IX.

3.3 Damage to Galvanized Coatings shall be repaired with paint complying with ASTM D 520.



SECTION 15800 HUMIDITY CONTROL EQUIPMENT

1.0 DESCRIPTION OF WORK: This section covers the furnishing and installation of humidifiers and dehumidifiers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Humidifiers shall be pneumatic modulating type.

2.1.1 Steam Separator shall be designed to remove water droplets and particles larger than 3 microns when humidifier is operating at full capacity.

2.1.2 Control Valve shall be stainless steel plug type with pneumatic operator.

2.1.3 Distribution Manifold shall provide uniform dry steam distribution throughout its entire length.

2.1.4 Strainer shall be Y-type.

2.1.5 Steam Trap shall be as recommended by the manufacturer of the steam humidifier and shall be preceded by a drip leg.

2.2 Dehumidifiers shall be free-standing self-contained plug-in type units that are UL listed.

2.2.1 Components shall be housed in a portable 22-gauge steel cabinet.

2.2.2 Capacity Ratings shall be in accordance with AHAM DH-1. Overflow cutoff control shall be provided.

3.0 EXECUTION:

3.1 Steam Supply Manifold for humidifier shall be installed either perfectly level or extending upward vertically in duct. Discharge holes shall point upstream against airflow.

3.2 Welding shall be performed in accordance with AWS D1.1 and ASME Boiler and Pressure Vessel Code, Section IX, where applicable.



SECTION 15830 RADIATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of radiators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Radiators shall comply with AGA Directory of Certified Appliances and Accessories; IBR Testing and Rating Code for Finned Tube (Commercial) Radiation, if applicable; NFPA 70; and UL 499 or UL 795, as applicable.

2.2 Cast-Iron Radiators:

2.2.1 Core shall be small tube section constructed of cast iron complying with ASTM A 48.

2.2.2 Core Sections shall be assembled with malleable iron or polytetrafluoroethylene coated steel push nipples.

2.3 Baseboard-Fintube Radiators:

2.3.1 Nonferrous Fintube shall be fabricated of seamless copper tubing, complying with ASTM B 75 and mechanically expanded into aluminum fins.

2.3.2 Ferrous Fintube shall be fabricated of steel pressure tubing complying with ASTM A 450 and mechanically expanded into fins of steel sheet complying with ASTM A 568.

2.3.3 Enclosure, Dampers, and Element Supports shall be fabricated from carbon steel complying with ASTM A 568.

2.4 Radiant Radiators:

2.4.1 Gas Plenum shall be carbon steel with a porcelain enameled finish complying with ASTM A 424 and Fed. Spec. PPP-P-600, or galvanized in compliance with ASTM A 526.

2.4.2 Air Mixer shall be carbon steel with a corrosion-resistant finish complying with ASTM A 526 or ASTM A 568.

2.4.3 Venturi shall be carbon steel complying with ASTM A 526 or ASTM A 568 with a corrosion-resistant finish.

2.4.4 Enclosure shall be carbon steel complying with ASTM A 526 or ASTM A 568.

2.5 Convector Radiators:

2.5.1 Electric Heating Element shall be constructed of nickel chromium wire enclosed within a metal sheath and electrically insulated in the sheath with a densely compacted refractory material.

2.5.2 Hydronic/Steam Heating Elements shall be constructed of seamless copper tubing complying with ASTM B 75 mechanically expanded into aluminum fins. The tube and fin assembly shall be encased in a frame of steel complying with ASTM A 568. Tube headers shall be steel or brass joined to the tubes by high temperature brazing alloys complying with ASTM E 56.

2.5.3 Enclosure, Dampers, Element Supports, and Access Doors (when applicable) shall be fabricated from carbon steel complying with ASTM A 568.

3.0 EXECUTION:

3.1 Welding shall be performed in accordance with AWS D1.1.

3.2 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint complying with ASTM D 520.



SECTION 15840 INDUCTION UNITS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of induction units. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturers recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Induction Units shall include cabinet, primary air plenum with inlet collar, air balancing damper, multi-stage nozzles, coil, drain pan, and discharge stack. Units shall be tested and rated at the factory in accordance with ARI 445.

2.2 Cabinet and Primary Air Plenum shall be constructed of or repaired with 24 gauge galvanized steel with die-cast support frame members. Plenum shall be lined with 3/8-inch thick, 25-pound density insulation, black plastic bonded fiberglass, mat-faced.

2.3 Nozzles shall be provided in vertical strips, precision-molded from heat-resistant thermoplastic material. Nozzles shall be designed for temperature range encountered with pressures up to 3-1/2 inch wg. Nozzle strips shall be mechanically sealed and locked to nozzle frame.

2.4 Dampers shall be multiple-hole design and shall extend the full length of the plenum. Adjustment shall be provided by manual push-pull operator located next to the primary air inlet.

2.5 Coils shall be designed for 300 psi working pressure.

3.0 EXECUTION:

3.1 Induction Units shall be installed level, using shims if required, and anchored to the floor.

3.2 Damage to Galvanized Coatings shall be repaired in compliance with ASTM D 520.

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SECTION 15855 AIR HANDLING UNITS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air handling units. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Built-up air handling units (AHUs) shall consist of casings, fan sections, coils, filter boxes, mixing boxes, dampers, and other equipment as required. All AHUs shall be certified in accordance with ARI 430. Coils shall be certified in accordance with ARI 410. Electric heating coils shall meet the requirements of UL and the National Electric Code. AHUs shall also conform to the requirements of NFPA 90A and all applicable SMACNA standards.

3.0 EXECUTION:

3.1 Air Handling Units shall be installed to conform with NFPA 90A and applicable SMACNA standards.

3.2 Welding shall be performed in compliance with AWS D1.1.



SECTION 15860 CENTRIFUGAL FANS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of centrifugal fans. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Fan Performance:

2.1.1 New Fans shall comply with AMCA 210, 300, and 301.

2.1.2 Capacity and Performance of New or Repaired Fans shall be based on standard air density (0.075 pounds per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent.

2.2 Fan Wheel and Shaft:

2.2.1 Aluminum Fan Wheels shall comply with Fed. Spec. QQ-A-596. Fan wheels for wall exhaust fans shall be constructed of aluminum complying with ASTM B 209. Steel for the fan wheels shall comply with ASTM A 366.

2.2.2 Fan Shaft shall be turned, ground, and polished carbon steel alloy.

2.2.3 Fan Shaft shall be tubular with swaged ends accurately finished.

2.3 Fan Housing:

2.3.1 Fan Housing shall be carbon steel sheet complying with ASTM A 569, except wall exhaust fan housings shall be spun aluminum complying with ASTM B 209.

2.3.2 When the fan discharge of the existing housing to be replaced is changeable, discharge of the new housing shall be easily changed in compliance with AMCA 99.

2.4 Inlet Boxes: Steel for repairs shall be carbon steel sheet complying with ASTM A 569.

2.5 Bearings:

2.5.1 Precision Antifriction Bearings shall comply with ABEMA 9 and ABEMA 11.

2.5.2 Sleeve Bearings shall be self-aligning sleeve bearings.

2.5.3 Roller Bearings shall be self-aligning, high load capacity, grease-lubricated, heavy-duty, pillow block type.

2.5.4 Wall Exhaust Fan Bearings shall be sealed-in lubrication, antifriction type adequate for both radial and thrust loads occurring in the mounting.

2.6 Fan Belts shall comply with RMA Engineering Standards for Multiple V-Belt Drives. Belts for multiple-belt drives shall be installed in matched sets only.

2.7 Insulation in fan housing shall be mineral fiber complying with ASTM C 553 TYPE 1 CLASS B-4.0. Adhesive shall be fire resistive adhesive complying with ASTM C 916.

3.0 EXECUTION:

3.1 Balancing: Centrifugal fan wheels, repaired or new, shall be balanced statically and dynamically.

3.2 Welding shall be performed in compliance with AWS D1.1.

3.3 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair point in compliance with ASTM D 520.

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SECTION 15865 AXIAL FLOW FANS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of axial flow fans. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Capacity and Performance shall be based on standard air density (0.075 pounds per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent. New fans shall comply with AMCA 210, 300, and 301.

2.2 Fan Wheel repair material shall be sheet aluminum complying with ASTM B 209. New wheels shall be of airfoil design and shall be statically and dynamically balanced at the factory.

2.3 Fan Shafts shall be turned, ground, and polished steel of suitable size to operate well below first critical speed.

2.4 Fan Housing shall be 22 gauge, welded carbon steel complying with ASTM A 569.

2.5 Propeller Guards, when required, shall be sheet metal complying with ASTM A 366 or hot-dip galvanized were complying with ASTM A 641.

2.6 Bearings shall be sealed-in lubrication, anti-friction type adequate for both radial and thrust loads occurring in the mounting.

2.7 Fan Belt shall comply with RMA Engineering Standards for Multiple V-Belt Drives. Belts for multiple-belt drives shall be installed in matched sets only. Belt guards shall comply with OSHA.

2.8 Insulation in fan housing shall be mineral fiber complying with ASTM C553, Type 1, Class B-4.0. Adhesive shall be fire resistive adhesive complying with ASTM C916.

3.0 EXECUTION:

3.1 Welding shall be performed in compliance with AWS D1.1.

3.2 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair in compliance with ASTM D 520.



SECTION 15871 POWER ROOF VENTILATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of power roof ventilators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 PRV Performance:

2.1.1 New PVRs shall comply with AMCA 210, 300, and 301.

2.1.2 Capacity and Performance of new and repaired PRVs shall be based on standard air density (0.075 pounds per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent.

2.2 Fan Wheel shall be centrifugal, axial flow, or turbine type, non-overloading, constructed of aluminum complying with ASTM B 209.

2.3 Fan Shaft shall be turned, ground, and polished steel of suitable size to operate well below first critical speed.

2.4 Bearings shall be sealed-in lubrication, anti-friction type adequate for both radial and thrust load occurring in the mounting.

2.5 Fan Housing shall be spun aluminum complying with ASTM B 209. The housing shall be weatherproof with 360 degrees discharge air pattern.

2.6 Fan Belt shall comply with RMA Engineering Standards for Multiple V-Belt Drives. Belts for multiple-belt drives shall be installed in matched sets only.

2.7 Insulation in fan housing shall be mineral fiber complying with ASTM C553, Type 1, Class B-4. Adhesive shall be fire resistive adhesive complying with ASTM C916.

2.8 Roof Curb shall be prefabricated, with continuous welded water-tight seams. The curb shall be of the roofed-over, flashing type, with built-in cant strip.

2.9 Back Draft Dampers for installation in the roof curb shall be multiple blade type, constructed of aluminum complying with ASTM B 209.

3.0 EXECUTION:

3.1 Balancing: Centrifugal fan wheels, repaired or new, shall be balanced statically and dynamically. Propeller fans shall be statically balanced.

3.2 Welding shall be performed in compliance with AWS D1.1.

3.3 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint in compliance with ASTM D 520.



SECTION 15881 DIFFUSERS, REGISTERS, GRILLES, AND LOUVERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of diffusers, registers, grilles, and louvers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Supply Air Ceiling Diffusers shall be constructed of aluminum or steel and shall be furnished with volume control dampers. Provide ceiling-mounted diffusers with rubber gasket sponge and ceiling frames for anti-smudging protection.

2.2 Supply Air Slot Diffusers for sidewall, sill, or floor mounting shall have 1/2-inch bar spacing with 0 degrees or 15 degrees deflection. Construction shall be extruded aluminum. Furnish with volume control damper.

2.3 Return Air Registers shall be constructed of aluminum or steel and shall be furnished with opposed blade volume control dampers.

2.4 Return Air Ceiling Registers shall be constructed of aluminum with aluminum or plastic egg crate grille.

2.5 Grilles shall be as specified for registers, without volume control damper.

2.6 Louvers shall be in accordance with SMACNA Duct Construction Standards - Metal and Flexible. Louvers shall be constructed of aluminum or steel and shall be furnished with birdscreens. Louvers shall bear the AMCA Certified Ratings Seal for air performance and water penetrations ratings as described in AMCA 500.

2.7 Inlets and Outlets shall be sound rated and certified in accordance with ADC 1062R4 in sound power level, dB referenced to 10 to the minus 12 watt, in octave bands 2 through 8. Performance shall be certified in accordance with ADC 1062R4.

2.8 Inlets and Outlets shall follow recommended noise levels as stated in SMACNA Manual for HVAC Systems Duct Design.

3.0 EXECUTION: Diffusers and registers shall be installed in accordance with applicable SMACNA Standards.

3.1 Return Air Registers/Grilles shall be similar to supply air registers/diffusers when applicable.



SECTION 15886 AIR CLEANING DEVICES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of air cleaning devices. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Throwaway Panel Filters shall be constructed of glass, paper, or fabric media with a UL listing of Class 2 and shall be 1 or 2 inches thick as required. The filters shall have an initial resistance not greater than 0.30 inch w.g. at a face velocity of 500 fpm.

2.2 Extended Surface Self-Supporting Filters shall be constructed of UL-listed Class 1 or Class 2 fibrous media, integral media support, and a rigid galvanized steel frame. Nominal thickness shall be 12 inches. Filter dustspot efficiency shall be rated in accordance with ASHRAE 52 Test Standard.

2.2.1 Filters Rated at 60-65 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.50 inch w.g. at 500 fpm face velocity.

2.2.2 Filters Rated at 80-85 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.60 inch w.g. at 500 fpm face velocity.

2.2.3 Filters Rated at 90-95 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.70 inch w.g. at 500 fpm face velocity.

2.3 Extended Surface Non-Supported Filters shall be constructed of UL-listed Class 1 or Class 2 fibrous media. Individual bags shall be retained by a galvanized steel frame. Filter dustspot efficiency shall be rated in accordance with ASHRAE 52 Test Standard.

2.3.1 Filters Rated at 60-65 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.35 inch w.g. at 500 fpm face velocity.

2.3.2 Filters Rated at 80-85 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.45 inch w.g. at 500 fpm face velocity.

2.3.3 Filters Rated at 90-95 Percent Dustspot Efficiency shall have an initial resistance not greater than 0.55 inch w.g. at 500 fpm face velocity.

2.4 Automatic Renewable Roll Filters shall be constructed of 2-inch thick, viscous-coated, UL-listed Class 1 or Class 2 fibrous media. Filter initial resistance shall be not greater than 0.50 inch w.g. at 500 fpm face velocity. Filter efficiency shall be 80-85 percent when tested in accordance with ASHRAE 52.

2.5 Permanent Washable Panel Filters shall consist of galvanized steel media and frames, 1-inch or 2-inch thickness as required. Filters shall have an initial resistance not greater than 0.10 inch w.g. at 500 fpm face velocity.

2.6 HEPA Filters shall be constructed of UL-listed Class 1 glass fiber media sealed in a rigid casing. Filters shall be rated by the DOP Test Method on 0.3 micron particles. Filter initial resistance shall not be greater than 1.0 inch w.g. for the rated airflow. Filters shall be furnished complete with necessary gaskets.

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2.6.1 Filter Rated for 150 fpm Face Velocity with 95 percent DOP efficiency; 6-inch filter depth.

2.6.2 Filter Rated for 250 fpm Face Velocity with 95 percent DOP efficiency; 12-inch filter depth.

2.6.3 Filter Rated for 150 fpm Face Velocity with 99.99 percent DOP efficiency; 6-inch filter depth.

2.6.4 Filter Rated for 250 fpm Face Velocity with 99.99 percent DOP efficiency; 12-inch filter depth.

2.7 Activated Carbon Filters shall be constructed of epoxy-coated perforated steel trays containing the activated carbon. Individual trays shall mount in a gasketed side access housing. The unit shall have an initial resistance of 0.35 inch w.g. at 500 fpm face velocity.

2.8 Electronic Aircleaners shall consist of an electrostatic agglomerator section and a renewable fibrous glass collector. The unit shall provide a dustspot efficiency of 90 percent at 500 fpm face velocity. Typical operating resistance shall be 0.40 inch w.g.

2.9 Dust Collectors shall be the dry centrifugal type complete with integral blower, dust separator, and hopper.

3.0 EXECUTION: Install filters in accordance with applicable sections of NFPA 70, 90A, and 90B.



Section 15887 Tailpipe Exhaust Equipment

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of tailpipe exhaust equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Capacity and Performance shall be based on standard air density (0.075 pound per cubic foot). Fans shall have a peak static efficiency of not less than 60 percent.

2.2 Blowers and Accessories shall comply with AMCA 210, 300, and 301. Fan impellers shall be constructed of heavy gauge steel and accurately balanced both statically and dynamically when installed in the assembled fan unit. Impeller and housing in the air stream shall be coated with neoprene, epoxy, phenolic resins, or other material suitable to resist the corrosive gases and temperatures encountered. Fans to be mounted on exterior of building shall be provided with weatherproof covers.

2.3 Exhaust Duct and Fittings for vehicle tailpipe exhaust systems shall be constructed of galvanized sheet steel. Sheets shall conform to ASTM A 525. Ductwork shall be constructed with minimum metal gauge thickness and reinforced as required in the SMACNA Duct Construction Standards - Metal and Flexible.

2.3.1 Tailpipe Adapter shall be not less than 20-gauge corrosion-resisting steel. The adapter shall be of the tapered cone type with spring clip or other suitable device for exhaust pipe attachment.

2.3.2 Flexible Exhaust Tubing shall be 0.012 minimum thickness galvanized sheet steel or heat-resistant, reinforced wire, fiberglass, and neoprene tubing.

2.3.3 Dampers shall be of the circular disk type with quadrant locking device or blast gate type.

2.3.4 A Flexible Tubing Suspension System shall be furnished and installed for repaired tailpipe exhaust systems where no such suspension system exists. The flexible tubing suspension system shall suspend the flexible tubing overhead when not in use, allowing it to be lowered to the operating level, when required. The suspension system installed shall be complete with cable, pulleys, and operating mechanism.

3.0 EXECUTION:

3.1 Ductwork joints in galvanized sheet steel ductwork shall be soldered or otherwise sealed. The lock seam in straight sections shall be located on top of the duct. Seams shall be suitable for 10-inch water gauge static pressure. Ductwork shall be constructed with minimum metal gauge thickness and reinforced as required in the SMACNA Duct Construction Standards - Metal and Flexible.

3.2 Weather-Resistant Finishes of items located outdoors shall meet the requirements of ASTM B 117.



SECTION 15890 DUCTWORK AND ACCESSORIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of ductwork and accessories. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Metal Duct and Equipment Casings, Housing, and Plenums shall be fabricated in accordance with SMACNA Duct Construction Standards – Metal and Flexible and shall comply with NFPA 90A, 90B, and 91. Metal gauge shall generally be in accordance with SMACNA standards but in no case shall be less than existing duct gauge.

2.1.1 Galvanized Steel shall comply with ASTM A 527 and with ASTM A 525 for zinc coating.

2.1.2 Black Steel shall comply with ASTM A 569.

2.1.3 Aluminum shall comply with ASTM B 209.

2.1.4 Stainless steel shall comply with ASTM A 167.

2.2 Fibrous Glass Duct shall be fabricated in accordance with SMACNA Fibrous Glass Duct Construction Standards.

2.3 Flexible Duct shall be in accordance with NFPA 90A and SMACNA Duct Construction Standards - Metal and Flexible and shall be UL listed.

2.4 Flexible Connectors shall be in accordance with NFPA 90A and shall be UL listed.

2.5 Sealants shall be in accordance with SMACNA Duct Construction Standards - Metal and Flexible.

2.6 Hangers and Supports shall be constructed of galvanized steel or other corrosion-resistant material in accordance with SMACNA Duct Construction Standards - Metal and Flexible.

2.7 Ductwork Accessories shall be in accordance with SMACNA Duct Construction Standards - Metal and Flexible.

2.8 Paint for Repair of Galvanized Surfaces shall comply with ASTM D 520.

3.0 EXECUTION:

3.1 Ductwork: Damaged sections of duct shall be repaired by patching or by replacing complete sections. Work shall comply with the applicable sections of SMACNA Duct Construction Standards - Metal and Flexible, and NFPA 90A, NFPA 90B, or NFPA 91.

3.2 Flame Cutting: No cutting by torch or flame shall be done without authorization from the Contracting Officer.

3.3 Welding shall be performed in compliance with AWS D1.1.

3.4 Damage to Galvanized Coatings shall be repaired by application of galvanizing repair paint.



SECTION 15915 CONTROL AND FIRE DAMPERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of control and fire dampers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 New Control Dampers may be of parallel or opposed blade design and shall be tested in accordance with the requirements of AMCA 500 for the specific performance characteristics required. Construction shall be in accordance with the requirements of SMACNA construction standards, as well as ASHRAE recommendations pertaining to construction of duct accessories.

2.2 New Fire Dampers may be of single blade, multi-blade, or curtain design and shall be tested in accordance with the requirements of UL 555. Fire dampers shall be UL listed and/or FM approved for their intended use. Fire dampers shall also conform to the requirements of the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems.

3.0 EXECUTION:

3.1 Control Damper Installation and Repair Work shall be in compliance with applicable portions of details of construction, as shown in ASHRAE and SMACNA standards.

3.2 Fire Damper Installation and Repair Work for dampers in air conditioning and ventilating duct openings, through walls and floors, shall be in compliance with the requirements of NFPA 90A and the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems. Fire damper installation and repair work for dampers in wall openings without ducts shall be repaired or replaced in compliance with the requirements of NFPA 80, when such openings are not passageways.

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SECTION 15920 SOUND ATTENUATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of sound attenuators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Sound attenuators shall be constructed of galvanized steel with acoustical baffle as required to provide the desired attenuation. Methods for presenting sound attenuation data shall be consistent with the ASHRAE Handbook Series.

3.0 EXECUTION: Installation shall comply with the SMACNA duct construction standards.



SECTION 15951 CONTROL DEVICES FOR MECHANICAL EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of control devices for mechanical equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Controls may include sensors, transducers, controllers, controlled devices, and other accessories as required. Typical items include thermostats, humidistats, aquastats, controllers, control valves, dampers, specialized control packages, air supply packages, tubing, control wiring, and panels. Where a complete control system is replaced, all new control components shall be by the same manufacturer.

3.0 EXECUTION:

3.1 All Control Components other than those located in finished spaces shall be clearly tagged.

3.2 Control Valves shall be mounted horizontally with operator up unless otherwise directed by the Contracting Officer.

3.3 Instrument Air for pneumatic controls shall be clean, dry, oil-free compressed air.

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SECTION 15990 TESTING AND BALANCING OF HVAC SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers testing and balancing of HVAC systems.

2.0 PRODUCTS: (Section not used.)

3.0 EXECUTION:

3.1 Test and Balance Contractor shall be certified by the National Environmental Balancing Bureau (NEBB) or the Associated Air Balance Council (AABC).

3.2 Certified Test Reports shall be submitted by the Contractor to the Contracting Officer. Test reports shall comply with the standards, listed below, of the selected test and balance association.

3.2.1 NEBB-01, Procedural Standards for Testing - Adjusting - Balancing of Environmental Systems.

3.2.2 AABC National Standards for Total System Balance (AABC MN-1).

3.3 Test and Balance Work shall be in accordance with the standards of the selected test and balance association. The work shall also comply with the recommendations of ASHRAE pertaining to instruments, measurements and procedures and with SMACNA-07, HVAC Systems - Testing, Adjusting and Balancing.

3.4 Systems shall be tested at near maximum load conditions. Cooling systems shall be tested in summer; heating systems shall be tested in winter.

3.5 Equipment Settings including dampers, valves, and similar equipment shall be marked to show final positions at the completion of balancing.



DIVISION 16 ELECTRICAL



SECTION 16032 WIRING SYSTEMS EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of wiring systems equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Copper Wire: Hard-drawn-copper conductors shall comply with ASTM B 1 and ASTM B 8 as appropriate for the conductor size. Conductor material is to be determined by UPB item selected without substitution.

2.1.1 Rated Circuit Voltages All wire and cable shall have minimum rated circuit voltages in accordance with Table 3-1 of NEMA WC 7 or NEMA WC 8.

2.1.2 Conductors shall conform to all the applicable requirements of Section 2 of NEMA WC 7 or Part 2 of NEMA WC 8 as applicable and shall be annealed copper. Copper conductors may be bare, or tin- or lead-alloy-coated, if required by the type of insulation used.

2.1.3 Insulation: Rubber insulation shall comply with NEMA WC3. Thermoplastic insulation shall comply with NEMA WC5. Cross-Linked Polyethylene insulation shall comply with NEMA WC7. Ethylene Propylene Rubber insulation shall comply with NEMA WC8.

2.1.4 Non-metallic Sheathed Cable shall comply with UL 719, type NM or NMC.

2.1.5 SO Cord shall be provided with 60 degree C, 600-volt insulation and "Neoprene" jacket. SO cords shall conform to the applicable requirements of NEMA WC 3, Part 7, paragraphs 7.6 and 7.7, respectively. Conductors shall have not less than class H stranding.

2.1.6 Armored Cable shall comply with UL 4 and NFPA 70, and shall be Type AC cable.

2.2 Aluminum Wire: All-aluminum-conductors, AAC, shall be alloy 1350-H19 and comply with ASTM B 230 and ASTM B 231. All-aluminum-alloy-conductors, AAAC, shall be alloy 6201-T81 and comply with ASTM B 398 and ASTM B 399. Aluminum-conductor-steel-reinforced, ACSR, shall comply with ASTM B 232.

2.3 Busways and Fittings: Busways shall comply with NEMA BU 1 and UL 857 and shall be of the voltage, phase, and continuous current ratings indicated. Busways shall have short-circuit ratings not less than the maximum short-circuit currents of associated transformers, assuming primary sources of infinite capacity. Busways shall be feeder-low-impedance type and of outdoor or indoor service construction as suitable to the location. Busways shall be complete with elbows, fittings, flanges, end-closures, tees, crosses, cable-tap boxes, accessories, and other devices required for the indicated installation, and shall be coordinated for connection to the indicated equipment. For wet/damp locations, bus duct shall be heated, nonventilated enclosure, nonsegregated phase type in accordance with IEEE ANSI/IEEE C37.23. Detail drawings for busway supports and bracing shall be submitted and shall indicate that busways are adequately supported for the seismic zone.



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2.4 Plugs and Receptacles: Receptacle service fittings shall have receptacles with configuration and construction in accordance with UL 498 and NEMA WD 1 as applicable. Receptacle dimensions shall comply with NEMA WD 6.

2.5 Conduit: ANSI C80.1, C80.3, and C80.5, NEMA RN 1, and NEMA FB 1.

2.5.1 Rigid Metal conduit shall comply with UL6.

2.5.2 PVC Conduit shall comply with UL651.

2.5.3 Intermediate Metal Conduit (IMC) shall comply with UL 1242.

2.5.4 Reinforced Thermosetting Resin Conduit (RTRC) shall comply with UL1684.

2.5.5 Electrical, Zinc-Coated Steel Metallic Tubing (EMT) UL 797

2.5.6 Electrical Nonmetallic Tubing (ENT) NEMA TC 13

2.5.7 Electrical Plastic Tubing and Conduit NEMA TC 2.

2.5.8 Flexible Conduit, Steel and Plastic General-purpose type, UL 1; liquid tight, UL 360, and UL 1660

2.5.9 Intermediate Metal Conduit UL 1242

2.5.10 PVC Coated Rigid Steel Conduit NEMA RN 1

2.5.11 Rigid Aluminum Conduit ANSI C80.5 and UL 6

2.5.12 Rigid Metal Conduit UL 6

2.5.13 Rigid Plastic NEMA TC 2, UL 651 and UL 651A

2.5.14 Surface Metal Raceways and Fittings: UL 5.

2.6 Electrical Enclosures: General enclosures shall comply with NEMA ICS 6 and OS 1. Power switch gear Assembly enclosures shall comply with NEMA SG 5. Switchboards shall comply with NEMA PB 2. Panelboards shall comply with NEMA PB 1.

2.7 Specific Purpose Wiring Devices: Wiring devices shall comply with NEMA WD 1, and NEMA WD 6 for dimensional requirements of wiring devices.

2.8 General Electrical: The installation shall conform to the requirements of NFPA 70, NFPA 70B and NFPA 101.

2.9 Connectors and Splices: Connectors and splices shall be of copper alloys for copper conductors, aluminum alloys for aluminum-composition conductors, and a type designed to minimize galvanic corrosion for copper to aluminum-composition conductors. Aluminum-composition and aluminum-composition to copper shall comply with UL 486B, and copper-to-copper shall comply with UL 486A.

2.10 Conductor Shielding: Conductor shielding conforming to paragraph 2.7 of NEMA WC 7 or NEMA WC 8, as applicable, shall be used on power cables having a rated circuit voltage above 2,000 volts. In

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addition, conductor shielding for shielded cables shall also comply with Section C of AEIC CS5 or AEIC CS6.

2.11 Electrical Duct System: System shall be single or two level types, and shall consist of single, double, or triple duct as indicated. Duct system shall be located in the structural slab and shall comply with the requirements of UL 884.

2.12 Conduit Support: Metallic conduits and tubing, and the support system to which they are attached, shall be securely and rigidly fastened in place to prevent vertical and horizontal movement at intervals of not more than 10 feet and within 3 feet of boxes, cabinets, and fittings, with approved pipe straps, wall brackets, conduit clamps, conduit hangers, threaded C-clamps, beam clamps, or ceiling trapeze. Loads and supports shall be coordinated with supporting structure to prevent damage or deformation to the structure. Loads shall not be applied to joist bridging. Attachment shall be by wood screws or screw-type nails to wood; by toggle bolts on hollow masonry units; by expansion bolts on concrete or brick; by machine screws, welded threaded studs, heat-treated or spring-steel-tension clamps on steel work. Nail-type nylon anchors or threaded studs driven in by a powder charge and provided with lock washers and nuts may be used in lieu of expansion bolts or machine screws. Raceways or pipe straps shall not be welded to steel structures. Cutting the main reinforcing bars in reinforced concrete beams or joists shall be avoided when drilling holes for support anchors. Holes drilled for support anchors, but not used, shall be filled. In partitions of light steel construction, sheet-metal screws may be used. Raceways shall not be supported using wire or nylon ties. Raceways shall be independently supported from the structure. Upper raceways shall not be used as a means of support for lower raceways. Supporting means shall not be shared between electrical raceways and mechanical piping or ducts. Cables and raceways shall not be supported by ceiling grids. Except where permitted by NFPA 70, wiring shall not be supported by ceiling support systems. Conduits shall be fastened to sheet-metal boxes and cabinets with two locknuts when required by NFPA 70, where insulating bushings are used, and where bushings cannot be brought into firm contact with the box. Otherwise, a single locknut and bushing may be used. Threadless fittings for electrical metallic tubing shall be of a type approved for the conditions encountered. Additional support for horizontal runs is not required when EMT rests on steel stud cutouts.

3.0 EXECUTION:

3.1 Coordination: Contractor shall determine that the wiring system has been de-energized. Before de-energization, the Contractor shall ensure that equipment served by the wiring system will not be damaged by the power outage. Re-energization shall be coordinated to ensure equipment will not be damaged.

3.2 Clearances: Working clearances shall comply with NFPA 70.

3.3 Grounding: Grounding shall be in conformance with NFPA 70, and section 16390.

3.4 Wiring Methods: Wiring shall conform to NFPA 70.

3.5 Boxes and Supports: Boxes shall be provided and sized in the wiring or raceway systems as required by NFPA 70.



SECTION 16110 OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of overhead electrical distribution systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Conductors: ASTM B 8, ASTM B 228, ASTM B 229, ASTM B 230, ASTM B 231, ASTM B 232, ASTM B 399, ASTM B 416; NEMA WC 5, NEMA WC 7 and NEMA WC 8.

2.2 Insulators: ANSI C29.1, C29.2, C29.3, C29.4, C29.5, C29.6, C29.7, C29.8, C29.9, and NEMA HV 2.

2.3 Poles:

2.3.1 Wood Poles: Wood poles shall comply with ANSI O5.1. Poles shall be pressure treated in accordance with AWPA C4, with creosote conforming to AWPA P1/P13. Oil-borne preservatives and petroleum shall conform with AWPA P8 and AWPA P9, respectively. Waterborne preservatives shall conform with AWPA P5. Waterborne preservatives shall be either chromated or ammoniacal copper arsenate. Any species listed in ANSI O5.1 for which a preservative treatment is not specified in AWPA C4, shall not be used. Northern white cedar, if treated as specified for western red cedar, and western fir, if treated as specified for Douglas fir, may be used. Wood poles shall have pole markings located approximately 10 feet from pole butts for poles 50 feet or less in length, and 14 feet from the pole butts for poles longer than 55 feet in length. Poles shall be machine trimmed by turning smooth full length, and shall be roofed, gained, and bored prior to pressure treatment. Where poles are not provided with factory-cut gains, metal gain plates shall be provided.

2.3.2 Steel Poles: Steel poles shall be designed to withstand the loads specified in IEEE C2 multiplied by the appropriate overload capacity factors, shall be hot-dip galvanized in accordance with ASTM A 123. Poles shall have tapered tubular members, either round in cross-section or polygonal, and comply with strength calculations performed by a registered professional engineer. Calculations shall be submitted. Pole shafts shall be one piece. Poles shall be welded construction with no bolts, rivets, or other means of fastening except as specifically approved. Pole markings shall be approximately 3 to 4 feet above grade and shall include manufacturer, year of manufacture, top and bottom diameters, length, and a loading tree. Attachment requirements shall be provided as indicated, including grounding provisions. Climbing facilities are not required. Bases shall be of the anchor-bolt-mounted type. Pole finish shall match existing adjacent poles.

2.3.3 Concrete Poles: Concrete poles shall be designed to withstand the loads specified in IEEE C2 multiplied by the appropriate overload capacity factors. Poles shall be reinforced or prestressed, either cast or spun. Spun poles shall be manufactured by a centrifugal spinning process with concrete pumped into a polished round tapered metal mold. Concrete for spun poles shall have a compressive strength of at least 5000 psi at 28 days. Steel wire shall have an ultimate tensile strength of at least 120,000 psi; and reinforcing bars shall have an ultimate tensile strength of at least 40,000 psi. After the high speed spinning action is completed, a spun pole shall be cured by a suitable wet steam process. Spun poles shall have a water absorption of not greater than three percent to eliminate cracking and to prevent erosion. Concrete poles shall have hollow shafts. Poles shall have a hard, smooth, nonporous surface that is resistant to soil

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acids, road salts, and attacks of water and frost. Poles shall not be installed for at least 15 days after manufacture. Fittings and brackets that conform to the concrete pole design shall be provided. Poles shall conform to strength calculations performed by a registered professional engineer and submitted.

2.4 Crossarms: Crossarms shall comply with RUS REA Bulletin 1728H-701 and shall be solid wood, distribution type, except cross-sectional area with pressure treatment conforming to AWPAC25, and a 1/4 inch, 45 degree chamfer on all top edges. Cross-sectional area minimum dimensions shall be 4-1/4 inches in height by 3-1/4 inches in depth in accordance with IEEE C2 for Grade B construction. Crossarms shall be 8 feet in length, except that 10 foot Crossarms shall be used for crossarm-mounted banked single-phase transformers or elsewhere as indicated. Crossarms shall be machined, chamfered, trimmed, and bored for stud and bolt holes before pressure treatment. Factory drilling shall be provided for pole and brace mounting, for four pins or four vertical line-post insulators, and for four suspension insulators, except where otherwise indicated or required. Drilling shall provide required climbing space and wire clearances. Crossarms shall be straight and free of twists to within 1/10 inch per foot of length. Bend or twist shall be in one direction only.

2.5 Hardware:

2.5.1 Pole Line Hardware: Zinc-coated hardware shall comply with ANSI C135.1, ANSI C135.2, ANSI C135.4, ANSI C135.14, ANSI C135.22. Steel hardware shall comply with ASTM A 575 and ASTM A 576. Hardware shall be hot-dip galvanized in accordance with ASTM A 153. Pole-line hardware shall be hot-dip galvanized steel, except anchor rods of the copper-molten welded-to-steel type with nonferrous corrosion-resistant fittings shall be used.

2.5.2 Armless Construction: Brackets shall be attached to poles with a minimum of two bolts. Brackets may be either provided integrally as part of an insulator or attached to an insulator with a suitable stud. Bracket mounting surface shall be suitable for the shape of the pole. Brackets for wood poles shall have wood gripping members. Horizontal offset brackets shall have a 5-degree uplift angle. Pole top brackets shall conform to ANSI C135.22, except for modifications necessary to provide support for a line-post insulator. Brackets shall provide strength exceeding that of the required insulator strength, but in no case less than a 2800 pound cantilever strength.

2.5.3 Guy Assemblies Guy assemblies shall be aluminum-clad steel in accordance with ASTM B 416, copper-clad steel in accordance with ASTM B 228 or zinc-coated steel in accordance with ASTM A 475. Guy assemblies, including insulators and attachments, shall provide strength exceeding the required guy strength. Three-eye thimbles shall be provided on anchor rods to permit attachment of individual primary, secondary, and communication down guys. Anchors shall provide adequate strength to support all loads.

2.6 Connectors: UL486A and UL486B.

3.0 EXECUTION:

3.1 Scheduling and Coordination: Contractor shall ensure that power interruptions and blocking of thoroughfares have been scheduled and approved.

3.2 Line Clearing: Chemicals used in line clearing operations shall be in compliance with the latest federal and state requirements.

3.3 Safety Precautions: Precautions shall be taken to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI/IEEE C2.



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SECTION 16111 FIBER OPTIC DATA TRANSMISSION SYSTEM

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for new and/or repair and maintenance of fiber optic data transmission systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS :

2.1 FO Modems: shall be selected to meet FO system requirements. The modems shall allow full duplex, asynchronous, point-to-point digital communication using an FO pair.

2.1.1 FO Modem Operating Wavelength shall be centered on 850, 1330, or 1550 nanometers.

2.1.2 FO Modem Inputs and Outputs FO modems shall accept inputs and provide outputs compatible with EIA ANSI/EIA/TIA-232-E, EIA 485, 20 mA current loop, or T1. Digital data rates through each link shall be as selected.

2.2 FO Transmitter and Receiver Modules:

2.2.1 Analog FO Transmitter and Receiver Modules FO transmitter/receiver pairs used to pass analog video signals shall accept inputs and provide outputs that comply with EIA 170 and shall have a bandwidth of 6 MHz or greater.

2.2.2 Digital FO Transmitter and Receiver Modules FO transmitter/receiver pairs used to pass digital signals shall accept inputs and provide outputs compatible with EIA ANSI/EIA/TIA-232-E, EIA 485, 20 mA current loop, or T1. Digital data rates through each link shall be as specified. FO transmitter and receiver modules shall be compatible with each other, the FO cable, and connectors.

2.2.3 FO Transmitter Module The FO transmitter shall accept electronic signals and shall modulate a light source. The light source shall be coupled into an FO cable. The operating wavelength shall be centered on 850, 1330, or 1550 nanometers.

2.2.4 FO Receiver Module The FO receiver module shall receive light from the FO cable and shall convert this light into an electronic signal identical to the electronic signal applied to the FO transmitter module. The operating wavelength shall be the same as the transmitter.

2.3 FO Digital Repeaters: shall be used to extend the range of the FO data transmission system when necessary to meet the requirements.

2.4 FO Analog Repeaters: shall be used to extend the range of the FO data transmission system when necessary to meet the requirements.

2.5 Transceivers for Video Applications: shall allow bi-directional signal transmission on a single fiber. The operating wavelength shall be centered on 850 nanometers in one direction and centered on 1330 nanometers in the other direction. Crosstalk attenuation between channels shall be 40 dB or greater. FO transceivers shall be selected to match or exceed the highest data rate of attached input devices. The FO transceiver shall be mechanically and optically compatible with the remainder of the FO system.



2.6 Transceivers for FO LAN Applications: shall be active units, compatible with the LAN cards, modems and repeaters used in the system. Indicators provided shall be for power, collision detection, receive, transmit, and status. Power for transceivers shall be derived from the AUI port of LAN equipment or from a dedicated power supply. Transceiver loss characteristics shall be less than 1.0 db. Connectors shall be low loss and compatible with LAN equipment. Circuitry shall be included so when a device is disconnected, other devices on the LAN continue to operate without any disruption.

2.7 FO Switches: shall be single pole, double throw. Switching speed shall be less than 15 milliseconds. Insertion loss shall be less than 1.5 dB. Crosstalk attenuation between FO outputs shall be 40 dB or greater.

2.8 FO Active Star Units: shall provide full-duplex communications in a multi-point configuration. Each unit shall have one input port module and up to four output port modules. FO active star units shall be mechanically and optically compatible with the remainder of the FO system. The star unit shall allow a mixed configuration of port module operating wavelengths and single-mode or multimode FO cables. Each port module shall have a separate FO cable input and output. Port modules shall be connected using an electronic data bus. Port module FO transmitters shall regenerate the optical signal at the transmission rate specified. Port modules shall be rack-mounted in a 19 inch rack complying with EIA ANSI/EIA-310-D. The total propagation delay through the star unit shall be less than 100 nanoseconds.

2.9 Fiber Optic Drop Repeaters (FODR): shall combine the features specified for Fiber Optical Digital Repeaters and Local Area Network (LAN) transceivers. FODRs shall regenerate the optical signal at the transmission rate specified. The FODRs shall be mechanically and optically compatible with the remainder of the Fiber Optic system. FODRs shall restore the optical signals amplitude, timing and waveform. The FODR shall provide an electrical interface to the transmission media. The electrical interface shall be identical to all other network interfaces as specified.

2.10 FO EIA 485 Data Transmission Converters: shall be used to connect equipment using EIA 485 data transmission when necessary and as shown. Converters shall operate full duplex and support two wire circuits at speeds up to 2 megabytes per second and have a built in 120 Ohm terminating resistor. Converters shall be mechanically, electrically, and optically compatible with the system.

2.11 Enclosures: shall meet the requirements of Type 12 or 4X as shown. Enclosures and fittings of every description having hinged doors or removable covers, and which contain any part of the FO circuits or power supplies, shall be provided with cover-operated, corrosion-resistant tamper switches, arranged to initiate an alarm signal when the door or cover is moved.

2.12 System Requirements:

2.12.1 Signal Transmission Format Code FO equipment shall use the same transmission code format from the beginning of a circuit to the end of that circuit. Different transmission code formats may be used for different circuits as required to interconnect supported equipment.

2.12.2 Flux Budget/Gain Margin FO links shall have a minimum gain margin of 6 dB. The flux budget is the difference between the transmitter output power and the receiver input power required for signal discrimination when both are expressed in dBm. The flux budget shall be equal to the sum of losses (such as insertion losses, connector and splice losses, and transmission losses) plus the gain margin. When a repeater or other signal regenerating device is inserted to extend the length of an FO circuit, both the circuit between the transmitter and the repeater-receiver, and the circuit between the repeater-transmitter and the receiver are considered independent FO links for gain margin calculations.

2.12.3 Receiver Dynamic Range The dynamic range of receivers shall be large enough to accommodate both the worst-case, minimum receiver flux density and the maximum possible, receiver flux density. The

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receiver dynamic range shall be at least 15 dB. Where required, optical attenuators shall be used to force the FO link power to fall within the receiver dynamic range.

2.13 Optical Fibers:

2.13.1 General Optical fibers shall be coated with a suitable material to preserve the intrinsic strength of the glass. The outside diameter of the glass-cladded fiber shall be nominally 125 microns, and shall be concentric with the fiber core. Optical fibers shall meet EIA ANSI/EIA/TIA-455-46A, EIA ANSI/EIA-455-65, and EIA ANSI/TIA/EIA-455-177A.

2.13.2 50 Micron Multimode Fibers The fibers shall be certified to meet EIA ANSI/EIA/TIA-455-30B and EIA ANSI/EIA/TIA-455-58A.

2.13.3 62.5 Micron Multimode Fibers FO cable shall be certified to meet EIA ANSI/EIA/TIA-455-30B and EIA ANSI/EIA/TIA-455-58A.

2.13.4 8.3 Micron Single Mode Fibers shall be certified to meet EIA ANSI/EIA/TIA-455-170.

2.14 Cross-Connects: Patch Panels shall be a complete system of components by a single manufacturer, and shall provide termination, splice storage, routing, radius limiting, cable fastening, storage, and cross-connection.

2.15 Cable Construction: Flooded cables shall comply with EIA ANSI/EIA-455-81A and EIA ANSI/EIA/TIA-455-82B. Cables shall be from the same manufacturer, of the same cable type, and of the same size. Each fiber and protective coverings shall be continuous with no factory splices. Fiber optic cable assemblies, including jacketing and fibers, shall be certified by the manufacturer to have a minimum life of 30 years. Plenum cable shall meet UL 910, and riser cable shall meet UL 1666. FO cable shall be certified to meet the following: EIA ANSI/TIA/EIA-455-13A, EIA ANSI/EIA/TIA-455-25B, EIA ANSI/TIA/EIA-455-41A, EIA ANSI/EIA/TIA-455-47B, EIA ANSI/EIA/TIA-455-59, EIA ANSI/EIA/TIA-455-61, EIA ANSI/EIA-455-88, EIA ANSI/EIA-455-91, EIA ANSI/TIA/EIA-455-104A, and EIA ANSI/EIA-455-171.

2.16 FO Connectors: shall be the straight tip, bayonet style, field installable, self-aligning and centering. FO connectors shall match the fiber core and cladding diameters. The connector coupler shall be stainless steel and the alignment ferrule shall be ceramic. FO equipment and cable shall use the same type connectors. Connector insertion loss shall be nominally 0.3 dB and less than 0.7 dB.

2.17 Mechanical Splices: Mechanical splices shall be suitable for installation in the field. External power sources shall not be required to complete a splice. Splices shall be self-aligning for optimum signal coupling. Mechanical splices shall not be used for exterior applications where they may be buried underground or laced to aerial messenger cables. Mechanical splices may be used for interior locations and within enclosures. Splice closures shall protect the spliced fibers from moisture and shall prevent physical damage. The splice closure shall provide strain relief for the cable and the fibers at the splice points.

PART 3 EXECUTION

3.1 INSTALLATION System components and appurtenances shall be installed in accordance with the manufacturer's instructions and as shown. Interconnections, services, and adjustments required for a complete and operable data transmission system shall be provided.



3.1.1 Interior Work Cable installation and applications shall meet the requirements of NFPA 70 , Article 770, Sections 52 and 53. Cables not installed in conduits or wireways shall be properly secured and neat in appearance.

3.1.2 Aerial Cable Except as otherwise specified, poles and associated aerial hardware for an overhead FO cable system shall be installed as specified in Section 16370 Overhead Electrical Distribution Systems.

- a. A messenger cable system to support aerial cables shall be furnished. The messenger system shall be capable of withstanding a minimum of 4500 pounds of tension, including appurtenances, guys, and hardware. Messenger cables shall be galvanized zinc coated steel or aluminum clad steel.
- b. The messenger cables shall be grounded at dead ends, at the entrance to each facility, and at intervals not exceeding 1000 feet.
- c. Aerial FO cables shall meet the horizontal, vertical and climbing space clearances in IEEE C2.
- d. Splices in aerial cable shall be within 3 feet of a pole and placed inside a watertight enclosure. Drip loops shall be formed at the cable entrance to the enclosure. Lashing clamps shall be placed within 12 inches of the enclosure.
- e. Loops shall be formed in the aerial cables at points of connection and at poles to prevent damage from thermal stress and wind loading. The communications cable shall be protected from chafing and physical damage with the use of spiral cut tubing and PVC tape, or plastic sleeves. The ground clearance of installed cabling shall be as shown.
- f. Cable shall be run vertically and when possible shall use gravity to assist in cable pulling. Cable shall be pulled from top of run to bottom of run. Cable shall be hand pull if possible. If machine assistance is required, tension shall be monitored using dynamometers or load-cell instruments and shall not exceed specified cable tension limits. After installation, the vertical tension on the cable shall be relieved at maximum intervals of 100 feet using a split support grip.
- g. Lashing wire shall be wound tightly around both the communication cable and the messenger cable by machine methods. The lashing wire shall have a minimum of 1 turn per 14 linear inches and not less than the number of turns per unit length that is recommended by the cable manufacturer for the distance between cable support points and the combined ice and wind loading and extreme wind loading shown or normally encountered loading for the installed location. Lashing clamps shall be placed at all poles and splices

3.1.3 Exterior Underground Cable Except as otherwise specified, conduits, ducts, and manholes for underground FO cable systems shall be installed as specified in Section 16375 Underground Electrical Distribution Systems and as shown.

- a. Minimum burial depth for cable shall be 30 inches, but not less than the depth of the frost line. Burial depth specified shall take precedence over any requirements specified elsewhere.
- b. Where direct burial cable will pass under sidewalks, roads, or other paved areas and no existing conduits or duct banks are available, the cable shall be placed in a 1 inch rigid coated galvanized steel conduit or larger as required to limit conduit fill to 80 percent or less.
- c. Buried cables shall be placed below a plastic warning tape buried in the same trench or slot. The tape shall be 12 inches above the cable. The warning tape shall be continuously imprinted with the words "WARNING - COMMUNICATIONS CABLE BELOW" at not more than 48 inch intervals. The plastic tape shall be acid and alkali resistant polyethylene film, 3 inches wide with a minimum thickness of 0.004 inch. Tape shall have a minimum strength of 1750 pounds per square inch lengthwise and 1500 pounds per square inch crosswise.

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d. During pulling the cable pull line tension shall be continuously monitored using dynamometers or load-cell instruments, and shall not exceed the maximum tension specified by the cable manufacturer. The mechanical stress placed upon the cable during installation shall be such that the cable is not twisted or stretched.

3.1.4 Service Loops Each fiber optic cable shall have service loops of not less than 10 feet in length at each end. The service loops shall be housed in a service loop enclosure.

3.1.5 Metallic Sheath Grounding Fiber optic cable with metallic sheath routed in the trench with a power cable shall have the metallic sheath grounded at the cable termination points.

3.1.6 Splices No splices will be permitted unless the length of cable being installed exceeds the maximum standard cable length available from a manufacturer or unless fiber optic pigtailed are used to connect transmitters, receivers, or other system components for terminations to the fiber. Splices shall be made using the method recommended by the cable manufacturer. Splices shall be housed in a splice enclosure and shall be encapsulated with an epoxy, ultraviolet light cured splice encapsulant or otherwise protected against infiltration of moisture or contaminants. FO splices shall be field tested at the time of splicing. Fusion splices shall have less than 0.2 dB loss. Mechanical splices shall have less than 0.5 dB loss. There shall be no more than 1 splice per 0.6 mile in any of the FO cables excluding terminations. Field splices shall be located in cable boxes. Sufficient cable shall be provided in each splicing location to properly rack and splice the cables, and to provide extra cable for additional splices. Cable ends shall be protected with end caps except during actual splicing. During the splicing operations, means shall be provided to protect the unspliced portions of the cable and its fibers from the intrusion of moisture and other foreign matter.

3.1.7 Connectors shall be as specified in paragraph FO CONNECTORS. Fibers at each end of the cable shall have jumpers or pigtails installed of not less than 3 feet in length. Fibers at both ends of the cable shall have connectors installed on the jumpers. The mated pair loss, without rotational optimization, shall not exceed 1.5 dB. The pull strength between the connector and the attached fiber shall not be less than 50 pounds.

3.1.8 Identification and Labeling Identification tags or labels shall be provided for each cable. Markers, tags and labels shall use indelible ink or etching which will not fade in sunlight, or in buried or underground applications. Markers, tags, and labels shall not become brittle or deteriorate for a period of 20 years. Label all termination blocks and panels with cable number or pair identifier for cables in accordance with EIA ANSI/TIA/EIA-606 and as specified. The labeling format shall be identified and a complete record shall be provided to the Government with the final documentation. Each cable shall be identified with type of signal being carried and termination points.

3.1.9 Enclosure Sizing and Cable Termination enclosures shall be sized to accommodate the FO equipment to be installed. Sizing shall include sufficient space for service loops to be provided and to accommodate a neat, workmanlike layout of equipment and the bend radii of fibers and cables terminated inside the enclosure.

3.1.10 Enclosure Penetrations Enclosure penetrations shall be from the bottom and shall be sealed with rubber silicone sealant to preclude the entry of water. Conduits rising from underground shall be internally sealed.

3.2 Testing:

3.2.1 General The Contractor shall provide personnel, equipment, instrumentation, and supplies necessary to perform testing.



3.2.2 Contractor's Field Test The Contractor shall verify the complete operation and performance of the data transmission system in conjunction with field testing associated with systems supported by the fiber optic data transmission system prior to formal acceptance testing. Field tests shall include a flux density test. These tests shall be performed on each link and repeated from the opposite end of each link.

3.2.2.1 Optical Time Domain Reflectometer Tests Optical time domain reflectometer tests shall be performed using the FO test procedures of EIA ANSI/EIA/TIA-455-59. An optical time domain reflectometer test shall be performed on all fibers of the FO cable on the reel prior to installation. The optical time domain reflectometer shall be calibrated to show anomalies of 0.2 dB as a minimum. Photographs of the traces shall be furnished to the Government. An optical time domain reflectometer test shall be performed on all fibers of the FO cable after it is installed. The optical time domain reflectometer shall be calibrated to show anomalies of 0.2 dB as a minimum. If the optical time domain reflectometer test results show anomalies greater than 1 dB, the FO cable segment is unacceptable to the Government. The unsatisfactory segments of cable shall be replaced with a new segment of cable. The new segment of cable shall then be tested to demonstrate acceptability. Photographs of the traces shall be furnished to the Government for each link.

3.2.2.2 Power Attenuation Test Power attenuation test shall be performed at the light wavelength of the transmitter to be used on the circuit being tested. The flux shall be measured at the FO receiver end and shall be compared to the flux injected at the transmitter end. There shall be a jumper added at each end of the circuit under test so that end connector loss shall be validated. Rotational optimization of the connectors will not be permitted. If the circuit loss exceeds the calculated circuit loss by more than 2 dB, the circuit is unsatisfactory and shall be examined to determine the problem. The Government shall be notified of the problem and what procedures the Contractor proposes to eliminate the problem. The Contractor shall prepare and submit a report documenting the results of the test.

3.2.2.3 Gain Margin Test The Contractor shall test and verify that each circuit has a gain margin which exceeds the circuit loss by at least 6 dB.

3.2.2.4 Analog Video Test Analog circuits shall be tested using a signal conforming to EIA 170 . The monitor or automated test set shall be stable, and shall be as described in EIA 170 . If the result is unsatisfactory, the circuit shall be examined to determine the problem. The Government shall be notified of the problem and of the procedures the Contractor proposes to eliminate the problem. The Contractor shall prepare and submit a report documenting the results of the test.

3.3 TRAINING :

3.3.1 General The Contractor shall conduct a training course for designated personnel in the maintenance of the FO system. The training shall be oriented to the specific system being installed under this specification. The Contractor shall furnish training materials and supplies.

3.3.2 Maintenance Personnel Training The system maintenance course shall be taught at the project site after completion of the endurance test for a period of 1 training day. A maximum of five personnel designated by the Government will attend the course. The course shall be videotaped by contractor and tape given to contracting officer. Training shall include:

- a. Physical layout of the system and each piece of hardware.
- b. Troubleshooting and diagnostics procedures.
- c. Repair instructions.
- d. Preventative maintenance procedures and schedules.
- e. Calibration procedures. Upon completion of this course, the students shall be fully proficient in the maintenance of the system.

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SECTION 16115 UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of underground electrical distribution systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Conductors: Cables shall be single conductor type unless otherwise indicated.

2.1.1 Medium-Voltage Cables Conductor Material Underground cables shall be soft drawn copper complying with ASTM B 3 and ASTM B 8 for regular concentric and compressed stranding or ASTM B 496 for compact stranding. When selected conductor shall be aluminum alloy 1350, 3/4 hard minimum complying with ASTM B 609, ASTM B 609M and ASTM B 231 for regular concentric and compressed stranding or ASTM B 400 for compacted stranding.

2.1.2 Insulation Cable insulation shall be cross-linked thermosetting polyethylene (XLP) insulation conforming to the requirements of NEMA WC 7 and AEIC CS5 or when specified ethylene-propylene-rubber (EPR) insulation conforming to the requirements of NEMA WC 8 and AEIC CS6. A 133 percent insulation level shall be used on 5 kV, 15 kV and 25 kV rated cables.

2.1.3 Shielding When specified cables rated for 2 kV and above shall have a semiconducting conductor shield, a semiconducting insulation shield, and an overall copper shield for each phase.

2.1.4 Neutrals Neutral conductors shall be copper or aluminum, employing the same conductor, insulation and jacket materials as phase conductors, except that a 600-volt insulation rating is acceptable.

2.1.5 Jackets Cables shall be provided with a PVC, polyethylene, or other specified jacket. Direct buried cables shall be rated for direct burial.

2.1.6 Low-Voltage Cables Cables shall be rated 600 volts and shall conform to the requirements of NFPA 70, and be UL listed for the application or meet the applicable section of either ICEA or NEMA standards.

2.1.7 Conductor Material Underground cables shall be annealed copper complying with ASTM B 3 and ASTM B 8. When specified cables may be Type AA-8000 aluminum conductors complying with ASTM B 800 and ASTM B 801. Intermixing of copper and aluminum conductors is not permitted.

2.1.8 Insulation must be in accordance with NFPA 70, and must be UL listed for the application or meet the applicable sections of either ICEA, or NEMA standards.

2.1.9 Jackets Multiconductor cables shall have an overall PVC outer jacket.

2.1.10 Direct Buried Single and multi-conductor cables shall be of a type identified for direct burial. Service entrance cables shall conform to UL 854 for Type USE service entrance cable.

2.1.11 In Duct Cables shall be single-conductor cable, in accordance with NFPA 70. Cables in factory-installed, coilable-plastic-duct assemblies shall conform to NEMA TC 5 or NEMA TC 7.

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2.1.12 Terminations shall be in accordance with IEEE Std 48, Class 1 or Class 2; of the molded elastomer, wet-process porcelain, prestretched elastomer, heat-shrinkable elastomer, or taped type. Acceptable elastomers are track-resistant silicone rubber or track-resistant ethylene propylene compounds, such as ethylene propylene rubber or ethylene propylene diene monomer. Separable insulated connectors may be used for apparatus terminations, when such apparatus is provided with suitable bushings. Terminations shall be of the outdoor type, except that where installed inside outdoor equipment housings which are sealed against normal infiltration of moisture and outside air, indoor, Class 2 terminations are acceptable. Class 3 terminations are not acceptable. Terminations, where required, shall be provided with mounting brackets suitable for the intended installation and with grounding provisions for the cable shielding, metallic sheath, and armor.

2.2 Conduits and Ducts: Ducts shall be single, round-bore type, with wall thickness and fittings suitable for the application. When specified duct lines shall be concrete-encased, thin-wall type. When specified duct lines shall be nonencased direct-burial, thick-wall type. Where concrete encasement is not required, low-voltage circuits may utilize factory-installed cable in coilable plastic duct.

2.2.1 Metallic Conduit Intermediate metal conduit shall comply with UL 1242. Rigid galvanized steel conduit shall comply with UL 6 and ANSI C80.1. Metallic conduit fittings and outlets shall comply with UL 514A and NEMA FB 1.

2.2.2 Nonmetallic Ducts

2.2.2.1 Bituminized Fiber Duct UL 1684 for Type I (Thinwall) or Type II (Thickwall).

2.2.2.2 Concrete Encased Ducts UL 651 Schedule 40 or NEMA TC 6 Type EB.

2.2.2.3 Direct Burial UL 651 Schedule 40 and Schedule 80 as indicated, or NEMA TC 6 Type DB.

2.2.3 The Conduit Sealing Compound for sealing ducts and conduits shall have a putty-like consistency hand workable at temperatures as low as 35 degrees F. Compound shall neither slump at a temperature of 300 degrees F, nor harden materially when exposed to the air. Compound shall adhere to clean surfaces of fiber or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compound shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands of workmen, materials, or upon the environment.

2.2.4 Manholes, Handholes, and Pullboxes Manholes, handholes, and pullboxes shall be as selected. Strength of manholes, handholes, and pullboxes and their frames and covers shall conform to the requirements of IEEE C2. Precast-concrete manholes shall have the required strength established by ASTM C 478, ASTM C 478M. Frames and covers shall be made of gray cast iron and a machine-finished seat shall be provided to ensure a matching joint between frame and cover. Cast iron shall comply with ASTM A 48, Class 30B, minimum. Handholes for low voltage cables installed in parking lots, sidewalks, and turf areas shall be prefabricated from a cement mixture consisting of sand and aggregate with continuous woven glass strands. Mixture shall have an overall compressive strength of at least 10,000psi and a flexural strength of at least 5,000 psi. Pullbox and handhole covers in sidewalks, and turf areas shall be of the same material as the box. Concrete pullboxes shall consist of precast reinforced concrete boxes, extensions, bases, and covers.

2.3 Tape: Fireproofing tape shall be at least 2 inches wide and shall be a flexible, conformable, polymeric, elastomer tape designed specifically for fireproofing cables. Preapplication plastic tape shall be pressure sensitive, 10 mil thick, conforming to UL 510.



2.4 Insulators: ANSI C29 8 and C29 9.

2.5 General Electrical: ANSI C2, NFPA 70.

2.6 Testing: IEEE 48.

2.7 Concrete: Aggregate, ASTM C 33; Portland cement, ASTM C 150, Type 1; compressive strength 4,000 psi at 28 days.

3.0 EXECUTION:

3.1 Coordination: Contractor shall ensure that power interruptions and blocking of thoroughfares have been scheduled and approved.

3.2 Tests: All underground lines, splices, and terminations that have undergone maintenance, repair, or are new installation shall be tested before placement in service.

3.3 Ductbank: No dips or low points that retain water are permissible. Conduit shall be encased with not less than 3 inches of concrete when not direct-buried.

3.4 Manholes and Handholes shall be spaced and installed so as not to exceed the pulling tensions of the cables to be pulled. Maximum pulling tensions shall be as recommended by the cable manufacturer.

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SECTION 16121 INSTITUTIONAL ELECTRIC HEATING EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of institutional electric heating equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Controls: NEMA DC 4, UL 20, UL 917, and UL 1020.

2.2 Heaters: UL 499.

2.3 General Electrical: NFPA 70 and 70B.

2.4 Asbestos Usage: Materials containing asbestos shall not be used.

3.0 EXECUTION:

3.1 Coordination: Contractor shall determine that heating equipment has been de-energized. Temporary heaters shall be supplied if required to maintain temperature.

3.2 Motor Repair: Electric motors to be repaired shall be done by a shop specializing in the repair of motors.



SECTION 16123 ELECTRICAL DISTRIBUTION SYSTEM GROUNDING

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of electrical distribution system grounding. Products shall match existing materials and/or shall be directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 **PRODUCTS:** (Section not used.)

3.0 **EXECUTION:**

3.1 Coordination and Scheduling: Contractor shall ensure that power interruptions have been scheduled and approved.

3.2 Outages: Service interruptions shall be limited in number and duration, and the extent of lines involved shall be held to a minimum.

3.3 Protection: Take precautions, in compliance with ANSI C2, to prevent injury to personnel and to avoid damage to equipment and other property.

3.4 Workmanship: Installation shall be in compliance with IEEE 80 and 142. Install protective moulding, staples and conduit as recommended by these standards.

3.5 Trenching: Exercise care when digging trenches for installation or testing of ground equipment. Protect adjacent structures and properly shore excavations.

3.6 Grounding shall comply with NFPA 70, ANSI C2, and IEEE 80 and 142. Ground neutral conductors, cable shields, metallic cable sheaths and armor, metallic conduits, pothead bodies, junction boxes, lightning arresters, fence enclosures, and noncurrent-carrying metallic parts of equipment. Ground rods shall be made of copper, or copper-clad steel not less than 1-inch by 8 feet long and, except those installed in manholes, shall be driven into the earth at least 9 feet. Ground connections in earth shall not be backfilled until after inspection by the Contracting Officer. Repairs and maintenance of the grounding system shall include resistance measurements and tightening of all bolted connections.

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SECTION 16233 CLOCK AND PROGRAM SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of clock and program systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Time and Control: UL 863 and 916.

2.2 General Electrical: NFPA 70 and 70B.

3.0 EXECUTION: Contractor shall determine that required notices have been given and that power to the equipment has been disconnected.



SECTION 16300 MOTOR CONTROL CENTERS, PANELBOARDS AND LOAD CENTERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of panelboards and load centers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Panelboards: Fed. Spec. W-P-115, NEMA PB 1, and PB 1.1. Panelboards shall be UL 67 labeled. Enclosures shall meet the requirements of UL 50. Outdoor cabinets shall be NEMA 3R raintight.

2.2 Fuses and Fuse Holders: ANSI/UL 512, 198. See Section 16440 for additional requirements.

2.3 Molded Case Circuit Breakers: NEMA AB1. See Section 16440 for additional requirements.

2.4 General Electrical: NFPA 70 and 70B.

2.5 Enclosures Beyond Repair: Replace with the same size and type in compliance with NEMA ICS and Fed. Spec. W-P-115. Carbon steel, ASTM A 366; stainless steel, ASTM A 176; galvanized sheet steel, ASTM A 526.

2.6 Motor Control Centers: Each motor control center shall be designed for operation on the selected voltage, phase and frequency requirements. The equipment shall conform to all the applicable requirements of NEMA ICS 1, NEMA ICS 2, NEMA ICS 4 and NEMA ICS 6. Vertical sections and individual units shall be listed and labeled under UL 845 where ever possible. In lieu of the UL listing, certification from any nationally recognized, adequately equipped, testing agency that the individual units and vertical sections have been tested and conform to the UL requirements of that agency will be acceptable when approved by the Contracting Officer. The motor control center shall be NEMA Class II, Type B or C as specified motor control centers in accordance with NEMA ICS 2.

3.0 EXECUTION:

3.1 Coordination: Contractor shall determine that equipment served by panelboards and load centers will not be damaged before or after power is cut off and that power to the panelboards and load centers has been disconnected or cut off.

3.2 Clearances: Working clearances required by NFPA 70 shall be provided.

3.3 Tests: All devices and systems that have undergone maintenance, repair, or are new installation shall be tested before placement in service.

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SECTION 16313 ELECTRIC MOTORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of electric motors. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 General: Parts shall be factory-made. Existing bolts and screws that are rusted, corroded, cross-threaded, or otherwise defective and are removed due to repair work shall be replaced with new bolts and screws.

2.2 Motor Assemblies and Components for replacement purposes shall be designed for same service as existing. Repaired rotors shall be balanced. Brushes worn to within 20 percent of usable length shall be replaced with same type and size brushes.

2.3 New Motor shall be of like kind and of the same size, performance rating, and characteristics as the existing motor to be replaced and shall comply with NEMA MG 1 and UL 1004.

2.4 Products included in these specifications are:

2.4.1 Single Phase Induction Motor.

2.4.2 Universal Motor.

2.4.3 Polyphase Squirrel-Cage Induction Motor.

2.4.4 Polyphase Wound Rotor Induction Motor.

2.4.5 Polyphase Synchronous Motor.

2.4.6 Direct Current Motor.

2.5 Technical Specifications: Six copies of complete descriptive specification of each type and size motor provided, with necessary cuts, photographs, and drawings to clearly indicate the construction of the motor, the materials and treatments used to prevent corrosion of parts, bearing construction, and type of insulation used on all windings. Submittal shall include all information required for selection of protective and control equipment and for operational setting, such as, but not limited to, normal and maximum operation temperature for windings and bearings, overload trip setting for motor maximum condition and starting times for starting at rated and 90 percent starter voltage. Contracting Officer's approval shall be obtained in writing prior to the commencement of manufacture/procurement of motors.

3.0 EXECUTION:

3.1 Compliance: Take precautions in accordance with the National Electrical Safety Code. Workmanship shall be executed in compliance with NFPA 70 and 70B.



3.2 Scheduling and Coordination: Contractor shall determine that required notices have been given and that equipment served by the motor will not be damaged due to motor shutdown.

3.3 Lubrication, Operation, and Adjustment: Before operational testing, thoroughly clean electric motor of all foreign material, and lubricate all electric motors or parts requiring lubrication with the types of lubricants recommended by the electric motor manufacturer.

3.4 Deficiencies, Safety Hazards, and Code Violations: Should the Contractor find or observe any deficiency, safety hazard, or code violation in the existing electrical system, equipment, devices, or installations that are not indicated or specified to be corrected under the contract, they shall be promptly reported to the Contracting Officer. The Contractor may submit recommendations for correction of such deficiency, safety hazard, or code violation with his report.

3.5 Requirements Specific To Each Motor Type:

3.5.1 Single-Phase Induction Motors:

3.5.1.1 Single-Phase Induction Motors shall comply with NEMA MG 1.

3.5.1.2 Frame Sizes shall comply with NEMA MG 13.

3.5.2 Universal Motors:

3.5.2.1 Armature: Core of armatures shall be built up of annealed and insulated laminations. Commutator shall be built up of hard drawn, hard rolled copper segments insulated from each other by mica in compliance with NEMA MG 1.

3.5.2.2 Armature Assembly shall be dynamically balanced for smooth operation in compliance with NEMA MG 1 paragraphs 20.53, 21.54, and 12.06.

3.5.2.3 Bearings shall be sleeve bearing or ball bearing type complying with NEMA MG 1.

3.5.2.4 Brushholders shall be in compliance with NEMA MG 1.

3.5.2.5 Brushes shall be in compliance with NEMA CB 1.

3.5.2.6 Shaft shall be in compliance with NEMA MG 1.

3.5.3 Polyphase Squirrel-Cage Induction Motors:

3.5.3.1 Polyphase Squirrel-Cage Induction Motors shall comply with NEMA MG 1.

3.5.3.2 Frame Size shall comply with NEMA MG 13.

3.5.4 Polyphase Wound Rotor Induction Motors:

3.5.4.1 Polyphase Wound Rotor Induction Motor shall comply with NEMA MG 1.

3.5.4.2 Frame Size shall comply with NEMA MG 13.

3.5.4.3 Brushes shall be in compliance with NEMA CB 1.

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3.5.4.4 Stator shall be rewound with conductors of same gauge and material as the existing stator.

3.5.4.5 Rotor shall be rewound with conductors of same gauge and material as the existing rotor.

3.5.5 Polyphase Synchronous Motors:

3.5.5.1 Polyphase Synchronous Motor shall comply with NEMA MG 1.

3.5.5.2 Frame Size shall comply with NEMA MG 13.

3.5.5.3 Brushes shall comply with NEMA CB 1.

3.5.6 Direct Current Motors:

3.5.6.1 Armature core shall be built up of annealed and insulated laminations. Commutator shall be built up of hard drawn, hard rolled copper segments insulated from each other by mica in compliance with NEMA MG 1.

3.5.6.2 Armature Assembly shall be dynamically balanced for smooth operation in compliance with NEMA MG 1 paragraphs 20.53, 21.54, and 12.06.

3.5.6.3 Bearings shall be ball bearing or sleeve bearing type in compliance with NEMA MG 1.

3.5.6.4 Brushholders shall be in compliance with NEMA MG 1.

3.5.6.5 Frame size shall comply with NEMA MG 13.

3.5.6.6 Shaft shall be in compliance with NEMA MG 1.

3.5.6.7 Brushes shall be in compliance with NEMA CB 1.

3.6 Outages and Testing of Electric Motors:

3.6.1 Outages and service interruptions shall be held to a minimum. De-energization will be accomplished by station forces.

3.6.2 Preinstallation Test: Existing motors that have undergone major maintenance and/or repair shall be subjected to insulation resistance tests and insulation high potential tests as outlined in NFPA 70B. Furnish the results of the tests to the Contracting Officer.



SECTION 16415 ELECTRICAL DISTRIBUTION SYSTEM VOLTAGE REGULATORS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of electrical distribution system voltage regulators. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Material: Voltage regulators shall comply with IEEE ANSI/IEEE C57.15 and shall be of the outdoor, self-cooled, 55/65 degrees C temperature rise, single-phase or three-phase station-type. Two single-phase units connected in open-delta are not acceptable. Windings and the load-tap-changing mechanism shall be mineral-oil-immersed. When operating under load, a regulator shall provide plus and minus 10 percent automatic voltage regulation in approximately 5/8 percent steps, with 16 steps above and 16 steps below rated voltage. Automatic control equipment shall provide Class 1 accuracy. Bypass surge arresters shall be suitable for a grounded or alternately as specified an ungrounded system and for the associated regulator voltage. Station or Intermediate class surge arresters shall be mounted next to each incoming line bushing on a regulator tank-mounted bracket and connected to a surge arrester ground pad-mounted on the regulator tank. New mineral oil shall comply with ASTM D 923.

3.0 EXECUTION:

3.1 Outages shall be scheduled and coordinated in advance with the Contracting Officer.

3.2 Protection: Take precautions to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI C2.

3.3 Maintenance and Repair Work: All maintenance and repair work shall be accomplished and in compliance with applicable ANSI C57-series and ASTM standards.

3.4 Oil Handling and Disposal: Oil and oil-contaminated materials shall be handled and disposed of to comply with the latest Environmental Protection Agency requirements.

3.5 Test Reports on field tests made in compliance with ANSI C57.15 shall be submitted to the Contracting Officer.

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SECTION 16416 TRANSFORMERS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of materials for new and/or repair and maintenance of existing transformers. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Transformer Assemblies and Components for replacement purposes shall be designed for the same service as existing. New transformers shall comply with IEEE ANSI/IEEE C57.12.00 for general requirements and ANSI C57.12.20 for specific requirements for overhead transformers.

2.2 Transformers covered under this specification are as follows:

2.2.1 Dry Type Transformers.

2.2.2 Instrument Transformers.

2.2.3 Control Transformers.

2.2.4 Grounding Transformers.

2.2.5 Liquid-Filled Transformers.

3.0 EXECUTION:

3.1 Safety: Take precautions in compliance with the National Electrical Safety Code (ANSI/IEEE C2); execute work in compliance with NFPA 70 and 70B.

3.2 Coordination: Coordinate the work schedule with the Contracting Officer.

3.3 Repairs: Repair and retighten burned or broken lugs, windings, loose bolts, nuts, and screws. Repair windings in accordance with NEMA ST 20.

3.4 Testing: Perform electrical insulation tests to verify the integrity of any repairs prior to re-energization of the transformers, unless written permission is obtained from the Contracting Officer stating otherwise.

3.5 Oil Handling and Disposal: Handle and dispose of oil and oil contaminated materials in compliance with the latest Environmental Protection Agency requirements.

3.6 Deficiencies, Safety Hazards, and Code Violations: Should the Contractor find or observe any deficiency, safety hazard, or code violation in the existing electrical system, equipment, devices, or installations that is not indicated or specified to be corrected under the contract, it shall be promptly reported to the Contracting Officer. The Contractor may submit recommendations for correction of the deficiency, safety hazard, or code violation with his report.

3.7 Additional Execution Requirements Specific to Each Type of Transformer:



3.7.1 Dry Type Transformers:

3.7.1.1 General: Replacement transformers shall have a winding configuration identical to that of the existing transformer and shall comply with NEMA ST 20, ANSI C57.12.22, C57.12.10, C57.12.40 and C57.12.01. Transformer shall be labeled as complying with UL1562.

3.7.1.2 Noise Isolation Pads shall be checked for excessive wear and replaced if necessary.

3.7.1.3 Dust shall be cleaned from transformer winding and enclosure ventilation louvers.

3.7.2 Instrument Transformers:

3.7.2.1 Current Transformers shall be manufactured in compliance with NEMA EI 21.1 and EI 21.2 and shall have an accuracy Class of 0.6 at burden designation of B-0.1 and B-0.2 and an accuracy of 1.2 at B-0.5 as defined in ANSI C57.13 for instrument transformers. Instrument transformers shall meet requirements of IEEE/ANSI C12.11 and C57.13.

3.7.2.2 Potential Transformers shall have an accuracy of 0.3W, 0.3X, 0.3Y, 1.2Z as defined in ANSI C57.13 for instrument transformers.

3.7.2.3 Fuses: Potential transformers shall be protected on the high and low voltage side by fuses. Fuse holders are to be installed in an easily accessible position.

3.7.2.4 Repair: No attempt to repair current or potential transformers shall be made.

3.7.3 Control Transformers:

3.7.3.1 Core shall be in compliance with UL 506 and NEMA ST1.

3.7.3.2. Fuses: All ungrounded conductors of primary and secondary of potential transformers shall be protected by fuses.

3.7.3.3 Repair: No attempt to repair control transformers shall be made.

3.7.4 Grounding Transformers:

3.7.4.1 Replacement Zig-Zag Grounding Transformers shall be three-phase zig-zag autotransformers or six single-phase transformers connected zig-zag and shall comply with UL 506.

3.7.4.2 Replacement Wye-Delta Grounding Transformers shall be three-phase transformers or three single-phase transformers connected wye-delta and shall be in compliance with ANSI C57.12.00.

3.7.4.3 Core shall be in compliance with ANSI C57.12.00.

3.7.5 Liquid-Filled Transformers:

3.7.5.1 Replacement Oil-Filled Transformers shall have a winding configuration identical to the existing transformer and shall comply with ANSI/IEEE C57.12.00, C57.12.90. Transformer shall be installed in accordance with ANSI/IEEE C57.93.

3.7.5.2 Gaskets shall match existing type removed.

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3.7.5.3 Liquid Dielectrics

3.7.5.3.1 Oil Added to Transformers shall be the same type as existing or shall be an oil recommended by the transformer manufacturer. Dielectric strength of oil shall not be less than 30 kV. Mineral oil shall comply with NEMA TR P8. Mineral oil shall not be added to high fire point oils such as askarel and silicone.

3.7.5.3.2 Liquid dielectrics for transformers shall be non-polychlorinated biphenyl (PCB) mineral-oil or less-flammable liquid as specified. Nonflammable fluids shall not be used. Tetrachloroethylene (perchloroethylene) and 1, 2, 4 Trichlorobenzene (TCB) fluid shall not be used. Liquid dielectrics in retrofitted equipment shall be certified by the manufacturer as having less than 50 parts-per-million (ppm) PCB content. In lieu of the manufacturer's certification, the Contractor may submit a test sample of the dielectric in accordance with ASTM D 923 and have tests performed per ASTM D 4059 at a testing facility approved by the Contracting Officer. Equipment with test results indicating PCB level exceeding 50 ppm shall be replaced.

3.7.5.4 Repair Leaks by cleaning the leak area and welding or by applying 1/4-inch thick steel plate patch and welding in place. After welding, check the repaired area for leaks, reweld if leaking, reclean, and touch up with paint. Welding shall comply with AWS D1.1.

3.7.5.5 Gaskets, Vacuum, and Liquid Level Gauges found to be defective shall be replaced.

3.7.5.6 Ground Resistance Test Readings shall be performed across phase-to-phase windings and phase-to-ground windings. Tabulate results, and submit them to the Contracting Officer.

3.7.5.7 Dielectric Test shall be performed on oil samples taken from top and bottom filter press connections. Record and submit results to the Contracting Officer.

3.7.5.8 Transformer Liquid Levels shall be checked for correct level and filled if low. Oil added to transformers shall be same type as existing oil or shall be an oil recommended by the transformer manufacturer. Dielectric strength of oil shall not be less than 30 kV. Mineral oil shall comply with ANSI/IEEE C57.91 and C57.92. Mineral oil shall not be added to high fire point oils such as askarel and silicone.

3.7.5.9 Transformer Tap Connections and tap changer shall be tightened.

3.7.5.10 Pressure of Inert Gas in cylinders used to maintain positive pressure inside transformer tank shall be checked. Replace cylinder if pressure fails below transformer manufacturer's recommended level for gas cylinder pressure.

3.7.6 Outages and Testing of Transformers:

3.7.6.1 Service Interruptions shall be held to a minimum. De-energization will be accomplished by others.

3.7.6.2 Preinstallation Test: Existing transformers that have undergone major maintenance and/or repair shall be subjected to insulation resistance tests and insulation high potential tests as outlined in NFPA 70B. The results of the tests shall be furnished to the Contracting Officer.

3.7.6.3 Oil Test: Transformers shall have insulating oil tested.

3.7.6.4 Insulation Test: Transformers shall have insulation tested.



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SECTION 16439 UNINTERRUPTIBLE POWER SYSTEM (UPS)

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of uninterruptible power systems. Products shall match existing materials or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The UPS system shall consist of UPS module, battery system, battery protective device, system cabinet, static bypass transfer switch, controls and monitoring. Input ac power shall be connected to the normal source ac input of the UPS module. The battery shall be connected to the dc input of the UPS module through the battery protective device. The ac output of the UPS system shall be connected to the critical loads.

2.0.1 UPS Module and Battery System UPS module shall contain required input isolation transformer, rectifier/charger unit, inverter unit and controls, battery protective device, and any other specified equipment/devices. Battery system shall contain the battery cells, racks, battery disconnect, battery monitor and cabinet.

2.0.2 Cabinet, Static Bypass Transfer Switch, Control and Monitoring The UPS system shall include the system cabinet, static bypass transfer switch, system protective devices, monitoring and controls, means of isolating the system from the critical load, and remote monitoring interfaces.

2.1 Batteries: NEMA PE 1 for safety requirements and IEEE 485 for sizing. Battery system shall contain the battery cells, racks, battery disconnect, battery monitor and cabinet with seismic zone conditions considered. A storage battery with sufficient ampere-hour rating to maintain UPS output at full capacity for the specified duration shall be provided for each UPS module. The battery shall be of heavy-duty, industrial design suitable for UPS service. The cells shall be provided with flame arrestor vents, intercell connectors and cables, cell-lifting straps, cell-numbering sets, and terminal grease. Intercell connectors shall be sized to maintain terminal voltage within voltage window limits when supplying full load under power failure conditions. Cell and connector hardware shall be stainless steel of a type capable of resisting corrosion from the electrolyte used.

2.2 Battery Charger: UL 1236.

2.3 Switchgear: NEMA SG 5. UPS shall be coordinated with switchgear as described in section 16470.

2.4 Emergency and Standby Power Systems: IEEE 446.

3.0 EXECUTION:

3.1 Coordination and Scheduling: Outages shall be scheduled and coordinated in advance with the Contracting Officer.

3.2 Protection: Take precautions to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI/IEEE C2.



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3.3 Maintenance, Repair, or Replacement Work: The Contractor shall check the UPS in accordance with the manufacturer's instructions Mil, Std. MIL-STD-202 and IEEE 446. If instructed by the Contracting Officer, the Contractor shall check for electromagnetic compatibility in accordance with Mil. Std. MIL-STD-461 and MIL-STD-462. As a result of the testing or for preventive maintenance, the Contractor shall maintain, repair, or replace any piece of equipment requiring work.

3.4 Testing and Training: Contractor shall comply with all manufacturers recommended Installation testing, load testing, full load burn in testing, battery discharge testing. Contractor shall provide training classes to persons designated by contracting officer. Training shall be video taped by contractor and tape shall be provided to contracting officer. A factory training videotape may be provided as part of the training materials.



SECTION 16440 INTERIOR LOW-VOLTAGE DISCONNECTING DEVICES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of interior low-voltage disconnecting devices. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Enclosed Switch Box: Incoming line power fuse disconnecting units, consisting of power fuses and fuse disconnecting switches, shall comply with UL98 and NEMA SG 2. Expulsion-type or Current-limiting power disconnecting units and fuses shall have ratings in accordance with ANSI C37.46.

2.2 Fuse Holders and Fuses: NEMA FU 1, ANSI/UL 512, 198.2, 198B, and ANSI C97.1 as applicable. Equipment provided under this contract shall be provided with a complete set of properly rated fuses when;

- a. The equipment manufacturer utilizes fuses in the design of the equipment.
- b. If current-limiting fuses are required to be installed to limit the ampere-interrupting capacity of circuit breakers or equipment to less than the maximum available fault current at the location of the equipment to be installed fuses.

Fuses shall have a voltage rating of not less than the phase-to-phase circuit voltage, and shall have the time-current characteristics required for effective power system coordination.

2.3 Molded Case Circuit Breakers: Molded-case circuit breakers shall conform to NEMA AB 1 and UL 489 and UL 877 for circuit breakers and circuit breaker enclosures located in hazardous (classified) locations. Circuit breakers may be installed in panelboards, switchboards, enclosures, motor control centers, or combination motor controllers. The circuit breakers shall be manually-operated, shall be quick-make, quick-break, common trip type, and shall be of automatic-trip type unless otherwise specified or indicated on the drawings. All poles of each breaker shall be operated simultaneously by means of a common handle. The operating handles shall clearly indicate whether the breakers are in "On," "Off," or "Tripped" position and shall have provisions for padlocking in the "Off" position. Personnel safety line terminal shields shall be provided for each breaker. The circuit breakers shall be products of only one manufacturer, and shall be interchangeable when of the same frame size. Where specified, circuit breakers shall be provided with shunt trip devices. Where specified, circuit breakers shall be provided with bell alarm contacts that close on automatic operation only.

2.4 General Electrical: NFPA 70 and 70B.

3.0 EXECUTION:

3.1 Coordination: Contractor shall determine that the disconnecting device has been de-energized. Before de-energization, the Contractor shall ensure that equipment served by the disconnecting device will not be damaged by the power outage.

3.2 Clearances: Work clearances required by NFPA 70 shall be provided.



SECTION 16511 AUTOMATIC TRANSFER AND BY-PASS/ISOLATION SWITCHES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for automatic transfer and by-pass/isolation switches. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 AUTOMATIC TRANSFER SWITCH (ATS)

2.1.1 ATS shall be the electrically-operated type that is mechanically held in both operating positions. ATS shall be suitable for use in emergency systems or standby systems described in NFPA 70. ATS shall be UL listed unless the Contractor retains a nationally recognized independent testing laboratory to conduct tests, and test reports are approved as being equivalent of test results and certified test reports as those determined and reported by UL.

2.1.2 ATS shall also conform to NFPA 110 except that the ATS shall not be equipped with either overload or fault current protective devices. ATS shall be designed and manufactured to prevent stops in an intermediate or neutral position during transfer by the use of electrical actuators and stored-energy mechanisms. ATS designed and manufactured to effect transfers by a walking-beam or a similar device to engage handles of circuit breakers to accomplish transfer between power sources are unacceptable. Each pole of the doublethrow ATS shall have separate [arcing] contacts of a nonwelding type with switch contacts installed to permit viewing of the contacts without disassembly of the ATS or removal of the entire contact enclosure, or component parts of the ATS. ATS shall be rated for continuous duty at the continuous current rating specified. All rating data shall be shown on detail drawings, and shall equal or exceed those specified. The switches shall be fully compatible and approved for use with the BP/IS specified. Switches shall be adequately rated for the application indicated.

2.1.3 **Override Time Delay** Time delay to override monitored source deviation shall be adjustable from 0.5 to 6 seconds and factory set at 1 second. The device shall detect and respond to a sustained voltage drop of 30 percent of nominal voltage between any two of the normal or preferred supply conductors and initiate transfer action to the alternate/emergency source or start the engine-driven generator set after the set time period.

2.1.4 **Transfer Time Delay** Time delay before transfer to the alternate or emergency power source shall be adjustable from 0 to 5 minutes and factory set at 0 minutes. The device shall monitor the frequency and voltage of the alternate or emergency power source and transfer when frequency and voltage is stabilized at or above 90 percent of rated values. The pickup voltage shall be adjustable from 85 to 100 percent of nominal, and factory set at 90 percent. The pickup frequency shall be adjustable from 90 to 100 percent of nominal and factory set at 90 percent.

2.1.5 **Return Time Delay** Time delay before return transfer to the [normal] [preferred] power source shall be adjustable from 0 to 30 minutes and factory set at 30 minutes. The time delay shall be automatically defeated upon loss or sustained undervoltage of the alternate or emergency power source, provided that the supply has been restored.

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2.1.6 Auxiliary Contacts Two normally open and two normally closed auxiliary switches shall operate when the transfer switch is connected to the normal or preferred power source, and two normally open and two normally closed switches shall operate when the transfer switch is connected to the alternate or emergency power source.

2.1.7 Supplemental Features The ATS shall also be furnished with the following:

- a. Engine start contact.
- b. Alternate source monitor.
- c. Test switch.
- d. Close differential protection.
- e. Time delay by-pass switch.
- f. Manual return-to-normal switch.
- g. Motor starter control.

Undervoltage and timing relays, including any auxiliary relays required, shall be installed in the ATS enclosure to provide an adequate number and type of properly rated contacts to control the operation of remote motor controllers or starters shown. Devices and wiring in and external to the ATS shall cause motors to be de-energized for an adjustable period of time before the operation of the ATS in either direction and, subsequently, to cause motors connected to the ATS load bus to be energized.

2.1.8 Operator A manual operator, conforming to the applicable provisions of UL 1008, shall be provided to permit manual operation of the ATS without opening the ATS enclosure, and incorporate features to prevent operation by other than authorized and qualified personnel. The ATS shall be designed for use of the manual operator under no load conditions in the usual instances, but with the capability of operation under load conditions when necessary.

2.1.9 Green Indicating Lights A green indicating light shall supervise the normal or preferred power source and shall have a nameplate engraved NORMAL or PREFERRED.

2.1.10 Red Indicating Lights A red indicating light shall supervise the alternate or emergency power source and shall have a nameplate engraved ALTERNATE or EMERGENCY.

2.2 BY-PASS/ISOLATION SWITCH (BP/IS)

2.2.1 Design Switch shall permit load by-pass to either the normal/preferred or the alternate/emergency source of power and complete isolation of the associated ATS; independent of the operating position of the ATS. BP/IS shall not have overload or fault current protective devices. The BP/IS and the associated ATS shall be the products of the same manufacturer and shall be completely interconnected and tested at the factory and at the project site, as specified. The BP/IS shall be manufactured, listed and tested in accordance with paragraph AUTOMATIC TRANSFER SWITCH (ATS) and shall have electrical ratings that exceed or equal comparable ratings specified for the ATS. Switch design and construction shall prevent stops in an intermediate or neutral position during operations, but shall permit load by-pass and transfer switch isolation in no more than two manual operations which can be performed by one person in 5 seconds or less. The transfer speed shall be independent of the operation speed of the switch handles. The BP/IS operation shall be accomplished without disconnecting switch load terminal conductors. The isolation handle positions shall be marked with engraved plates, or other approved means, to indicate the position or operating condition of the associated ATS, as follows:

- a. Closed: The closed position shall indicate that the ATS is closed in one of the two operating positions.



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b. Test: The test position shall indicate that the functional operation of the transfer switch can be tested without service interruption. In the test position, and in the open position, the BP/IS shall be capable of functioning as a manual transfer switch to permit loads to be transferred to either power source.

c. Open: The open position shall indicate that the transfer switch is isolated from the load and both power sources, and can be removed from the enclosure if required for maintenance or repairs.

2.2.2 Switch Construction The BP/IS shall be constructed for convenient removal of parts from the front of the switch enclosure without requiring the removal of other parts or disconnection of external power conductors. Contacts of the BP/IS shall be as specified for the associated ATS, including provisions for inspection of contacts without disassembly of the BP/IS or removal of the entire contact enclosure. BP/IS shall be interconnected with suitably sized copper bus bars silver plated at each connection point, braced to withstand magnetic and thermal forces created at the withstand rating specified for the associated ATS. The BP/IS and the associated ATS shall be interconnected in the same manner.

2.3 Enclosure: ATS and BP/IS and accessories shall be in a wallmounted or free-standing, floor-mounted and ventilated NEMA ICS 6 , smooth sheet metal enclosure constructed in accordance with UL 1008 .

2.3.1 Construction Enclosure shall be constructed for convenient removal and replacement of contacts, coils, springs and control devices from the front without the disconnection of external power conductors or the removal or disassembly of major components. Enclosure housing an ATS and BP/IS shall be constructed to protect personnel from energized components of the BP/IS during maintenance of the ATS.

2.3.2 Finishing Painting required for surfaces not otherwise specified and finish painting of items only primed at the factory shall be as specified in paint section.

2.4 Testing:

2.4.1 Laboratory Testing Testing shall be completed on the ATS or BP/IS to be supplied under these specifications, or shall have been completed on a previous, randomly selected standard production ATS or BP/IS unit having the same model number and capacity as the ATS or BP/IS specified. Overload, endurance and temperature tests shall be conducted in that sequence and within the shortest practicable period of time on the same ATS or BP/IS without de-energization of that ATS or BP/IS under test. The test sequence for the ATS or BP/IS listed below shall be followed. No deviation will be granted that is less stringent. Approval will not be granted to deviate from the overload, endurance and temperature test sequence.

- a. General
- b. Normal Operation
- c. Overvoltage
- d. Undervoltage
- e. Overload
- f. Endurance
- g. Temperature rise
- h. Dielectric Voltage – Withstand
- i. Contact Opening
- j. Dielectric Voltage - Withstand (Repeated)
- k. Withstand
- l. Instrumentation and Calibration of High Capacity Circuits
- m. Closings
- n. Dielectric Voltage - Withstand (Repeated)
- o. Strength of Insulating Base and Support

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2.4.2 Factory Testing In addition to other factory tests, each completely assembled ATS and BP/IS unit shall be subjected to dielectric and operational tests.

2.4.2.1 Withstand Test in Excess of UL 1008 Requirements The ATS [and BP/IS] shall be tested and rated to withstand an available fault or short-circuit current of rated amperes, RMS symmetrical, at a power factor between 0.0 and approximately 0.20 for a duration of 10 cycles at a maximum rated voltage.

2.4.2.2 Dielectric Tests Tests shall be performed in accordance with NEMA ICS 1 . Wiring of each control panel shall be subjected to voltage surge tests as stipulated in IEEE ANSI/IEEE C37.90.1 . Impulse withstand rating tests shall be performed accordance with the requirements of NEMA ICS 1.

2.4.2.3 Operational Tests Tests shall be performed and shall demonstrate that the operational sequence of each ATS or BP/IS unit conforms to the requirements of the specifications with regard to operating transfer time, voltage, frequency, and timing intervals.

PART 3 EXECUTION

3.1 Installation: The ATS or BP/IS shall be installed as indicated and in accordance with approved manufacturer's instructions.

3.2 Operational Testing: Following completion of the installation of the ATS or BP/IS, the Contractor shall perform operational tests in accordance with the written instructions of the manufacturer after having made proper adjustments and settings to demonstrate that the ATS or BP/IS functions satisfactorily and as specified. The Contractor shall advise the Contracting Officer not less than 5 work days prior to the scheduled date or dates for operational testing, and shall provide certified field test reports to the Contracting Officer within 2 calendar weeks following successful completion of the operational tests. The test reports shall describe all adjustments and settings made and all operational tests performed.



SECTION 16513 MOTOR GENERATOR SETS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of motor generator sets. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Batteries: SAE J537 and UL 1236, and IEEE 484 and 485, as applicable.

2.2 Instrument Transformers: ANSI C12.11 and IEEE C57.13 for revenue metering.

2.3 Motor and Generator: Each generator shall be of the synchronous type, one or two bearing, conforming to NEMA MG 1, equipped with winding terminal housings in accordance with NEMA MG 1, equipped with an amortisseur winding, and directly connected to the engine. Insulation shall be Class F unless otherwise specified. Generator design shall protect against mechanical, electrical and thermal damage due to vibration, 25 percent overspeeds, or voltages and temperatures at a rated output capacity of 100 percent. Generator ancillary equipment shall meet the short circuit requirements of NEMA MG 1. Frames shall be the drip-proof type. A generator field discharge resistor shall be provided if required by the generator manufacturer.

2.3.1 Diesel Engines shall operate on No. 2-D diesel conforming to ASTM D 975. Engines shall be designed for stationary applications and shall be complete with ancillary equipment including cold weather equipment.. The engine shall be a standard production model described in the manufacturer's catalog. The engine shall be naturally aspirated, scavenged, supercharged or turbocharged. The engine shall be two- or four-stroke-cycle and compression-ignition type. The engine shall be vertical inline, V-, or opposed-piston type, with a solid cast block or individually cast cylinders. The engine shall have a minimum of two cylinders. Opposed-piston type engines shall have no less than four cylinders. Each block shall have a coolant drain port. Each engine shall be equipped with an overspeed sensor.

2.3.2 Fuel System The fuel system for each engine generator set shall conform to the requirements of NFPA 30 and NFPA 37 and contain the following elements.

2.4 Battery Charger: A current-limiting battery charger, conforming to UL 1236, shall be provided and shall automatically recharge the batteries within 24 hours.

2.5 Switchgear: NEMA SG 5. Switchgear ratings at 60 Hz shall be in accordance with ANSI C37.06. Solid-state, electromechanical, or microprocessor-based protective relays shall be as shown and shall be of a type specifically designed for use on power switchgear. Protective relays shall conform to IEEE ANSI/IEEE C37.90. Relays and auxiliaries shall suitable for operation with the instrument transformer ratios and connections provided.

2.6 Electrical Instruments: Analog electrical indicating instruments shall be true RMS indicating instruments, in accordance with ANSI C39.1. Electronic indicating instruments shall be true RMS indicating instruments, 100 percent solid state, state-of-the-art, microprocessor controlled to provide specified functions.

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3.0 EXECUTION:

3.1 Coordination and Scheduling: Outages shall be scheduled and coordinated in advance with the Contracting Officer.

3.2 Protection: Take precautions to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI C2.

3.3 Maintenance, Repair, or Replacement Work: The Contractor shall check the generator sets in accordance with the manufacturer's instructions and Mil. Std. MIL-STD-705, MIL-HDBK-705, IEEE-43, IEEE-115, and SSPC-PA-1. As a result of the testing or for preventive maintenance, the Contractor shall maintain, repair, or replace any piece of equipment requiring work.



SECTION 16600 LUMINAIRE BALLASTS AND TRANSFORMERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of luminaire ballasts and transformers. Products shall match existing materials and/or shall be directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Constant-Current Transformers shall be of the automatic, moving-coil types designed to maintain the secondary current within 1 percent of rating when operating under normal loading conditions. A protective relay that will automatically disconnect the transformer from the line on open series circuit shall be provided as an integral component of the transformer. Transformers shall be rated 10 kW, 2,400 volts, 60 hertz primary and 6.6 amperes secondary.

2.2 Fluorescent Ballasts:

2.2.1 Magnetic ballast, energy-saving, high power factor, Class P, automatic-resetting Type, approved for the application by the Certified Ballast Manufacturers: ANSI C82.1 and UL 935. Two-lamp ballasts shall be used for each pair of lamps within a fixture or within continuous mounted fixtures. Single-lamp ballasts shall be used for individually mounted single-lamp fixtures and where an odd single-lamp fixture occurs at the end of a continuous group.

2.2.2 Electronic ballasts shall consist of a rectifier, high frequency inverter, and power control and regulation circuitry. The ballasts shall be UL listed, Class P, with a Class A sound rating and shall contain no PCBs. Ballasts shall meet 47 CFR 18 for electromagnetic interference and shall not interfere with the operation of other electrical equipment. Design shall withstand line transients per IEEE C62.41, Category A. Unless otherwise indicated, the minimum number of ballasts shall be used to serve each individual fixture, using one, two, three or four lamp ballasts. A single ballast may be used to serve multiple fixtures if they are continuous mounted, factory manufactured for that installation with an integral wireway, and are identically controlled.

2.3 High-Intensity Discharge Ballasts shall be high-power factor, single lamp type. Ballasts shall be Type 2, weatherproof for outdoor use per ANSI C82.4 and UL 1029.

2.4 Lamp Ballasts: ANSI C82.1, C82.4, UL 935, and UL 1029 as applicable.

2.5 Series Isolation Transformers for airfield lighting systems shall be equal to the original transformers in accordance with Air Force Manual (AFM) 14, Part II, Visual Air Navigation Facilities.

2.6 Transformers, Regulators, and Reactors shall be in compliance with the requirements of NEMA/IEEE C57.

3.0 EXECUTION: Contractor shall comply with provisions of the National Electric Code.

3.1 Maintenance and Repair of Regulators shall include cleaning or replacement of dirty or burned contacts, replacement of worn or broken mechanical parts and electrical insulation, cleaning and tightening connections, replacement of leaking seals and gaskets, replacement of burnt oil, stopping of tank leaks,

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securing of loose or broken mounts, repair of shorted windings, and testing of regulator against varying loads and for shorts and high resistances.

3.2 Temporary Wiring Modifications shall be made in order that the lighting system shall remain in operating condition, except for the item being repaired or replaced, during normal lighting periods.

3.3 Outages: Service interruptions shall be scheduled in advance with the Contracting Officer.



SECTION 16610 LUMINAIRES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of luminaires. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Lamps: ANSI C78 series, C79 series.

2.1.1 High-Pressure Sodium Lamps shall conform to ANSI C78.1350, ANSI C78.1351, ANSI C78.1352, ANSI C78.1355. High-pressure sodium lamps shall be clear.

2.1.2 Mercury Vapor Lamps shall conform to ANSI C78.40.

2.1.3 Metal-Halide Lamps shall be made by a manufacturer with not less than 5 years experience in making metal-halide lamps. Metal-halide lamps shall conform to ANSI C78.1375 or ANSI C78.1376.

2.1.4 Lamps, Incandescent lamps shall conform to UL 1571 and shall be rated for 120 volt operation unless otherwise specified.

2.1.5 Lamps, Fluorescent lamps shall conform with ANSI C78.1 and shall have standard cool-white color characteristics and shall not require starter switches. The lamps shall be of the rapid-start type.

2.2 Fixtures: UL 781, UL 844, UL 595, UL 1570, UL 1571, and UL 1572.

2.2.1 Incandescent Fixture NEMA LE 4 for ceiling compatibility of recessed fixtures and UL 1571. UL 844 shall apply to hazardous areas.

2.2.2 Fluorescent NEMA LE 4 for ceiling compatibility of recessed fixtures and UL 1570.

2.2.3 High-Intensity-Discharge NEMA LE 4 for ceiling compatibility of recessed fixtures and UL 1572.

2.3 Lamp Bases and Holders: UL 496, 542, and ANSI C81 series.

2.4 Ballasts: UL 935, UL 1029, ANSI C82.4 and ANSI C82 series. Also See Section 16502.

2.5 General Electrical: NFPA 70.

2.6 All Luminaires shall be designated "IES distribution type" as referred to in the IES Lighting Handbook.

2.6.1 Luminaires shall be adjusted to achieve lighting levels and patterns specific to the application as recommended by the manufacturer. Each luminaire shall bear the UL label.

2.6.2 Only the Luminaire Being repaired or Replaced shall be disconnected from its source of supply during the normal operating hours of the lighting system.

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2.6.3 Luminaire Heads or Housings shall be die-cast aluminum with slip-fitter mounting and provided with 1-1/4 inch through 2-inch slip-fitter fittings. Luminaire heads shall have standard dimensions for interchangeable standard optical assemblies. Heads shall be internally wired and rated at 600 volts.

2.6.4 Enclosed Luminaire shall consist of an Alzak-finished aluminum reflector and enclosing refractor mounted on a standard luminaire head.

2.6.5 Open Luminaires shall consist of an Alzak-finished aluminum reflector with shielding reflector on house side providing IES Type I distribution, mounted on a standard luminaire head.

2.7 Incandescent Luminaires:

2.7.1 Luminaires Shall Be Enclosed Type for filament lamps with IES Type I distribution and shall have a glass refractor providing IES Type I distribution.

2.7.2 Floodlights Shall Be Enclosed Type with adjustable support brackets. Enclosed floodlights shall be Class HD having a beam spread of 10 to 18 degrees. Open type floodlights shall have a beam spread of 70 to 100 degrees.

2.8 Fluorescent Luminaires shall be the enclosed type.

2.9 High Intensity Discharge Luminaires shall be enclosed type for HID lamps with IES Type I distribution. Enclosed luminaires shall have an enclosing glass refractor providing IES Type I distribution.

3.0 EXECUTION:

3.1 Protection: Take precaution in accordance with ANSI C2.

3.2 All Service Interruptions shall be scheduled in advance with the Contracting Officer.

3.3 Workmanship: NFPA 70 and 70B.



SECTION 16616 STREET AND AREA LIGHTING CONTROLS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for street and area lighting controls. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Photocontrols shall be of the light-sensitive photo conductor cell type with integral line resistor and relay circuit having a line voltage circuit contact and capacitor and an across-the-line protective lightning arrester. Plug-in locking type shall be in compliance with UL 773. Photo-control devices shall conform to ANSI C136.10. Each photo-control element shall be a replaceable, weatherproof, plug-in or twist-lock assembly adjustable operation range of approximately 0.5 to 5.0 foot-candles. Luminaires shall be equipped with weatherproof plug-in or twist-lock receptacle to receive the photo-control element.

2.2 Replacement Relay for control of circuit shall match mounting, voltage, and wattage of existing relay.

2.3 Timer Control Switches Astronomic dial type arranged to turn "ON" at sunset, and turn "OFF" at a pre-determined time between 2030 hours 0230 hours or sunrise, automatically changing the settings each day in accordance with seasonal changes of sunset and sunrise shall be provided. A switch rated for similar voltage, having battery backed electronic clock to maintain accurate time for a minimum of 7 hours following a power failure shall be provided. A time switch with a manual on-off bypass switch shall be provided. Housing for the time switch shall be a surface mounted, NEMA 3R enclosure conforming to NEMA ICS 6.

3.0 EXECUTION:

3.1 Temporary Wiring Modifications shall be made in order that the lighting system shall remain in operating condition during normal lighting periods, except for the control unit being repaired or replaced.

3.2 Photocontrol, Timers, and Electronic Control Units shall be inspected for proper operation and repaired or replaced as required.

3.3 Safety: Contractor shall comply with applicable provisions of the National Electric Code.



SECTION 16660 CENTRAL MONITORING, CONTROL, AND INSTRUMENTATION

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of central monitoring, control, and instrumentation equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Drawings and Data: Drawings and data on existing monitoring control and instrumentation equipment should be requested from the Contracting Officer.

2.2 Sensing Elements or Transducers: Devices that sense the condition, state, or value of a process variable and produce an output that reflects that condition.

2.3 Measurement and Signal Conditioning: Devices that condition and transmit the signal generated by the sensing element and transducers.

2.4 Control Devices: Include any device that performs a definite function in control system, such as any switch (limit, pressure, temperature, on-off, etc), valves, solenoid, relays, and solid-state control elements.

2.5 Central Monitoring and Control Devices: Include any device that either monitors the signal generated by the transmitters or control devices (indicators, recorders, annunciators, etc.) or provides a final control action from the signal generated by the transmitter such as controllers, computers, etc.

2.6 Product Codes and Standards:

2.6.1 Safety Requirements for Electrical Measuring and Controlling: ANSI C39.5.

2.6.2 Industrial Control Equipment: ANSI/UL 508.

2.6.3 Electrical Analog Indicating Instruments: ANSI C39.1.

2.6.4 Instrument Transformers: ANSI C57.13.

2.6.5 Industrial Controls and Systems: NEMA ICS.

2.6.6 National Electrical Code: NFPA 70.

2.6.7 Electrical Equipment Maintenance: NFPA 70B.

2.6.8 Limit Controls: UL 353.

2.6.9 Test Code for Industrial Controls: IEEE 74.

2.6.10 Master Test Code for Resistance Measurement: IEEE 118.



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2.6.11 Master Test Code for Electrical Measurement in Power Circuits: IEEE 120.

2.6.12 Dynamic Response Testing of Process Control Instrumentation: ISA S26.

2.7 Intrusion detection: Units of the same type of equipment shall be products of a single manufacturer. All material and equipment shall be new and currently in production. Each major component of equipment shall have the manufacturer's model and serial number in a conspicuous place. System equipment shall conform to UL 294 and UL 1076.

2.7.1 System Components System components shall be designed for continuous operation. Electronic components shall be solid state type, mounted on printed circuit boards conforming to UL 796. Printed circuit board connectors shall be plug-in, quick-disconnect type. Power dissipating components shall incorporate safety margins of not less than 25 percent with respect to dissipation ratings, maximum voltages, and current carrying capacity. Control relays and similar switching devices shall be solid state type or sealed electro-mechanical.

3.0 EXECUTION:

3.1 Protection: Take precautions to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI/IEEE C2.

3.2 Power Supplies that may be a hazard during the performance of the work shall be locked out.

3.3 Testing: Check the operation of each instrument after it is returned to service. Adjust each instrument to operate properly over the design range.

3.4 Report: A final report shall be prepared after the maintenance, repair, or replacement has been accomplished. A list of all equipment worked on, the service performed on each piece of equipment, and calibration data shall be included in the report. The report shall be typed and furnished to the Contracting Officer.



SECTION 16680 AIRFIELD AND HELIPORT LIGHTING AND VISUAL NAVIGATION AIDS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of airfield and heliport lighting and visual navigation aids. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Beacons:

2.1.1 Airfield Rotating Beacon The rotating beacon for fixed wing aircraft shall be FAA AC 150/5345-12, Type L-802A, Class 1. A duplex type beacon with alternating green and white beams shall be provided. Beacons used on military airfields shall have a double-peaked white beam. Cabinet shall be provided with a NEMA ICS 6 type 3R enclosure of zinc-coated steel.

2.1.2 Heliport Beacon The heliport rotating beacon, shall be FAA AC 150/5345-12, Type L-801H, Class 2. Except for military facilities, the white beam shall be a double-peaked white flash. The beacon shall flash the three color sequence 10 to 15 times per minutes. The colors white, green, and yellow for a heliport or white, green, and red for a medical facility. The effective intensity of the white flash shall be not less than 25,000 candelas for vertical angles between 2 and 8 degrees and not less than 12,500 candelas between 0 and 10 degrees.

2.1.3 Airfield Identification/Code Beacon Fixture shall be in accordance with FAA AC 150/5345-43, Type L-866 with green filters and code flashing device. The beacon flashes shall be visible through 360 degrees. The effective intensity of the green flash shall be not less than 2,000 candelas. The code shall flash 6 to 8 codes per minute.

2.2 Wind Direction Indicator: The wind direction indicator shall be an FAA AC 150/5345-27, Type L-806, low mass supporting structure or L-807, rigid supporting structure, Style I-lighted, Size 1 - 8 feet.

2.3 Obstruction Lighting and Marking: Obstructions on or near the airfield or heliport shall be marked and/or lighted. Obstruction marker lights shall emit aviation red flashing and/or steady burning light as required. The light fixtures, shall be multiple-socket assembly or series socket assembly FAA AC 150/5345-43, Type L-810 or Type L-864. For multiple flashing lights on a circuit, the lights shall flash in unison. Obstruction marker lights shall be single or double unit type as specified. The obstruction lights shall be energized from series or multiple circuits as shown on the contract drawings or other contract documents.

2.4 High-Intensity Approach Lighting Systems:

2.4.1 Elevated High-Intensity Fixtures Except Flashing Units The elevated approach light fixtures shall be FAA E-982 frangible mounted lights with PAR-56 200 W, 300 W, or 500 W lamps as specified, and with aviation red and/or with aviation green filters as indicated. Elevated bi-directional threshold lights shall be FAA AC 150/5345-46, Type L-862 with aviation green filters on the approach side and aviation red filters on the runway side. The side row barrettes shall emit aviation red lights.



2.4.2 **Sequence Flashing Lights (SFL) System** The SFL system shall be FAA E-2159 and/or FAA AC 150/5345-51, Type L-849, or FAA E-2628 lights provided as an integrated part of the approach system. The SFL fixture shall include the elevated fixtures, the individual power supplies. The SFL shall flash twice per second in sequence towards the runway threshold.

2.4.3 **Semi-flush, High-Intensity Approach Lights** The approach lights in the overrun area, inner section of threshold bar, and paved areas with traffic, shall be semi-flush, high-intensity, base-mounted lights as shown. These semi-flush approach high-intensity fixtures shall be FAA AC 150/5345-46, Type L-850D for bi-directional or Type L-850E for unidirectional lights with lamps and filters.

2.5 Medium Intensity Approach Lighting:

2.5.1 **Elevated, Medium-Intensity, Steady-Burning Fixtures** The medium-intensity, elevated, steady-burning approach lights, shall be FAA E-2325 PAR 38 lamp holders with PAR-38 spotlight lamps frangibly mounted as directed.

2.5.2 **Sequence Flashing Lights (SFL) for Medium Intensity Lights** These elevated SFL fixtures (RAIL) shall meet the requirements of FAA E-2159 or FAA AC 150/5345-51, Type L-849 with eight lights shall be as indicated on the contract drawings as an integrated part of the approach system. The SFL shall flash twice per second in sequence towards the runway threshold.

2.6 **Runway Alignment Indicator Lights (RAIL):** The RAIL fixtures shall meet the requirements of FAA E-2159 or FAA AC 150/5345-51, Type L-849 with eight lights and shall include the individual power supplies.

2.7 **Omni-directional Approach Light System (ODALS):** The ODALS fixtures shall meet the requirements of FAA AC 150/5345-51, Type L-859 Style F. The ODALS shall include the 7 fixtures, the individual power supplies. The ODALS shall flash twice per second in sequence towards the runway threshold.

2.8 **Runway End Identifier Lights (REIL):** The REIL fixtures shall meet the requirements of FAA AC 150/5345-51, Type L-849, Style A, B or E. The REIL shall include the master and slave fixture, the power supply, and frangible mounts. The REIL units shall flash in unison twice per second.

2.9 **Runway Lighting System:** Runway lights include runway edge lights, runway threshold lights, runway centerline lights, runway touchdown zone lights, runway distance and arresting gear markers, mounting structures, controls, and the associated equipment and interconnecting wiring to provide complete systems as indicated and specified herein. In-pavement light fixtures shall be able to withstand a minimum static single wheel load of 50,000 pounds.

2.9.1 **Runway Edge Lights** The runway edge light fixtures shall meet the requirements of FAA AC 150/5345-46, Type L-862(elevated high-intensity), Type L-861(elevated medium-intensity, airfield and heliport), Type L-850C(semi-flush, high-intensity), or Type L-852E(semi-flush medium-intensity) white lights.

2.9.2 **Runway Threshold and End Lights** The threshold lights shall use aviation green filter and the end lights shall use aviation red filters. These lights shall be combined in a single bi-directional fixture with the appropriate color filters if so indicated. The runway threshold/end light fixtures shall meet the requirements of FAA AC 150/5345-46, Type L-862(elevated high-intensity, bi-directional), Type L-861 SE(elevated, medium-intensity, bi-directional), Type L-861(elevated, medium-intensity, omni-directional), Type L-852E(semi-flush, medium-intensity, omni-directional), Type L-850D(semi-flush, high-intensity, bi-directional), Type L-850C(semi-flush, high-intensity, unidirectional), FAA E-982 - PAR-56 (elevated unidirectional outboard of runway edges), or airfield and heliport lights as indicated on the contract drawings.

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2.9.3 Runway Centerline Lights, Tailhook Operations The fixtures shall be similar to FAA AC 150/5345-46 , Type L-852, and identified as Class N (Navy). The fixtures are available from Crouse Hinds Company, Cooper Industries. The fixtures shall be unidirectional, narrow beam, Type V, VI, VII, or VIII, with shorting device for failed lamp, modified to resist damage from aircraft tailhooks. The stainless steel top assembly shall have a Rockwell hardness of C40 plus or minus 5. Height of fixture shall be 1/2 inch above pavement in lieu of 3/8 inch. Optical assembly shall be secured with 410 or 416 stainless steel bolts.

2.9.4 Standard Duty Centerline Lights The fixtures shall be FAA AC 150/5345-46 , Type L-850A, Class 1 for inseting directly into pavement or Class 2 for installation on mounting bases. Filters shall be provided as indicated and conforming to requirements of fixture specifications.

2.9.5 Runway Touchdown Zone Lights The fixtures shall be FAA AC 150/5345-46 , Type L-850B.

2.9.6 Runway Distance Markers Runway distance markers shall conform to FAA AC 150/5345-44 , Type L-858B, Size 4, Style 3 with white or yellow numerals on a black background. Markers shall be provided, to withstand a static wind load of 0.28 pound per square inch, and suitable for connection to the secondary of the isolation transformers specified. Internally illuminated markers shall be provided with illumination of the face not less than 50 percent of that at rated current when the series lighting circuit is operated at the lowest brightness step. Marker housing shall be fiber reinforced epoxy, with information faces of high-impact acrylic or ultraviolet stabilized polycarbonate. The power supply and lamps shall be as indicated.

2.9.7 Arresting Gear Markers The arresting gear markers shall be the same as Runway Distance Markers, except markers shall have a 3.25 foot translucent yellow circle in place of numerals as specified above.

2.10 Taxiway Lighting Systems: Taxiway lighting systems shall include edge lights, centerline lights, guidance signs, and hold position lights and signs. These systems shall also include the associated equipment, power supplies and mounting devices to provide complete systems as specified.

2.10.1 Taxiway Edge Lights Taxiway edge light shall emit aviation blue light provided by filters or globes for both airfields and heliports. The edge lights shall meet the requirements of FAA AC 150/5345-46 , Type L-861(elevated), Type L-852E(semi-flush) lights.

2.10.2 Taxiway Centerline Lights Taxiway centerline lights shall be semi-flush fixtures using filters to provide aviation green light. These centerline light fixtures shall meet the requirements of FAA AC 150/5345-46 , Type L-852A(on straight sections) and Type L-852B(on curved sections).

2.10.3 Taxiway Guidance Signs The taxiway guidance signs shall meet the requirements of FAA AC 150/5345-44 , Type L-858Y(for information) and Type L-858R(for mandatory signs). The size and information on the signs shall be as shown on contract drawings.

2.10.4 Hold Position Lights and Signs The hold positions shall be marked by painted lines, lights and/or signs as specified. The lights shall meet the requirements of FAA AC 150/5345-46 , Type L-852A, semi-flush, unidirectional, with aviation yellow filter toward the taxiway approach to the runway. In some confusing locations FAA AC 150/5345-46 , Type L-804, elevated flashing lights may be required. Hold position signs shall meet the requirements of FAA AC 150/5345-44 , Type L-858R, with the size and information as indicated on the contract drawings.

2.11 Hoverlane Lights: The hoverlane lights shall be alternating aviation green and aviation yellow lights along the centerline of the hoverlane path. The fixtures shall be FAA AC 150/5345-46 , Type L-861, for elevated lights with alternating yellow and green globes as required or indicated on the contract drawings.



These lights shall be frangibly mounted on stakes or light bases. For hoverlanes across paved areas, the fixtures shall be FAA AC 150/5345-46, Type L-852E mounted on FAA AC 150/5345-42, Type L858 light bases. The hoverlane lights shall be energized from a power source as indicated on the contract drawings. The isolation transformers for series circuits shall be FAA AC 150/5345-47, Type L-830-1.

2.12 Explosion-Proof Fixtures for Hazardous Locations: Fixtures to be installed in explosive hazardous locations shall meet the requirements of and be listed by UL Eleconst Dir or FM P7825a, FM P7825b as defined in NFPA 70 for the hazard and application.

2.13 Glide Slope Indicator: The glide slope indicator for airfields shall be the Precision Approach Slope Indicator (PAPI). For the heliports the glide slope indicator unit shall be the PAPI or the CHAPI.

2.13.1 PAPI The light units for the PAPI shall meet the requirements of FAA AC 150/5345-28, Type L-880 or FAA E-2756. The system consists of four light units.

2.13.2 CHAPI The light units for the CHAPI systems for heliport glide slope indicators, if required, shall consist of two units which meet the basic requirements of FAA AC 150/5345-28, Type L-880, except the on-glide-slope indication has been replaced by a two degree wide green lens.

2.14 Limit Lights: The fixtures for limit lights shall be FAA AC 150/5345-46, Type L-861 with red globes and 45-watt lamps. These lights shall be frangibly mounted on steel stakes or light bases if in paved areas.

3.0 EXECUTION:

3.1 General Airport lighting and Navigational aids shall be installed in accordance with the manufacturer's instructions and other contract requirements and shall include cleaning, lubrication, adjustment, alignment and other special instructions. Supports shall be provided as indicated.

3.1.1 Holes for Light Fixtures Holes shall be bored in existing pavement to the dimensions indicated with a diamond-edged bit to provide a smooth, straight cut. Bottom of hole shall be flat or slightly concave, except that an area at least 1 inch wide around the perimeter shall be flat. Surfaces deeper than the prescribed depth shall be filled with sealant to the level of the flat area and allowed to cure before further placement.

3.1.2 Immediately prior to installation of wire or light fixtures, saw kerfs and holes shall be flushed with a high velocity water jet or steam, and then cleaned and dried with a high velocity air jet to remove dirt, water, and foreign material.

3.1.3 Lighting Fixture Installation: Sides and bottom of each light base shall be sandblasted immediately prior to installation. Inside faces of bored hole and bottom and sides of light base shall be covered with a coating of sealant that will completely fill the void between concrete and base. A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixture shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. Outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set. Fixture lead wires shall be properly arranged with respect to their connecting position. The wireway entrance into the light recess shall be blocked to retain the sealant material during curing.

3.1.4 Fixture Grounding Each fixture or group of adjacent fixtures shall be grounded by a grounding circuit separate from the counterpoise system unless required otherwise or by driven ground rods if permitted. Fixtures, steel light bases or grounding bushings on steel conduits shall be connected to an

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independent ground rod by a No. 6 AWG bare stranded copper wire. Semi-flush fixtures for direct mounting in pavement need not be grounded. Copper wire shall be connected to ground rods by exothermic weld or brazing.

3.1.5 Obstruction Marker Lights Obstruction marker lights shall be installed on radio towers, elevated water tanks, smokestacks, buildings, and similar structures with 1 inch zinc-coated rigid steel conduit stems using standard tees and elbows, except that lowering devices, when required, shall be installed in accordance with equipment manufacturer's recommendations.



SECTION 16814 TELEPHONE SYSTEM, OUTSIDE PLANT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for new and/or repair and maintenance of telephone system, outside plant. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS

2.1 Cable:

2.1.1 Copper Conductor Cable shall conform to the following: RUS REA PE-89 or ICEA ANSI/ICEA S-85-625.

2.1.2 Direct Buried Cable shall be manufactured per RUS REA PE-89 or RUS REA Bulletin 345-39.

2.1.3 Underground Cable shall be manufactured per RUS REA PE-39 or RUS REA PE-89.

2.1.4 Screened cable shall comply with RUS REA PE-39 or RUS REA PE-89.

2.1.5 Fiber Optic Cable Reeled fiber optic cable shall be specifically designed for outside use, be filled or loose buffer construction, and conform to RUS REA Bulletin 345-90.

2.2 Conductor Closures:

2.2.1 Copper Conductor Closures

2.2.1.1 Aerial Closure The aerial closure shall be free breathing and suitable for housing straight and butt splices. The closure shall be constructed with ultraviolet resistant PVC.

2.2.1.2 Buried Closure shall conform to RUS REA Bulletin 345-72.

2.2.2 Fiber Optic Closures

2.2.2.1 Fiber Optic Aerial The aerial closure shall be free breathing and suitable for housing a splice organizer of non-pressurized communications cables. The closure shall be constructed with ultraviolet resistant PVC.

2.2.2.2 Fiber Optic Buried or Underground The buried closure shall be suitable for enclosing a splice organizer in a container into which can be poured an encapsulating compound. The closure shall protect the splice and be suitable for use in the buried environment. The encapsulating compound shall be re-entenable and shall not alter the chemical stability of the closure.

2.3 Cable Splices and Organizers: The connectors used shall be listed in RUS REA Bulletin 1755I-100.

2.4 Cable Terminals:

2.4.1 Pedestal-Type Cable Terminals Pedestal-type cable terminals shall conform to RUS Bulletin 1755.910.

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2.4.2 **Cross-connect Cable Terminals** Cross-connect cable terminals shall be weatherproofed for outdoor use and suitable for pole, pad, or stake mounting. The terminal shall be equipped with mounting columns and distribution rings for jumper-wire routing. The terminal shall be of aluminum or steel construction and ribbed for strength.

2.5 **Manhole and Duct:** shall conform to RUS REA TE&CM 643-02.

2.6 **Equipment Racks:** Distribution frames, cabinets, and back-boards shall be provided as shown and designed to mount connector blocks, protector blocks, cross connects, and other hardware required to terminate and protect the outside telephone plant cable; to provide a demarcation point between inside and outside plant cable; and to allow inside and outside plant cable to be cross connected.

2.7 **Connector Blocks:** The connector blocks shall be 24 gauge stub type. The cable stubs shall be 100 pair and conform to RUS REA PE-87.

2.8 **Protector Modules:** The protector modules shall be of the two-element gas tube type. Protection modules shall be heavy duty, $A > 10 \text{ kA}$, $B > 400$, $C > 65 \text{ A}$, where A is the maximum single impulse discharge current, B is the impulse life and C is the AC discharge current per ANSI C62.61. The gas modules shall shunt high voltage to ground, fail short, be equipped with an external spark gap and heat coils, and shall comply with UL 497.

2.9 **Fiber-Optic Cable:** Fiber Optic Connectors All outside plant fiber strands shall be terminated in a SC or ST type fiber optic connector, with ceramic ferrule material and a maximum insertion loss of 0.5 dB. Connectors shall meet performance standards of EIA ANSI/TIA/EIA-568A.

2.10 **Warning Tape** Marking and locating tape shall be acid and alkali resistant polyethylene film, 6 inches wide designed for this purpose. The tape shall be manufactured with integral wires, foil backing, or other means to enable detection by a metal detector. The warning tape shall be orange in color and continuously imprinted with the words "WARNING - COMMUNICATIONS CABLE BELOW".

3.0 EXECUTION

3.1 **Installation:** All installation work shall be done in accordance with the safety requirements set forth in the general requirements of IEEE C2 and NFPA 70.

3.1.1 **Cable Inspection and Repair** All cable and wire used in the construction of the project shall be handled with care. Each reel shall be inspected for cuts, nicks or other damage. All damage shall be repaired to the satisfaction of the Contracting Officer. The reel wrap shall remain intact on the reel until the cable or wire is ready to be placed.

3.1.2 **Buried Cable** Buried cable installation shall be accomplished in accordance with RUS REA Bulletin 1751F-641.

3.1.2.1 **Cable Depth** Cables placed in soil shall be at a minimum depth of 24 inches. Cables placed at ditch crossings shall be at a minimum depth of 36 inches. A plastic warning tape shall be placed above the cable at approximately 18 inches below ground level. Cables placed in rock shall be at a minimum depth of 6 inches.

3.1.2.2 **Above Ground Cable Protection** Cable installed on the outside of buildings, less than 8 feet above finished grade, shall be protected against physical damage.



3.1.2.3 Telephone Cable Bends Telephone cable bends shall have a radius of not less than 10 times the cable diameter.

3.1.2.4 Penetrations in walls, ceilings or other parts of the building, made to provide for cable access, shall be caulked and sealed. Where conduits and ducts pass through fire walls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials. Fire stopped penetrations shall not compromise the fire rating of the walls or floors. All underground building entries shall be through waterproof facilities.

3.1.2.5 Cable Protection Unless otherwise shown or specified, direct buried cable shall be protected in accordance with Table 300.5 of NFPA 70. Where additional protection is required, cable may be placed in galvanized iron pipe (GIP) sized on a maximum fill of 40% of cross-sectional area, or in concrete encased 4 inch PVC pipe. Conduits shall extend at least 6 inches per 12 inches burial depth beyond the edge of the surface where cable protection is required; all conduits shall be sealed on each end. Conduit may be installed by jacking or trenching.

3.1.2.6 Backfill for Rocky Soil When placing cable in a trench in rocky soil, the cable shall be cushioned by a fill of sand or selected soil at least 2 inches thick on the floor of the trench before placing the cable or wire. The backfill for at least 4 inches above the wire or cable shall be free from stones, rocks, or other hard or sharp materials which might damage the cable or wire. If the buried cable is placed less than 24 inches in depth, a protective cover of metal or concrete shall be used.

3.1.3 Underground Cable Underground cable installation shall be accomplished in accordance with the requirements set forth in RUS REA Bulletin 1751F-641.

3.1.4 Aerial Cable Aerial cable installation shall be accomplished in accordance with the requirements set forth in RUS REA TE&CM 635-03.

3.1.5 Surge Protection Except for fiber optic cable, all cables and conductors, which serve as communication lines, shall have surge protection meeting the requirements of RUS REA PE-60 installed at the entry facility.

3.2 Conductor Splicing:

3.2.1 Copper Conductor Splices Copper conductor cable splicing shall be accomplished in accordance with RUS Bulletin 1753F-401(PC-2). Modular splicing shall be used on all cables larger than 25 pairs.

3.2.2 Fiber Optic Splices Fiber optic splicing shall be in accordance with the manufacturer's recommendation; each splice shall have a loss of less than 0.1 dB.

3.3 Grounding: shall be in accordance with requirements of NFPA 70, Articles 800-33 and 800-40.

3.3.1 Ground Bars

3.3.1.1 Telecommunications Master Ground Bar (TMGB) A copper TMGB shall be provided, in accordance with EIA ANSI/TIA/EIA-607, to be the hub of the basic grounding system by providing a common point of connection for ground from outside cable, MDF, and equipment. The TMGB shall have a ground resistance, including ground, of 10 ohms or less.

3.3.1.2 Telecommunications Ground Bar (TGB) Copper TGB shall be provided in accordance with EIA ANSI/TIA/EIA-607 in each communications closet and room and each frame. The TGB shall be connected to the TMGB in accordance with EIA ANSI/TIA/EIA-607. Each TGB shall be connected to the

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TMGB by the most direct route utilizing a copper wire conductor with a total resistance of less than 0.01 ohms.

3.3.2 Incoming Outside Plant Cables All incoming outside plant cable shields shall be bonded directly to the TMGB or the closest TGB.

3.3.3 Cable Stubs All shields of cable stubs shall be bonded to a TGB located on the frame.

3.3.4 Shields The shields of all incoming cables shall not be bonded across the splice to the cable stubs.

3.3.5 Protection Assemblies The protector assemblies shall be mounted directly on the vertical frame ironwork. The assemblies mounted on each vertical frame shall be connected with a No. 6 AWG copper conductor to provide a low resistance path to the TGB.

3.3.6 Manholes The shields of all cables in each manhole shall be bonded together by a bonding wire or ribbon. At intermediate manholes, where the cable is pulled through without a sheath opening, bonds are not required. If the manhole has a lacerating bonding ribbon, the shields of spliced cables shall be attached to it.

3.4 Acceptance Tests: The Contractor shall provide all personnel, equipment, instrumentation, and supplies necessary to perform all required testing. Notification of any planned testing shall be given to the Contracting Officer at least 14 days prior to any test; testing shall not proceed until after the Contractor has received written Contracting Officer's approval.

3.4.1 Copper Conductor Cable The following acceptance tests shall be performed in accordance with RUS REA PC-4:

- a. Shield continuity.
- b. Conductor continuity.
- c. Conductor insulation resistance.
- d. Structural return loss.
- e. Cable insertion loss and loss margin at carrier frequencies.
- f. Shield ground for single jacketed cables.
- g. DC loop resistance.

3.4.2 Fiber Optic Cable

3.4.2.1 Optical Time Domain Reflectometry (OTDR) Test The OTDR test shall be conducted in accordance with EIA ANSI/EIA-455-81A for single-mode fiber and EIA ANSI/EIA/TIA-455-78A for multi-mode fiber. Splice losses shall not exceed 0.1db. Attenuation losses shall not exceed 0.5 db/km at 1310 nm and 1550 nm for single-mode fiber. Attenuation losses shall not exceed 5.0 db/km at 850 nm and 1.5 db/km at 1300 nm for multi-mode fiber.

3.4.2.2 Attenuation Test The measurement method shall be in accordance with EIA ANSI/EIA/TIA-455-53A.

3.4.2.3 Bandwidth Test The bandwidth measurements shall be in accordance with EIA ANSI/EIA/TIA-455-30B.



SECTION 16820 CATHODIC PROTECTION SYSTEM FOR UNDERGROUND UTILITIES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of cathodic protection systems for underground utilities. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Contractor's Qualification: A qualified person, such as a NACE-accredited Corrosion Specialist or a Senior Corrosion Technologist, is required to perform or supervise the inspection of the cathodic protection system. The contractors making the repair and installation of new equipment, materials, or components shall be under the direct supervision of a NACE accredited Corrosion Specialist or a Senior Corrosion Technologist.

2.2 Standard Products: Materials and equipment to be used in the repair or replacement of a cathodic protection system shall be a product of a manufacturer regularly engaged in the manufacture of the product, shall meet the NACE requirements, and shall essentially duplicate materials and equipment that have been in satisfactory use at least two years.

3.0 EXECUTION:

3.1 Inspection: A complete inspection of the system shall be made in compliance with NACE RP0169. All findings shall be made in the form of a written report as directed by the Contracting Officer.

3.1.1 Sacrificial (Galvanic) Anode System: Inspect foreign or neighboring structures to determine if a structure is being made more positive by the cathodic protection system. When structure-to-soil (electrolyte) potentials indicate that a neighboring structure is being made more positive, bonding shall be required to avoid damage.

3.1.2 Impressed Current (Rectifier Ground Bed) System:

3.1.2.1 Component Inspection: Make inspection of the individual components to ensure that all parts are operating properly. The inspection shall include, but not be limited to, checking unevenness of the temperature or the stacks, hot or warm joints or contacts, arc burn paths, discolored insulators, watt-hour meter for creep, poor insulation, faulty lightning arresters, fuses, and cleanliness of the rectifier stack.

3.1.2.2 Stack Tests: Inspect the semi-conductor stacks to ensure that they are functioning properly and have not exceeded their useful life. The two quantities that shall be measured are reverse current leakage and forward voltage drop. When either of these values increase beyond limits set by the components manufacturer, replace the stack.

3.1.2.3 Interference Tests: Inspect foreign or neighboring structures to determine if a structure is being made more positive by the cathodic protection system. When structure-to-soil potentials indicate that a neighboring structure is being made more positive, the Contractor must make recommendations in report to avoid damage.

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3.2 Maintenance and Repair: After the installation of anodes, the Contractor shall inspect the system and reinspect it again 2 to 4 weeks later. In the event that the system, when repaired, will not provide the required protection, as evidenced by the final tests and measurements, the Contractor, together with the Contracting Officer, shall determine the cause of the deficiency and the corrective measures necessary. After the necessary corrective measures have been determined, the contract may be modified as required. All repair or replacement material/equipment shall be NACE approved and similar to original materials. Installation shall be in compliance with the recommendations of the manufacturers as approved by the Contracting Officer to comply with the contract documents. Replacement materials that are installed shall comply with the applicable portions of NACE RP0169.

3.2.1 Sacrificial (Galvanic) Anode System:

3.2.1.1 General: Replacing anodes includes boring the hole or trenching, installing the anode, welding or splicing the electrical lead, adjusting the output, and installing test stations. Replacement of anodes shall comply with installation procedures found in NACE RP0169.

3.2.1.2 Anode Output Adjustment: If required, install a resistor or resistance wire to prevent the anode from delivering excess current. The resistance wire, if used, shall be a nichrome wire, No. 16 or 22 AWG with type TW insulation.

3.2.1.3 Placing the System into Service: Upon completion of all phases of the cathodic protection system, it shall be checked and adjusted for optimum performance before placing in regular service.

3.2.2 Impressed Current (Rectifier Ground Bed) Systems:

3.2.2.1 General: Replacing anodes includes boring the hole or trenching, installing the anode, welding or splicing the electrical lead, adjusting the output, and installing test stations. Replacement of anodes shall comply with installation procedures in NACE RP0169.

3.2.2.2 Installation: Install anodes similarly to the anodes in the initial installation. Replacement anodes are normally installed in auger-bored holes drilled adjacent to the damaged or deteriorated anode. Install anodes below the center line of the protected structure. Anodes may be installed horizontally if obstructions are encountered. Backfill material shall consist of coke breeze compacted in 6-inch layers. Foreign material shall be excluded from the backfill.

3.2.2.3 Electrical Splices and Connections: Negative cable connections shall be thermit-welded in compliance with the weld manufacturer's instruction. Cover the connection with an approved backfill shield placed over the weld connection. The shields shall be sized to cover the exposed metal.

3.2.2.4 Placing the System into Service: Upon completion of all phases of the cathodic protection system, it shall be checked and adjusted for optimum performance before placing in regular service.

3.2.2.5 Interference Testing: Make interference testing on all structures installed under this contract to locate damage being caused by existing or new impressed current cathodic protection systems or other sources of interference. It shall be the Contractor's responsibility to correct all interferences.

3.3 Maintenance and Operating Instructions: The Contractor shall contribute technical data to the cathodic protection records file maintained by the installation. These technical records shall include such items as manufacturers' data on installed equipment, operating instructions, lists of repair parts, names and addresses or sources of parts and services, current price lists, repair and maintenance instructions, construction specifications and shop drawings, and as-built drawings of the system.



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3.3.1 Consolidation of Records: The Contractor shall consolidate all cathodic protection records including surveys, inspections, operating data, maps, charts, location of leaks (leak maps), and manufacturers' parts manual.

3.3.2 Updating Records: Update existing cathodic protection location maps to show any changes in location or addition of test points or stations, anodes, wiring, etc.

3.3.3 Manuals: When the system has been modified or new components have been added, the Contractor shall prepare and furnish the Contracting Officer six copies of operation and maintenance manuals of the cathodic protection system for guidance of using agency personnel. Prepare manual with contents as determined by the Contracting Officer.



SECTION 16821 CATHODIC PROTECTION OF STEEL WATER TANKS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for the repair and maintenance of cathodic protection of steel water tanks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Contractor's Qualification: A qualification such as NACE accredited corrosion specialist or a Senior Corrosion Technologist is required to perform or to supervise the inspection of the cathodic protection system. The contractor making the repair and installing new equipment, materials, or components shall be under the direct supervision of a NACE accredited corrosion specialist or a Senior Corrosion Technologist.

2.2 Approval: All repair or replacement material and equipment shall be NACE approved.

3.0 EXECUTION:

3.1 Inspection: The inspection of the cathodic protection system shall be made in compliance with applicable NACE standards. The inspection shall include a potential profile of the submerged structures together with visual and electrical tests.

3.1.1 Tank-to-Water Potential Tests: Adjust the rectifier voltage or amperage so as to satisfy design current densities or specified voltage. Document readings, and note any reading below -0.85 volts versus the copper-copper sulfate half-cell or silver-silver chloride half-cell (using conversion chart). Successive potential readings shall be made with the tank full of water and the reference electrode placed at various depths, starting at 1 foot below the surface of the water and continuing at 3-foot intervals to the bottom of the tank. (A vertical inspection profile shall be taken along the wall between each anode string.) The tank bottom shall also be traversed equidistant from all distributed anodes. Inspect risers by placing reference electrode along the side wall of the riser and measuring at 3-foot intervals as far as possible.

3.1.2 Polarization of the submerged steel surfaces to a tank-to-water potential shall be at least a negative 0.85 volts.

3.1.3 Voltage Measurements Between Tank and Electrode: When inspecting new well-coated tanks, the voltage measured between the tank and reference electrode that is placed at any point along the coated surface shall not exceed negative 1.2 volts.

3.1.4 The Rectifier shall be free from any restriction that inhibits free air circulation. Keep air-cooled rectifiers free from dust accumulation, clogged filters or screens, brush, grass, or nests. Fill oil-cooled rectifiers to the proper level, and change the oil when it becomes cloudy. Dispose of oil that is removed as directed by the Contracting Officer.

3.1.4.1 Output Measurement: Measure and record the current and voltage output. Compare the readings obtained against the previous readings.



3.1.4.2 Stack Tests: Inspect the semi-conductor stacks to ensure that they are functioning properly and have not exceeded their useful life. The two quantities that shall be measured are reverse current leakage and forward voltage drop. When either of these values increase beyond limits set by the components manufacturer, replace the stack.

3.1.4.3 Meter Tests: Check the meters in the rectifier for accuracy by using portable instruments (voltmeter and ammeter) of known accuracy.

3.1.5 Visual Inspection of the water tank shall be conducted while the Contractor is inspecting the anodes and wiring. At the direction of the Contracting Officer, lower the water level to expose as much of the wiring as practical to inspect for deteriorated insulation, faulty connections, etc. Inspect the interior surface for condition of coating and apparent ruse or calcareous build up. In systems using permanent anodes, determine if the anode shall last until the next inspection. Record broken, damaged, and missing anodes. Inspect wiring to the anodes. Replace wire that has deteriorated insulation.

3.1.6 Reference Electrodes and Connecting Wires shall be inspected by the Contractor to determine whether they are capable of operation until the next annual inspection.

3.1.7 Reports: Record and submit all data. Corrosion control records shall follow recommendations found in NACE RP0169.

3.2 Maintenance and Repair:

3.2.1 Compliance: The maintenance, repair, and installation of replacement materials shall be in compliance with accepted NACE practices. Install all materials and equipment in compliance with the recommendations of NACE or the manufacturer or to comply with the contract documents. Contractor shall replace all broken, missing, deteriorated, or otherwise unserviceable components determined during inspection.

3.2.2 Workmanship: The maintenance, repair, and installation of repair materials shall be under the supervision of the Contractor's NACE Accredited Corrosion Specialist or Senior Corrosion Technologist. Installation shall be performed by personnel who are specifically trained in this work by the manufacturer and who are engaged full time in the installation and servicing of cathode protection equipment. Electrical work shall be in compliance with the requirements of the National Electrical Code.

3.2.3 Testing Methods: Upon completion of repair, the Contractor shall test, adjust, and place in service the cathodic protection system by the following methods:

3.2.3.1 Testing: Adjust the voltage of the rectifier so as to cause a sufficient current to flow to polarize all parts of the structure to at least -0.85 volts. With a given amount of current flowing, voltage measurement shall be made from the tank to a copper-sulfate reference electrode in contact with the water. Successive potential readings shall be made with a calibrated voltmeter, with the tank full of water and the reference electrode placed at various depths starting at 1 foot below the surface of the water and continuing at 3-foot intervals to the bottom of the tank. The tank bottom shall also be traversed and readings taken every 3 feet in a single horizontal direction. In making these tests, place the reference electrode midway between two tank anodes and suspend close to, but not touching, the side or bottom of the tank. The distance between the reference electrode and the wall shall not exceed 1 inch for all readings. If any parts of the structure register voltages more negative than minus 1.2 volts, note this in a deficiency checklist.

3.2.3.2 Rectifier Adjustment: Final adjustment of the rectifier output current shall be made so that repeated voltage readings taken as specified above for testing fall between the limits of minus 0.75 to minus 1.2 volts when measured against the reference electrode.

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3.2.3.3 Signs: The Contractor shall paint or stencil his name, date of inspection of the system, and due date of next inspection at a place on site designated by the Contracting Officer.

3.2.3.4 Reports: After final adjustment, place the cathodic protection system in service, record the conditions of the system as left by the Contractor, and submit the report to the Contracting Officer.

3.3 Operating and Maintenance Instructions: The Contractor shall contribute technical data to the cathodic protection records file maintained by the installation. These technical records shall include such items as: manufacturer's data on installed equipment, operating instructions, lists of repair parts, names and addresses of sources of parts and services, current price lists, repair and maintenance instructions, and construction specifications and shop drawings. When the system has been modified or new components have been added, the Contractor shall prepare and furnish the Contracting Officer two complete sets of typewritten or printed instructions covering the maintenance and operation of the installation. The instructions shall cover proper adjustment of the direct current flow, a brief description of cathodic protection principles, a single line operating diagram, anode consideration with reference to local freezing conditions, trouble-shooting checklists, and any other pertinent information concerned with the proper care and maintenance of the installation.



SECTION 16825 FIRE ALARM AND DETECTION EQUIPMENT

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of fire alarm and detection equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Control Unit and Annunciator: FM Approval Guide, UL 864.

2.2 Lamps shall be long-life neon.

2.3 Contacts shall be rated 5 amperes, 120 volts.

2.4 Power Supply shall be solid-state, UL 864 for dc systems, FMS for ac systems. No attempt to repair solid-state components shall be made.

2.5 Heat Detectors:

2.5.1 Fixed Temperature, Self-Restoring Heat Detector shall have bimetallic element to close electrical contacts when heated.

2.5.2 Combination Fixed Temperature and Rate-of-Rise, Self-Restoring Heat Detector shall have both a bimetallic element to close electrical contacts and a rate-of-rise element with an air chamber, a flexible metal diaphragm, and a moisture-proof vent. Rate-of-rise element shall be independent of fixed temperature action and shall respond when the rate of temperature rise exceeds 15 F per minute.

2.5.3 Fixed Temperature Rate Compensated Heat Detectors shall have an expansible outer shell sensitive to surrounding air temperature, which compensates for thermal lag of external temperature.

2.5.4 Fixed Temperature, Nonrestorable Heat Detector shall have phosphor bronze spring held under tension by a fusible link to hold open contacts. Indicator hole shall appear in the detector chamber seal to indicate the fired detector.

2.5.5 Combination Fixed Temperature and Rate-of-Rise, Nonrestorable Heat Detector shall have a phosphor bronze spring held under tension by a fusible link to hold open contacts and a rate-of-rise element with an air chamber, a flexible metal diaphragm, and a moisture-proof vent. Rate-of-rise element shall be independent of fixed temperature action and shall respond when the rate of temperature rise exceeds 15 F per minute.

2.6 Flame Detector shall consist of a silicon photo-electric cell located behind a convex, infrared filter lens. Time delays to prevent false actuation shall be three seconds, ten seconds, or thirty seconds.

2.7 Fire Alarm Transmitters and Receivers:

2.7.1 Emergency Power Supply shall be a completely automatic unit consisting of batteries, battery charging unit to automatically maintain the batteries, and an inverter to change dc battery power to 120 volt, 60 hertz ac power.

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2.7.2 Control Relays: Replacement relays shall be totally enclosed with heat and shock-resistant dust covers.

2.7.3 Trouble Buzzer shall be integrally mounted in the control unit.

2.8 Single Station Smoke Detectors (Self-Contained):

2.8.1 Detector Base shall be plug-in type plastic base.

2.8.2 Detectors shall be self-contained control unit that accepts either ionization, photo-electric, or flame detectors. Ionization detectors shall be of the dual chamber type. Ionization detectors shall comply with UL 268 and UL 217. Photo-electric detectors shall comply with UL 268.

2.9 Duct Smoke Detectors shall be either ionization type or photo-electric type. Ionization detector shall be of the dual chamber type. Ionization detectors shall comply with UL 268 and photo-electric detectors shall comply with UL 268.

2.10 Interlocks:

2.10.1 Contact Rating: At 277 volts, contacts shall be rated 15 amperes at 75 percent power factor.

2.10.2 Horsepower Rating: Contacts shall be rated for 1-1/2 horsepower at 230 volts.

2.10.3 Contact Voltage: Minimum contact voltage rating shall be 277 volts.

2.10.4 Coil Voltage shall be selected to suit voltage of system.

2.11 Batteries: ULC listed.

2.12 End-of-Line Resistors, Balancing Resistors, and Diodes: Compatible with system installed.

2.13 Manual Stations: UL 38, flush or semi-flush mounted, pull-lever type.

2.14 Wiring: NFPA 72A and 72D.

2.15 Audible Alarms: UL listed for fire protection service, UL 464/486N.

3.0 EXECUTION:

3.1 Coordination: Prior to commencement of work in any facility having any form of fixed fire protection, contact the fire department. Contractor shall determine that disconnection of equipment will not create a false alarm.

3.2 Workmanship: NFPA 70, 72A, 72D, and 72E.

3.3 Defective Ionization Detectors that are replaced shall be returned to manufacturer for proper disposal.



SECTION 16830 ELECTRIC UNIT HEATERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of electrical unit heaters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Heating Element shall have nickel-chromium wire packed in high purity magnesium oxide enclosed in a corrosion-resistant sheath. The embedded sheath shall be the manufacturer's standard design.

2.2 Housing shall be fabricated from sheet steel complying with ASTM A 569. The housing shall be provided with means for suspension. Deflector blades shall be constructed of same material as housing and shall be manufacturer's standard design and operation.

2.3 Fan shall be the propeller type fabricated of aluminum or steel.

2.4 Controls:

2.4.1 Thermal Overload Cutout of the Manual Reset Type shall be provided to disconnect elements in the event normal operating temperatures are exceeded.

2.4.2 Thermostat shall be unit or wall mounted and shall be heavy-duty type with enclosed contacts as specified by the manufacturer, with a 3-position selector switch to permit manual fan operation independent of temperature control. Control circuit voltage shall not exceed 30 volts as provided by a factory-installed control circuit transformer.

2.5 Asbestos Usage: Materials containing asbestos shall not be used.

3.0 EXECUTION:

3.1 Coordination and Scheduling: Contractor shall ensure that power interruptions have been scheduled and approved.

3.2 Workmanship: Installation work shall be in compliance with the National Electric Code.

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SECTION 16840 LIGHTNING ARRESTERS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of lightning arresters. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: Arresters shall comply with ANSI/IEEE 28 and ANSI C62.2.

3.0 EXECUTION:

3.1 Scheduling and Coordination: Contractor shall ensure that power interruptions have been scheduled and approved.

3.2 Workmanship shall be in compliance with ANSI C2.

3.3 Cleaning: Clean work areas and materials of dirt, grime, grease, and debris.

3.4 Expulsion Arresters shall be inspected for depleted fiber material and thin walls. Report deficiencies to the Contracting Officer.



SECTION 16845 NURSE CALL SYSTEM

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for new and/or repair and maintenance of nurse call systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS

2.1 System Equipment:

2.1.1 General Each nursing unit or other specifically dedicated system shall have its equipment located in or near the associated console, where shown. The equipment shall include all devices, components, and wiring necessary to perform the functions specified. If the equipment space or power requirements exceed that shown, necessary adjustments to the installation to accommodate the equipment shall be made as approved.

2.1.2 Materials and Equipment Units of the same type of equipment shall be products of a single manufacturer. Each major component of equipment shall have the manufacturer's name and address, and the model and serial number in a conspicuous place.

2.1.3 Cabinet Wiring Items, devices and components shall be securely mounted, identified, and conveniently arranged for servicing. Wiring shall be secured on identified terminals, color coded or otherwise identified, and shall be neatly formed, cabled, and laced or clamped in position in the cabinet. Operating controls and devices shall be located in a single unit nurse control station. The nurse control station shall be enclosed in a desk-top box with a plastic laminate finish in an approved color, and shall be cable connected to the control cabinet.

2.1.4 Central Control Console Operating controls and displays required at the central console shall be housed in a desk top console. The balance of the equipment shall be provided in either free-standing or flush-mounted cabinets arranged to provide adequate ventilation. When selected, twin operating controls shall be incorporated into the console. Each separate control shall be capable of operating independently or in concert with the other. These two controls, in combination, shall function in exactly the same manner as a single console.

2.1.5 Central Processor The central processor shall function as the overall system coordinator, controlling peripheral devices, and performing alarm reporting and logging events. The central processor shall have plug-in expandability within its single housing to handle additional nursing units, and patient and staff and duty stations. The central processor shall be a single manufacturer's standard unmodified digital computer of modular design, greater than 500mhz processor speed, and 17inch or larger color monitor. The central control unit shall not include any hardware that would preclude the purchase of a standard maintenance and service contract from the computer manufacturer.

2.1.6 Logging Printer A color inkjet printer compatible with software, capable of printing on continuous paper, complete with stand and paper tray, shall be provided with the central operators terminal.

2.1.7 Patient's Bedside Station The bedside station shall perform the functions specified. Each station shall consist of a flush-mounted back box, an equipment sub-mounting plate, and either a satin finish stainless steel, or an ABS or equal plastic face plate. Face plates shall have beveled edges, mounted on the

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outlet box with countersunk corrosion-resisting steel screws. Neuro-psychiatric area stations shall be provided with tamper-proof screws. A light shall be provided on the face plate to indicate communication with the central console. Mounting height shall be 4.5 feet above the floor, or as shown. Station shall include a pillow speaker cord set as specified, except that the pediatric area system shall be provided with a standard cord set.

2.1.8 Calling Stations shall perform the functions specified. Each station shall consist of a flush-mounted back box, an equipment sub-mounting plate, and either a satin finish stainless steel, or an ABS or equal plastic faceplate. Faceplates shall be mounted on the outlet box with countersunk corrosion-resisting steel screws. The mounting height shall be 4 feet 6 inches above the floor or as shown.

2.1.8.1 Duty Station (Type A) shall have mounted in the faceplate, one non-locking call button, one white call-placed lamp, one speaker/microphone, and electronic tone. The tone may be separately mounted 7 feet 6 inches from the floor, directly above the duty station, provided additional rough-in is provided.

2.1.8.2 Emergency Station (Type B) shall be either pull cord or push button type. The pull cord locking-type shall be mounted 4 feet from the floor and shall contain a manual reset button, red call-placed lamp and locking type switch. Station shall be clearly identified as a calling station with manufacturer's standard lettering on the plate. The push button type shall have a locking type push button mounted 4 feet above the floor or as shown. A red indicator light shall flash when the push button is operated.

2.1.8.3 Shower Station (Type C) shall be identical to emergency station except it shall be waterproof.

2.1.8.4 Toilet Station (Type D) shall be identical to emergency station, except it shall be push button type.

2.1.8.5 Staff Station (Type E) shall be identical to the duty station, except the tone will not be required.

2.1.8.6 Elbow Station (Type F) shall be identical to the emergency station, except it shall be a maintained contact elbow switch type.

2.1.8.7 Delivery-Room and Nursery Station (Type G) shall consist of a staff station, a foot-operated [explosion-proof] switch and an elbow station. Wall mounted equipment will be mounted 4 feet above the floor or as shown.

2.1.8.8 Surgery Station (Type H) shall be identical with the delivery room station.

2.1.8.9 Neuro-psychiatric Stations (Type I) shall consist of tamperproof ceiling speakers, tamperproof emergency button mounted in the patient's room, and a keyed switch mounted outside the patient's door.

2.1.8.10 Radiology Station (Type J) shall include a visual display only, dome lights, pull cords, tone, and illuminated panel showing the room numbers of placed calls. The illuminated panel shall be located at the radiology control point. The tone annunciator shall be located adjacent to the dome light.

2.1.9 Dome Lights shall be mounted 7 feet 6 inches from floor or as shown, and shall consist of a satin finish stainless steel, or an ABS or equal plastic faceplate with translucent glass or plastic dome, mounting one or more 24-volt lamps. Where more than one lamp is required in a single dome, barriers or prismatic light control shall be provided to make the individual lamp signals discernible. Particular care shall be used in mounting to ensure that all lamp signals shall be distinctly visible in all directions.

2.1.9.1 Dome Light, Type I shall be used with patient rooms and shall include three lights, with capability of steady signal and flashing signal. Lights shall provide white, red, and green signals.



2.1.9.2 Dome Light, Type II shall be generally used with toilet, tub, or shower rooms in the surgical suite and the emergency room, and shall have red light.

2.1.9.3 Dome Light, Type III shall be used with staff registration stations and shall have three lights: white, red, and green.

2.1.10 Staff Registration Station shall be mounted 4 feet above floor and shall consist of a flush-mounted box, an equipment sub-mounting plate, and either a satin finish stainless steel, or an ABS or equal plastic faceplate. Station shall have momentary push buttons for RN, LPN or aide which shall be used for both "in" and "out" registration. Activation of these devices, at a minimum, shall register the staff person into the room, light a corresponding light on the registration station and the corridor dome light.

2.1.11 Audio System Each area system shall include an audio system designed to provide clear, distinct two-way voice communication. Reproduction of sounds shall be of such fidelity as to provide pick-up of normal conversations anywhere in the room. The patient shall be able to converse with a calling station without moving in bed, or directing patient's voice toward a microphone or without raising the voice above a normal speaking level.

2.1.11.1 Amplifier An audio amplification system shall be included in each nurse station. The amplifier shall provide the fidelity and overall gain necessary to achieve the sound transmission and reproduction characteristics specified with all speakers/microphones and wiring provided. Power output shall be not less than 3 watts at a total distortion not exceeding 5 percent. Hum and noise level shall be at least 60 dB below full output with normal input open. Two independent volume controls shall be provided; one shall be accessible on the nursing area's console and shall control the volume of sound reproduced at the console. The other shall be a concealed control within the amplifier unit to control the volume of sound reproduced at all other stations. The individual remote stations shall include, if necessary, a means of adjusting the sound level at the individual stations while maintaining properly matched input and output impedances. Adjustment shall also be provided for the automatic compensation of volume when group monitoring selectors are used. A nonlinear voice emphasis or tone-compensation circuit may be included in the amplifier to secure improved speech response, but this circuit shall include a cutoff to provide the linear response specified. All such semi-permanent adjustments shall be made by a qualified technician when the system is placed in service and shall be concealed and inaccessible to other persons. The amplifier shall be adequately ventilated, rigidly constructed, neatly wired and arranged for servicing, with all removable components and all terminals permanently identified. The amplifier may be located in the remote control unit or in a separate wall cabinet. Protection to prevent damage to the amplifier in case shorted or open output should occur shall be provided.

2.1.11.2 Speaker/Microphones Speaker/microphone shall be permanent-magnet dynamic or ceramic type, protected against dust and humidity. Magnet and voice coil shall be held concentric by a rigid frame. The speaker shall be capable of reproducing a sound level of 90 dB plus or minus 3 dB, (at a distance of 4 feet on the axis without overdriving or distorting any frequencies between 300 and 3000 Hz) when installed in an enclosure or in the pillow speaker. Speaker shall not be susceptible to damage from overdriving within the range of power available from the amplifier and circuits provided. Speaker/microphones shall be coordinated and matched to the input and output circuits of the amplifier, both for single connection and for group monitoring, to provide the sound reproduction specified. Subsystems or components shall not be combined which could cause unacceptable distortion such as feedback between pillow speakers and unmuted room speaker/microphone combinations. This protection shall extend throughout the entire range of operation (volume control) of all components.

2.1.11.3 Telephone Handsets or Headsets Handsets or headsets shall not have a press-to-talk switch and shall be coordinated with input and output of amplifier. Two plug-in sets shall be provided for each console.

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2.1.12 Cord Sets Each set shall be 6 feet long and equipped with a corrosion-resisting bed clamp. A hook or other means shall be provided to suspend cord sets when not in use. Use of magnets is not acceptable. Cord sets shall be impact-resistant. Cord set connections to the patient station wall plate shall be interchangeable and the full function or change in function shall result by only connecting the cord set. No external switching shall be required except special care station. Electrical cords shall be SVT, 2-conductor, No. 18 AWG copper, PVC insulated, twisted pair, with overall PVC jacket, suitable for operation from 68 to 140 degrees F, and UL listed as a hospital lamp or vacuum cleaner cord. Each cord set shall be provided individually packaged and identified complete with an itemized list.

2.1.12.1 Pillow Cord Sets Pillow speaker shall include facilities to place call to central console, turn a TV set on and off, change TV channels, regulate the TV volume, and communicate with the console. The program entertainment shall be muted during patient/nurse communication.

2.1.12.2 Standard Cord Sets shall be the momentary action type with a non-locking call button and jack molded onto the cord.

2.1.12.3 Low Pressure Pneumatic Cord Set Sets shall be of the momentary action type. The concentric plug shall be molded onto the cord. The pressure tube shall be constructed of flexible plastic, suitable for use in an oxygen atmosphere. The outer jacket button housing shall be polyethylene plastic.

2.1.13 System Power Supply The system power supply shall be surface mounted, located as shown and shall supply 24 Vdc power for operation of the call system. The supply shall operate between 32 and 120 degrees F on a continuous duty basis from a primary line voltage between 105 to 125 Vac, 60 Hz. The output shall be regulated 24 Vdc with protection against overloads. Line to load regulation shall not exceed 2-1/2 percent with ripple and noise remaining below the 10 mV rms level. Output protection against overload or shorts shall be provided by an electronic fold-back circuit set to limit the volt-ampere output to less than 100 VA. The power output shall be restored automatically upon removal of overload without resetting circuit breakers or replacing fuses.

2.1.14 Standby Power Supply A standby power supply shall be provided and mounted into the same backbox as the systems power supply providing full, uninterrupted operating power to the system in case of primary power or power supply failure. Failure of primary ac power or failure of the system power supply shall cause the standby supply to automatically transfer into the system without interruption and maintain full operation of the system, both light/tone signals and two-way voice communication. The output shall maintain 24 Vdc at full load for a minimum of 6 minutes. The standby shall then automatically transfer out of the system. The battery pack shall be completely sealed and require no maintenance or periodical discharge and recharge cycling. The battery shall be protected against system overload or shorts. A built-in float charger operating from 120 Vac shall be provided to float charge the batteries during normal operating conditions. Control terminals shall provide remote light and tone indications for primary or supply failure, system overload or shorts, and/or battery disconnect.

2.2 Materials:

2.2.1 Cabinets and Special Back Boxes Cabinets and boxes shall be provided to suit the equipment, and shall be metal enclosures with covers in accordance with UL 1069 and UL 50. The Contractor shall provide the correct boxes for all nurse call equipment.

2.2.2 Cabinet Rim and Faceplates Rims and faceplates shall be provided to suit the equipment, and shall be satin-finished corrosion-resisting steel with beveled edges.



2.2.3 Cables and Conductors Cables and multi-conductor wiring, shielded and unshielded, for low-voltage signaling and audio circuits shall be provided to suit the equipment. Coaxial and shielded cable shall be type and size as recommended by the system manufacturer.

2.3 Diagnostic Programs: Diagnostic programs that will report all failures of the system and failures of peripherals on the system shall be provided.

3.0 EXECUTION

3.1 Installation: The installation of the system described shall be performed in accordance with manufacturer's instructions.

3.1.1 Electrical Work Raceways, outlet boxes, pull boxes, and power conductors shall be in accordance with Section 16051 Wiring Systems Equipment and NFPA 70.

3.1.2 Grounding Equipment enclosures and all other non-current carrying metal parts of electric equipment shall be grounded.

3.1.3 System Wiring System wiring shall be in accordance with UL 1069, and NFPA 70. Where multi-conductor or coaxial cable is used, installation, wiring and connections shall be in accordance with manufacturer's instructions and diagrams.

3.2 Tests: The Contractor is responsible for providing all personnel, equipment, instrumentation, and supplies necessary to perform all testing. Notification of any planned testing shall be given to the Government at least 15 days prior to any test. In no case shall notice be given until after the Contractor has received written Government approval of the test plans and procedures as specified. After the installation is completed and approval received, the Contractor shall conduct operating tests for approval and acceptance. Parts and components that fail during the tests shall be replaced with new parts. The Contractor shall furnish instruments and personnel required for the tests, and the Government will furnish the necessary electric power.

3.2.1 Zone and Subsystem Each zone and subsystem shall be demonstrated to function as specified by operation of each individual system component under simulated normal system loading.

3.2.2 Nursing Units Each nursing unit and subsystem to be interconnected with one or more additional areas or to the central console shall be demonstrated to function as specified by operation of each individual system component under simulated normal system loading.

3.2.3 Central Console Equipment shall be programmed to demonstrate all display functions, methods of response to individual system calls, system data printout, and all other operations specified.

3.2.4 CPU Diagnostic System shall be demonstrated by utilizing the diagnostic software programming. Systematic test routines are to be activated by entering the appropriate test number at the nurse console keypad. The test parameters are to be displayed either at the nurse console or monitored with a meter on special test boards included in the test set. Demonstrate operation of each function.

3.2.5 Audio Tests The satisfactory operations, adjustment, and sensitivity of each station shall be demonstrated. Defective connections, hum, weakness, or excessive volume of individual stations shall be corrected. Field tests shall be made of the completed installation to demonstrate the following:

- a. Output from speaker, 90 dB plus or minus 3 dB, 300-3000 Hz, reference level threshold of audibility 0 dB at 0.0002 dyne/sq. cm. sound pressure.
- b. Gain from patient's bedside station to nurse station, 65 dB (plus or minus 3 dB, 300-3000 Hz).
- c. Hum and noise level at least 45 dB below full output with system connected.

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d. Amplifier output of at least 3 watts at less than 5 percent distortion.

3.2.6 Tests shall be conducted using a calibrated tone generator producing octave and half-octave tone intervals from 100 to 6400 Hz 4 feet from the microphone on the axis, and using a standard calibrated sound-level meter on the dB "A" scale, 4 feet from the axis of the speaker. Microphone amplifier and speakers shall be connected as in service with at least 75 feet of cable and with six dome lamps and one emergency call operating.

3.3 Training Courses: The Contractor shall conduct two training courses. One 8-hour training course shall be for the nursing staff, the other will be a 8-hour technical course for the maintenance staff. The training periods shall start after the system is functionally complete, and immediately prior to the final acceptance tests. Each course shall cover all items contained in the operating and maintenance instructions. The Contractor shall also provide videotapes of each training course.



SECTION 16850 PUBLIC ADDRESS EQUIPMENT

1.0 DESCRIPTION OF WORK: The specification covers the furnishing and installation of public address equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Broadcast Microphone Cables: EIA RS-215.

2.2 Audio Cable Connectors: EIA RS-297.

2.3 Capacitors: EIA RS-153, RS-164, RS-198, and RS-395, as applicable.

2.4 Ceramic-Base Printed Circuits: EIA RS-161 and RS-162.

2.5 Component Parts: Standard test method of EIA RS-186.

2.6 Thermoplastic Hook-Up Wire: EIA RS-230 and ASTM B 286.

2.7 Inductors: EIA RS-175 or RS-197.

2.8 Loudspeakers: EIA RS-278 and RS-SE-103.

2.9 Microphones: EIA RS-SE-105.

2.10 Panel Mounting Racks: EIA RS-310.

2.11 Resistors: EIA RS-155, RS-172, RS-196, RS-303, RS-322, and RS-344.

2.12 Sound System: EIA RS-160.

2.13 Tape Equipment: NAB Magnetic Tape (Reel-to-Reel) Recording and Reproduction Standards.

2.14 Transformers: EIA RS-174, RS-180, RS-183, and RS-393.

2.15 AM-FM Tuners: The AM-FM tuners shall have a tuning range of 540 kHz to 1605 kHz for AM and 88 to 108 MHz for FM and shall comply with FCC Rules and Regulations, Part 15. Controls shall include AM-FM selector switch, power switch with pilot light, signal strength meter, and tuning control with illuminated dial scale.

2.16 Phonograph: Phonograph shall conform to the requirements of NAB Disc Recording and Reproducing Standard and shall play in the automatic and manual modes. The phonograph shall have two speeds of operation, 33-1/2 rpm and 45 rpm, adjustable over 3 percent of the range. Deviation from the mean speed (wow and flutter) shall not exceed 0.1 percent.

2.17 Magnetic Tape Equipment: Tape equipment shall be provided for monophonic recording and playback, of at least 30 dB dynamic range of input signal. The record and playback heads shall be separate

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with the playback head arranged to monitor while the recording is made. Hum and noise shall be at least 50 dB below full output.

2.17.1 Cassette Tape Equipment: Tape speed shall be 1-7/8 ips. Frequency response shall be within \pm 3 dB from 40 hertz to 14,000 hertz, with less than 0.16 percent wow and flutter. Signal to noise ratio shall be at least 50 dB.

2.17.2 Automatic Tape Reproducer: At a tape speed of 7-1/2 ips, the reproducer shall have a frequency response within \pm 2 dB from 40 hertz to 15,000 hertz. Wow and flutter shall be not greater than 0.25 percent; and signal to noise ratio, not less than 50 dB.

2.18 Preamplifiers:

2.18.1 Microphone Preamplifiers: If required, microphone preamplifiers shall be matched to the microphone.

2.18.2 Mixer Preamplifier: Preamplifier shall be of the general purpose type, to mix and control at least five inputs. Equalization shall meet the requirements of RIAA Publication, Standard Recording and Reproducing Characteristics. Preamplifier shall be provided with independent low-frequency and high-frequency tone controls to adjust bass and treble response at the output, a monitor volume control, monitor jack, illuminated volume unit meter, power switch, and master volume controls.

2.18.3 Radio Frequency Preamplifier: The preamplifier shall have a minimum of 14 dB gain over the FM band with a noise figure not greater than 4.2 dB.

2.19 Power Amplifiers: Frequency response shall be within \pm 1 dB from 25 hertz to 19,000 hertz, and total harmonic distortion shall not exceed 0.5 percent at rated output. Output shall incorporate automatic resetting, protective electronic circuitry to prevent amplifier damage of any kind due to amplifier output opens or shorts.

2.20 Equipment Racks: Equipment shall be mounted in 19-inch racks in accordance with EIA RS-310. Ventilated rear panels, solid side panels, and solid top panels shall be provided.

2.21 AM/FM Antenna. The AM/FM antenna shall be roof-mounted suitable for both AM and FM reception and shall cover all frequency bands specified for radio tuners. Coaxial cable attenuation shall not exceed 2.5 dB over the FM radio band.

3.0 EXECUTION:

3.1 Connections to Existing System: Alarm or emergency systems shall not be interrupted. If required, work shall be scheduled after normal working hours. Existing disturbed work shall be restored to its original condition, including maintenance of wiring continuity.

3.2 Temporary Shutdowns: Temporary shutdowns of existing systems shall be made at times that will not interfere with normal operation of existing facilities, and only with written consent of the Contracting Officer.



SECTION 16860 MASTER ANTENNA TELEVISION SYSTEM

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of master antenna television system. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Antennas used for television off-air reception shall be yagi log-periodic type. The antennas shall be cut-to-channel, or broadband models designed for heavy duty commercial use.

2.1.1 Off-Air Antenna Mechanical Specifications Crossarms shall be high-strength aluminum alloy, seamless, with ends sealed. Elements shall be high-strength aluminum alloy tubing. The antenna shall be rated for an operational/survival wind velocity of 100 mph with no ice. All antennas shall be completely weatherproofed. The aluminum shall have an electrically conductive anti-corrosion (anodized) finish. All metals for installation and mounting shall be high-strength noncorrosive type. No drilling shall be required for installation. The antenna cable connector shall be a built in, 75 ohm anodized brass, type F-61 connector.

2.1.2 Off Air Antenna Electrical Specifications The antenna shall as a minimum conform to the following specifications: Gain Front-to-Back:8 dBi, Ratio:18, Output Impedance: 75 plus or minus 2 ohms unbalanced, Maximum VSWR: 1.5:1, and Frequency Range: VHF, FM, and UHF.

2.1.3 Antenna Support Towers Antenna support towers shall be designed to EIA ANSI/EIA/TIA-222-F specifications and adhere to FAA AC 70/7460-1 and 47 CFR 17 requirements. Appropriate off-set antenna-tower mounts and downlead cable supports shall be provided.

2.1.4 Transmission Lines Transmission lines connecting the antennas and headend equipment shall be low-loss, foam dielectric coaxial cable.

2.2 Headend Equipment:

2.2.1 General The headend shall utilize channel mixers, processors for channel translation, broadband amplifiers, single channel amplifiers, and combining networks as selected for receiving off-air television and FM signals and interfacing them with the cable distribution system. Coaxial downleads of the off-air antennas shall be provided with preamplifiers as required to supply the proper signal level input required by the headend equipment. RF Modulators shall be supplied to modulate each satellite station to the appropriate channel as specified for system performance.

2.2.2 Off-Air Reception

2.2.2.1 Channel Mixers (Nonadjacent) shall as a minimum conform to the following specifications:

Insertion Loss (Maximum 54-216 MHz):	2.5 dB
Return Loss:	14 dB
Out-of-Band Rejection:	12 dB
Impedance:	75 ohms

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2.2.2.2 Processors A processor shall be required for each channel translation specified. Processors for channel translation shall, as a minimum conform to the following specifications:

Bandwidth: 6 MHz
Impedance (input and output): 75 ohms
Return Loss (within 6 MHz bandwidth): 16 dB
Max. Noise Figure (at maximum gain): 10 dB
Input Level Range: VHF minus 20 to plus 30 dBmV - UHF minus 20 to plus 25 dBmV
Output Level Range: 50 to 60 dBmV
Carrier to Noise Ratio (with plus 10 dBmV input): 57 dB
AGC Regulation: Plus or minus 1 dB output variation for rated input level range
variation Frequency Stability: Plus or minus 10 KHz over operational temperature range
Spurious Output: 60 dB below video carrier with video carrier output level at plus 60 dBmV and audio carrier level at plus 45 dBmV.
Adjacent Channel Rejection: Equal to or Greater than 60 dB

2.2.2.3 Broadband amplifiers shall, as a minimum conform to the following specifications:

Frequency Range: [54-108, 174-220] [54-220] MHz
Frequency Response (Across Bandpass): Plus or minus 1.0 dB
Impedance: 75 ohms
Maximum Noise Figure: 10 dB
Return Loss: 16 dB

2.2.2.4 Single Channel Amplifiers shall, as a minimum conform to the following specifications:

Frequency Range: 6 MHz for channel specified
Frequency Response: Plus or minus 0.5 dB
Impedance: 75 ohms
Return Loss: 14 dB
Maximum Noise Figure: 10 dB
AGC Regulation: Plus or minus 1 dB output variation for rated input level range
Skirt Rejection: Minus 26 dB at plus or minus 9 MHz from channel center

2.2.2.5 The FM system shall, as a minimum conform to the following specifications:

a. System Specifications:

Input, Impedance: 75 ohms
Output level: Plus 36 dBmV
Frequency: 88 - 108 MHz
Spurious: Greater than 60c dB below signal level
Hum and Noise: Greater than 60 dB below rated output
Oscillator Harmonics: Greater than 60 dB below rated output

b. RF Module: One RF processor module shall be provided for each station in the FM broadcast band listed under system performance in paragraph. The RF modules shall, as a minimum conform to the following specifications:

Frequency: 88 - 108 MHz in or out as required
Output level-module: Plus 52 dBmV
Output level control: Plus or minus 10 dB
Stability: 0.005 percent, crystal
Limiting: 20 microvolts (minus 3 dB point)
Sensitivity: 3 microvolts for 30 dB quieting
Input level: Minimum 40 microvolts monaural and 60 microvolts stereo
Image rejection: 90 dB



Passband: 200 kHz
Selectivity: Under plus or minus 150 kHz at 30 dB down Under plus or minus 250 kHz at 50 dB down (Greater selectivity optional)

2.2.3 Off-Air Reception

2.2.3.1 Channel Mixers (Nonadjacent) Channel mixers shall as a minimum conform to the following specifications: Insertion Loss: (Maximum 54-216 MHz): 2.5 dB, Return Loss: 14 dB, Out-of-Band Rejection: 12 dB, Impedance: 75 ohms.

2.2.3.2 Combining Network A signal-combining network (mixer) shall be provided to combine the VHF, CATV channels and FM broadcast band network into a single broadband signal. The combining network shall have an output test point, mixer output step attenuator, dual pilot insertion network, and removable mixer-to-trunk jumper. The combining network shall be rack mounted or wall mounted with the associated headend equipment and shall as a minimum conform to the following specifications:

Band pass: As specified for system performance
Flatness over any 6 MHz segment: Plus or minus 0.1 dB
Flatness 54 - 216 MHz: Plus or minus 0.5 dB
Maximum Insertion loss, (nominal)
Channel input to trunk output: 15 dB
Channel input to mixer output: 13 dB
Test point (loss from trunk output): 20 dB
Return loss: 16 dB on channels employed
Isolation between any two inputs: 30 dB
Impedance Input and output: 75 ohms

2.3 Cable Distribution Plant:

2.3.1 Inside Plant Cables All coaxial cables used for wiring within a building shall conform to NFPA 70. The inside plant cabling 0.500 inch OD or larger shall be nonjacketed with a bare outer conductor. Inside plant cables less than 0.500 inch OD shall be PVC jacketed and shall have a braided copper or aluminum outer conductor with 65 plus or minus 5 percent braid coverage. The inner conductor shall be copper clad steel wire or solid copper and an aluminum foil bonded to the outside of the dielectric. The cable shall have a polyethylene foam dielectric unless used in plenum applications. Where cabling is to be placed in plenum, ducts and other air-handling spaces the cable shall meet NFPA 70.

2.3.2 Signal Splitter The cable distribution system shall utilize signal power splitters, directional couplers, and isolation taps as required to meet the system performance requirements. Signal splitters shall have a power throughput capability of 6 amperes minimum when amplifiers are to be powered through the cable. All signal splitters shall be contained in rugged weatherproof anodized aluminum or other non-corrosive metal housing with brass connector ports. In addition to the above specifications, the splitters shall as a minimum conform to the following specifications: Impedance: 75 ohms unbalanced, Return Loss: 17 dB, RFI Shielding: 100 dB, and Isolation: 25 dB.

2.3.3 Outlets with plates shall be wall or baseboard] mounted and shall not protrude from the face of the wall more than 1/4 inch. Each outlet shall have an attenuation of less than 0.1 dB and a VSWR of less than 1.15 to 1. Cable Connectors shall be 75 ohm Type "F" or self-terminating units. All metallic portions of connectors shall be composed of anodized brass, beryllium copper or phosphorus bronze. Outlet connector shall be Type "F" female plug.

2.4 CCTV Cameras:

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2.4.1 Silicon-target, monochrome, charge-coupled-device imaging type with 0.5-inch pickup tube; capable of producing usable video images when used with f/1.4 lens with subject illumination ranging from 0.05 to 9290 fc.

2.4.2 Silicon-target, color, charge-coupled-device imaging type with 1/3-inch image format; capable of producing usable video images with only 0.07 fc and of automatically setting the color by a digital adjustment control.

2.4.3 Lenses shall be high-quality coated optics, matched to camera and designed specifically for TV camera application. Units shall have neutral-density spot filters and automatic iris controls. Fixed lenses shall be f/1.4 adjustable to f/22. Zoom lenses shall be "quiet operating" rated remote control units.

2.5 Monitors: Monitors shall be designed for continuous operation with 15k hrs.mtbf, quick starting, 120v, 60hz, furnished in metal cabinets. Monochrome horizontal resolution shall be 600 lines. Color horizontal resolution shall be 300 lines.

3.0 EXECUTION:

3.1 Installation: Interior installations shall comply with NFPA 70. Exterior installations shall comply with IEEE C2, NFPA 70, and NFPA 780. All system components shall be installed in accordance with the manufacturer's specifications and recommendations.

3.1.1 The headend equipment shall be aligned to meet System Performance and manufacturers requirements.

3.1.2 Components Amplifiers, equalization circuitry, splitters, and power supplies shall be located with the cable, suitably waterproofed and protected with a metal enclosure when mounted outside or in a secured area on a wooden backboard for indoor installations.

3.1.3 Towers shall be installed in accordance with the manufacturer's instructions. An inspection of all tower parts shall be made upon receipt. Any members which sustain damage either in shipment or construction shall be reported to the Contracting Officer immediately. Correction of damage shall not be done without approval from the Contracting Officer.

3.1.4 Antennas shall be installed in accordance with the manufacturers instructions. Exact antenna alignment to receive the maximum signal level and quality is the responsibility of the Contractor. Download cables from the antennas shall be supported in increments not more than three feet.

3.2 Grounding: shall be in accordance with applicable portions of NFPA 70, NFPA 780, IEEE C2, UL 467 and EIA ANSI/EIA/TIA-222-F. The maximum resistance to ground at the connection point for all system components shall be 25 ohms. The grounding conductors shall be as a minimum No. 6 AWG solid copper. Existing towers, if utilized, shall be made to conform to the above requirements. All system components shall have a direct connection to ground. Each cable at the point of building entry shall be grounded with a grounding block or be equipped with a surge protector to dissipate electrical surges. Grounding blocks shall be directly connected to a ground. All headend equipment shall be equipped with surge protection either by inherent design or external device. Unless otherwise specified, lightning and transient surge protection shall be provided in accordance with NFPA 780.



SECTION 16900 POLES FOR STREET AND AREA LIGHTING SYSTEMS

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for poles for street and area lighting systems. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Wood Poles: Wood poles shall comply with ANSI O5.1. Poles shall be pressure treated in accordance with AWPA C4, with creosote conforming to AWPA P1/P13. Oil-borne preservatives and petroleum shall conform with AWPA P8 and AWPA P9, respectively. Waterborne preservatives shall conform with AWPA P5. Waterborne preservatives shall be either chromated or ammoniacal copper arsenate. Any species listed in ANSI O5.1 for which a preservative treatment is not specified in AWPA C4, shall not be used. Northern white cedar, if treated as specified for western red cedar, and western fir, if treated as specified for Douglas fir, may be used. Wood poles shall have pole markings located approximately 10 feet from pole butts for poles 50 feet or less in length, and 14 feet from the pole butts for poles longer than 55 feet in length. Poles shall be machine trimmed by turning smooth full length, and shall be roofed, gained, and bored prior to pressure treatment. Where poles are not provided with factory-cut gains, metal gain plates shall be provided.

2.2 Steel Poles: Steel poles shall be designed to withstand the loads specified in IEEE C2 multiplied by the appropriate overload capacity factors, shall be hot-dip galvanized in accordance with ASTM A 123. Poles shall have tapered tubular members, either round in cross-section or polygonal, and comply with strength calculations performed by a registered professional engineer. Calculations shall be submitted. Pole shafts shall be one piece. Poles shall be welded construction with no bolts, rivets, or other means of fastening except as specifically approved. Pole markings shall be approximately 3 to 4 feet above grade and shall include manufacturer, year of manufacture, top and bottom diameters, length, and a loading tree. Attachment requirements shall be provided as indicated, including grounding provisions. Climbing facilities are not required. Bases shall be of the anchor-bolt-mounted type.

2.3 Concrete Poles: Concrete poles shall be designed to withstand the loads specified in IEEE C2 multiplied by the appropriate overload capacity factors. Poles shall be reinforced or prestressed, either cast or spun. Spun poles shall be manufactured by a centrifugal spinning process with concrete pumped into a polished round tapered metal mold. Concrete for spun poles shall have a compressive strength of at least 5000 psi at 28 days. Steel wire shall have an ultimate tensile strength of at least 120,000 psi; and reinforcing bars shall have an ultimate tensile strength of at least 40,000 psi. After the high speed spinning action is completed, a spun pole shall be cured by a suitable wet steam process. Spun poles shall have a water absorption of not greater than three percent to eliminate cracking and to prevent erosion. Concrete poles shall have hollow shafts. Poles shall have a hard, smooth, nonporous surface that is resistant to soil acids, road salts, and attacks of water and frost. Poles shall not be installed for at least 15 days after manufacture. Fittings and brackets that conform to the concrete pole design shall be provided. Poles shall conform to strength calculations performed by a registered professional engineer and submitted.

2.4 Steel, Aluminum, and Concrete Poles: ASTM A 500, ASTM B 209, and AASHTO Standards.

2.4 Aluminum Poles: shall be of high-strength aluminum having a yield strength of 34,000 psi.

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2.5 Painting: Materials shall match that of existing or adjacent pole finish.

3.0 EXECUTION:

3.1 Safety Precautions shall comply with applicable requirements of the National Electrical Safety Code.

3.2 Wood Pole Setting: In normal firm ground, minimum pole setting depths shall be as follows: for pole lengths of 20 feet, 25 feet, 30 feet, and 35 feet the minimum depth shall be 5 feet, 5 feet 6 inches, and 6 feet, respectively. For pole lengths up to 100 feet the minimum depth shall be 10 percent of length for both straight and curved lines, plus 2 feet for straight lines and 10 percent of length plus 2 feet 6 inches for curves and corners. In rocky or swampy ground, pole setting depths shall be respectively decreased or increased as required by local power company published standards and as approved by the Contracting Officer. In swampy ground, a bog shoe may be used.

3.3 Wood Pole Inspections:

3.3.1 Visually Inspect Standing Wood Poles for ground-line heart rot, aboveground heart rot, pole top heart rot, shell rot, mechanical damage, eroded foundations, large splits, and lightning damage.

3.3.2 Coat Surfaces with creosote-base wood preservative coating compound and wrap with impregnated felt bandage in compliance with wood pole preservative materials supplier's instructions.

3.4 Wood Pole Decay Maintenance:

3.4.1 Ground-Line Heart Rot shall be treated with an approved fumigant.

3.4.2 Wood Poles with surface decay below grade shall be replaced with new poles.

3.5 Concrete Repair: Repair spalling in pole foundations and concrete poles by thoroughly coating with 2,000 psi shear strength epoxy resin, applying 3,000 psi 28-day concrete, and finishing to restore original configuration of the concrete.

3.6 Steel Pole Maintenance: Steel poles that are corroded shall be chemically cleaned of rust and scale primed and painted.



Section 16916 Electrical Distribution System Substation Equipment

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of electrical distribution system substation equipment. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS: The maintenance and repair work shall include but not be limited to the following major equipment:

- a. Power Transformers.
- b. Station Service Transformers.
- c. Automatic Tap Changing Transformers.
- d. Switchgear.
- e. Oil Circuit Breakers.
- f. Isolating Switches.
- g. Metering Equipment.
- h. Relaying Equipment.
- i. Station Battery System.
- j. Articulated Secondary Unit Substation.
- k. Integral Transformer-Load Center.

2.1 Power Distribution Panel: NEMA PB 1.

2.2 Insulating Oil, Electrical (For Transformers, Switches, and Circuit Breakers): ASTM D 923. ASTM D 4059.

2.3 Distribution, Power, and Regulating Transformers: ANSI 462 series as applicable.

2.4 Instrument Transformers: ANSI C57.13.

2.5 Installation and Maintenance of Oil-Immersed Transformers: ANSI/IEEE C57.12.00.

2.6 Voltage Air Switches, Bus Supports, and Switch Accessories: ANSI/IEEE C37.30, C37.34.

2.7 Low-Voltage AC Power Circuit Breakers: ANSI C37.50.

2.8 Electrical Analog Indicating Instruments: ANSI C39.1.

2.9 Primary Unit Substation: NEMA 201.

2.10 Secondary Unit Substation: NEMA 210.

2.11 Molded Case Circuit Breakers: NEMA AB1.

2.12 Watthour Meters: ANSI C12.10.

2.13 Switchboards, Dead Front Distribution: NEMA PB 2.

3.0 EXECUTION:

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3.1 Coordination and Scheduling: Outages shall be scheduled and coordinated in advance with the Contracting Officer.

3.2 Protection: Precautions shall be taken to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI C2.

3.3 Workmanship: Work shall be completed in accordance with NFPA 70 and NFPA 70B.

3.4 Interruptions: During interruptions, equipment and standby systems shall be provided to maintain existing electrical service.

3.5 Fences shall be checked for security. Gates and locks shall be checked for proper operation and grounding.

3.6 Oil Handling and Disposal: Oil and oil-contaminated materials shall be handled and disposed of to comply with the latest federal and state requirements.



SECTION 16917 ELECTRICAL DISTRIBUTION SYSTEM CAPACITOR BANKS

1.0 **DESCRIPTION OF WORK:** This specification covers the furnishing and installation of electrical distribution system capacitor banks. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 **Material:** New capacitors shall comply with NEMA CP 1 and shall not use impregnant containing polychlorinated biphenyls (PCB).

3.0 EXECUTION:

3.1 **Outages** shall be scheduled and coordinated in advance with the Contracting Officer.

3.2 **Protection:** Take precautions to prevent injury to personnel and to avoid damage to equipment and other property in compliance with ANSI C2.

3.3 **Maintenance and Repair Work:** Workmen shall allow the capacitor time to discharge and then short capacitor terminals together and ground before touching any live parts. Capacitors shall be checked in accordance with NEMA CP 1 and NFPA 70. Perform the necessary preventative maintenance, repair, or replacement of any of the components.

3.4 **Oil Handling and Disposal:** Oil and oil-contaminated materials shall be handled and disposed of to comply with the latest Environmental Protection Agency requirements.



SECTION 16925 HIGH-VOLTAGE DISCONNECTING DEVICES

1.0 DESCRIPTION OF WORK: This specification covers the furnishing and installation of materials for repair and maintenance of high-voltage disconnecting devices. Products shall match existing materials and/or shall be as directed by the Contracting Officer. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

2.0 PRODUCTS:

2.1 Insulating Oil: ASTM standards applicable to the oil in use.

2.2 General Electrical: ANSI/IEEE C2.

2.3 Power Fuses and Fuse Disconnecting Switches: Incoming line power fuse disconnecting units, consisting of power fuses and fuse disconnecting switches, shall comply with NEMA SG 2. Expulsion-type or Current-limiting power disconnecting units and fuses shall have ratings in accordance with ANSI C37.46.

2.4 Automatic Circuit Reclosers For AC Systems: Automatic circuit reclosers shall comply with IEEE ANSI/IEEE C37.60 and shall be outdoor oil or vacuum type, complete with devices, attachments, and accessories required for installation and operation and shall be suitable for mounting on a single pole. Each recloser shall have continuous current, minimum tripping current, interrupting current, and making current ratings and reclosure times as indicated and shall be rated for the voltage and phase of the system in which it is installed. Three-phase lockout shall be provided on three-phase circuits. Reclosers shall include provisions for a sequence of not less than three automatic reclosing operations unless otherwise noted, followed by lockout if the circuit fault persists, and for manual opening, closing, and lockout by use of a hookstick. Operating sequence shall be adjustable for 1, 2, 3, and 4 operations to lockout and for combinations of instantaneous operations followed by time delay openings to secure coordination with other reclosers and fuses in the medium-voltage distribution system. Reclosers shall automatically reset within a definite time interval after a successful reclosure and shall be supplied with devices needed to provide the necessary operating power. Hydraulically-controlled reclosers shall be provided with tank drains and sampling valves. Surge arrester protection shall be provided.

2.5 Automatic Line Sectionalizers For AC Systems: Pole-mounted sectionalizing switches shall comply with IEEE ANSI/IEEE C37.63. Sectionalizers shall be coordinated with source side recloser as shown.

2.6 Power Switching Equipment: NEMA SG 3, SG 5, and SG 6.

2.7 Distribution Cutouts and Arrester Combination Mounting: ANSI C37.42 and ANSI/IEEE C62.11.

3.0 EXECUTION:

3.1 Scheduling and Coordination: Contractor shall ensure that power interruptions have been scheduled and approved.

3.2 Protection: Precaution, in compliance with ANSI/IEEE C2, shall be taken to prevent injury to personnel and to avoid damage to equipment and property.



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3.3 Oil Handling and Disposal: Oil and oil contaminated materials shall be handled and disposed of to comply with the latest federal and state regulations.

DIVISION 19 DEMOLITION

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SECTION 19120 DEMOLITION

1.0 **DESCRIPTION OF WORK:** This specification covers the dismantling, salvage, demolition, and disposal of designated structures, utilities, and/or materials as directed by the Contracting Officer.

2.0 **PRODUCTS:** (Not Used).

3.0 **EXECUTION:**

3.1 **Submittals:** Procedures proposed for the accomplishment of all demolition and salvage work, including a detailed description of the methods and equipment to be used for each operation and the scheduled sequence of operations, shall be submitted to the Contracting Officer for approval. Operations which involve interruption of utility services or the handling of toxic or hazardous materials shall be scheduled and approved by the Contracting Officer at least 48 hours prior to the start of such operations.

3.2 **Clearances and Permits:** Obtain as required from local authorities.

3.3 **Salvage:** Title to all materials and equipment to be demolished is vested in the Government. Unsalvageable materials shall be disposed of as directed by the Contracting Officer. Materials and equipment for Government salvage or reuse shall be carefully removed and delivered to a storage site designated by the Contracting Officer.

3.4 **Protection of Existing Work:** All necessary precautions shall be taken to ensure against damage to existing work that is to remain in place or is to remain the property of the Government. Damaged areas shall be repaired or replaced with new products to match existing surrounding surfaces. Shoring, bracing, and supports shall be provided as required and structural elements shall not be overloaded. Care shall be taken to prevent unscheduled interruptions to any utility service.

3.5 **Protection From Weather:** The interior of buildings and all materials and equipment shall be protected from the weather at all times.

3.6 **Dust and Dirt Control:** Dust and dirt resulting from demolition operations shall be controlled to prevent spread into occupied portions of buildings and to avoid creation of a nuisance to the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding, and pollution.

3.7 **Burning:** Burning at the project site for the disposal of refuse and debris will not be permitted.

3.8 **Explosives:** The use of explosives will not be permitted.

3.9 **Hazardous Materials:** Extreme care and caution shall be exercised at all times when handling toxic or hazardous materials in order to prevent harm to personnel and property and to prevent environmental contamination. Federal and state regulations governing handling, transportation, and disposal of such materials shall be rigidly adhered to.



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3.10 Utilities: Temporary interruptions, disconnections, and relocation of existing utilities and removal of abandoned utility services shall be as directed by the Contracting Officer.

3.11 Cleanup: Debris and rubbish shall not be allowed to accumulate in buildings or on site. Local regulations regarding hauling and disposal shall be followed.

SPECIFICATION CROSS REFERENCE

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CROSS REFERENCE ORDERED BY UNIT PRICE BOOK SECTION

SECTION_U	SECTION_S	DESC
01418	02227	FIELD TESTS
02010	02012	STANDARD PENETRATION TESTS
02010	19120	DEMOLITION
02011	19120	DEMOLITION
02012	02012	STANDARD PENETRATION TESTS
02012	19120	DEMOLITION
02046	19120	DEMOLITION
02049	19120	DEMOLITION
02055	19120	DEMOLITION
02057	19120	DEMOLITION
02058	19120	DEMOLITION
02059	19120	DEMOLITION
02068	19120	DEMOLITION
02069	19120	DEMOLITION
02070	19120	DEMOLITION
02072	19120	DEMOLITION
02087	02080	ASBESTOS REMOVAL AND DISPOSAL
02109	02110	CLEARING AND GRUBBING
02215	02211	ROCK REMOVAL
02215	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02216	02222	STRUCTURAL EXCAVATION
02220	02220	SITE EXCAVATION AND FILL
02223	02220	SITE EXCAVATION AND FILL
02226	02220	SITE EXCAVATION AND FILL
02227	02220	SITE EXCAVATION AND FILL
02228	02211	ROCK REMOVAL
02228	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02230	02211	ROCK REMOVAL
02230	02220	SITE EXCAVATION AND FILL
02230	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02231	02220	SITE EXCAVATION AND FILL
02231	02227	FIELD TESTS
02235	02224	PIPE SLEEVES FOR UTILITY LINES
02240	02211	ROCK REMOVAL
02240	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02240	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02241	02243	SOIL STABILIZATION - HYDRATED LIME
02241	02921	TOPSOIL
02243	02250	SOIL STABILIZATION - VIBROFLOTATION
02243	02515	CRUSHED STONE PAVING
02244	02251	SOIL STERILIZATION
02244	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02250	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02250	02243	SOIL STABILIZATION - HYDRATED LIME
02250	02251	SOIL STERILIZATION
02250	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02250	02578	SPRAY APPLICATIONS, SEAL COATS



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02252	02250	SOIL STABILIZATION - VIBROFLOTATION
02266	02275	SOIL - CEMENT SURFACING
02266	02727	EROSION CONTROL
02267	02745	IMHOFF TANKS
02270	02272	GABIONS
02270	02274	RIPRAP
02368	14570	.NULL.
02422	02450	RAILROADS
02511	02512	STEEL REINFORCED PORTLAND CEMENT
02511	02513	FIBROUS REINFORCED PORTLAND CEMENT
02511	02710	FOUNDATION DRAINAGE SYSTEMS
02512	02712	UNDERSLAB DRAINAGE
02514	02520	PORTLAND CEMENT CONCRETE SIDEWALKS
02514	02521	ASPHALT CONCRETE SIDEWALKS
02514	02522	MISCELLANEOUS SIDEWALKS
02514	02523	PRECAST SIDEWALKS AND PAVERS
02517	15576	BREECHING
02525	02525	CONCRETE CURBS AND GUTTERS
02530	14570	.NULL.
02531	02725	SAND DRAINS
02531	02860	PLAYING FIELDS
02545	02745	IMHOFF TANKS
02546	02514	ASPHALTIC CONCRETE OVERLAYS
02546	02570	PORTLAND CEMENT CONCRETE
02546	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02546	02576	CRACK SEALING OF ASPHALT CONCRETE PAVEME
02546	02577	PATCHING OF ASPHALT CONCRETE PAVEMENTS
02546	02579	SLURRY SEALS
02580	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02580	02590	PAVEMENT MARKINGS
02580	02670	WELL REPAIR
02644	02661	WATER LINES
02645	15100	VALVES
02658	02661	WATER LINES
02661	02724	FORCE MAINS AND INVERTED SIPHONS
02663	02666	CHILLED WATER LINES
02663	15262	INSULATION FOR UNDERGROUND PIPE
02664	02661	WATER LINES
02667	02710	FOUNDATION DRAINAGE SYSTEMS
02674	02672	WATER WELLS
02684	02685	GAS DISTRIBUTION LINES
02688	02685	GAS DISTRIBUTION LINES
02704	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02704	02243	SOIL STABILIZATION - HYDRATED LIME
02704	02250	SOIL STABILIZATION - VIBROFLOTATION
02704	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02704	02710	FOUNDATION DRAINAGE SYSTEMS
02704	02712	UNDERSLAB DRAINAGE
02709	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02710	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02710	02830	FENCES AND GATES
02710	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02712	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02712	02832	STEEL ROD AND BAR FENCING

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02712	02833	WROUGHT IRON ROD AND BAR FENCING
02712	02837	FARM-TYPE WIRE FENCING
02752	02720	STORM DRAINS
02752	02725	SAND DRAINS
02752	02726	WASTEWATER COLLECTION
02752	02730	SEWER LINE MANHOLES
02752	02740	SEPTIC TANKS AND GREASE TRAPS
02752	02766	SEWER LINE PIPE LINING
02762	02661	WATER LINES
02764	02720	STORM DRAINS
02766	02710	FOUNDATION DRAINAGE SYSTEMS
02768	15060	MECHANICAL PIPING
02772	02710	FOUNDATION DRAINAGE SYSTEMS
02776	02742	SIPHON TANK AND SIPHONS
02831	02831	STEEL CHAIN-LINK FENCING
02834	02832	STEEL ROD AND BAR FENCING
02834	02833	WROUGHT IRON ROD AND BAR FENCING
02834	02837	FARM-TYPE WIRE FENCING
02836	02830	FENCES AND GATES
02836	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02836	02835	PERMANENT WOOD FENCING
02840	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02841	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02841	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02842	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02842	02850	TRAFFIC SIGNS
02863	02861	RECREATIONAL FACILITIES
02911	02950	PLANTINGS
02932	02933	SODDING AND SEEDING
02933	02933	SODDING AND SEEDING
03114	03105	CONCRETE FORMWORK
03116	03105	CONCRETE FORMWORK
03118	03105	CONCRETE FORMWORK
03126	03105	CONCRETE FORMWORK
03132	03130	CONCRETE ACCESSORIES
03133	03130	CONCRETE ACCESSORIES
03138	03105	CONCRETE FORMWORK
03142	03105	CONCRETE FORMWORK
03146	03105	CONCRETE FORMWORK
03150	03105	CONCRETE FORMWORK
03154	03105	CONCRETE FORMWORK
03158	03105	CONCRETE FORMWORK
03162	03105	CONCRETE FORMWORK
03170	03105	CONCRETE FORMWORK
03174	03105	CONCRETE FORMWORK
03182	03105	CONCRETE FORMWORK
03196	03105	CONCRETE FORMWORK
03198	03130	CONCRETE ACCESSORIES
03217	03205	CONCRETE REINFORCEMENT
03219	03205	CONCRETE REINFORCEMENT
03227	03205	CONCRETE REINFORCEMENT
03227	03227	STEEL STRESSING TENDONS FOR PRESTRESSED
03228	03205	CONCRETE REINFORCEMENT



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03311	03305	CAST-IN-PLACE CONCRETE
03314	03305	CAST-IN-PLACE CONCRETE
03318	03305	CAST-IN-PLACE CONCRETE
03326	03305	CAST-IN-PLACE CONCRETE
03334	03334	CONCRETE CURING
03356	03356	GROUT
03362	03362	SHOTCRETE
03368	03705	CONCRETE RESTORATION AND CLEANING
03372	03372	SPECIALLY PLACED CONCRETE
03396	03305	CAST-IN-PLACE CONCRETE
03396	03730	CONCRETE TOPPING
03398	03305	CAST-IN-PLACE CONCRETE
03399	03399	ROLLER-COMPACTED CONCRETE
03404	03415	PRECAST-PRESTRESSED CONCRETE
03411	03405	PRECAST ARCHITECTURAL CONCRETE
03411	03415	PRECAST-PRESTRESSED CONCRETE
03412	03415	PRECAST-PRESTRESSED CONCRETE
03414	03405	PRECAST ARCHITECTURAL CONCRETE
03414	03415	PRECAST-PRESTRESSED CONCRETE
03414	03425	MISCELLANEOUS PRECAST ITEMS
03436	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03440	03415	PRECAST-PRESTRESSED CONCRETE
03454	03405	PRECAST ARCHITECTURAL CONCRETE
03455	03415	PRECAST-PRESTRESSED CONCRETE
03474	03405	PRECAST ARCHITECTURAL CONCRETE
03474	03415	PRECAST-PRESTRESSED CONCRETE
03482	03415	PRECAST-PRESTRESSED CONCRETE
03490	03405	PRECAST ARCHITECTURAL CONCRETE
03490	03415	PRECAST-PRESTRESSED CONCRETE
03490	03425	MISCELLANEOUS PRECAST ITEMS
03491	03415	PRECAST-PRESTRESSED CONCRETE
03510	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03510	03510	GYPSUM CONCRETE DECKS
03510	03530	CEMENTITIOUS WOOD FIBER ROOF DECK SYSTEM
03520	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03522	03415	PRECAST-PRESTRESSED CONCRETE
03524	03415	PRECAST-PRESTRESSED CONCRETE
03526	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03536	03530	CEMENTITIOUS WOOD FIBER ROOF DECK SYSTEM
03720	03705	CONCRETE RESTORATION AND CLEANING
03730	03705	CONCRETE RESTORATION AND CLEANING
03740	03730	CONCRETE TOPPING
04110	04202	UNIT MASONRY
04110	04210	BRICKWORK
04110	04250	TERRA COTTA
04116	04202	UNIT MASONRY
04116	04210	BRICKWORK
04116	04250	TERRA COTTA
04150	04150	.NULL.
04150	04210	BRICKWORK
04150	04405	STONWORK
04150	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
04190	04190	SCAFFOLDING - TUBULAR STEEL
04210	04202	UNIT MASONRY

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04210	04210	BRICKWORK
04220	04202	UNIT MASONRY
04225	04210	BRICKWORK
04225	15576	BREECHING
04227	15576	BREECHING
04232	04202	UNIT MASONRY
04235	04202	UNIT MASONRY
04237	04202	UNIT MASONRY
04240	04202	UNIT MASONRY
04240	04250	TERRA COTTA
04245	04202	UNIT MASONRY
04248	04202	UNIT MASONRY
04251	04202	UNIT MASONRY
04251	04250	TERRA COTTA
04253	04202	UNIT MASONRY
04255	04202	UNIT MASONRY
04259	04210	BRICKWORK
04260	15576	BREECHING
04270	04202	UNIT MASONRY
04411	04405	STONework
04422	04405	STONework
04423	04405	STONework
04424	04405	STONework
04426	04405	STONework
04429	04510	MASONRY RESTORATION
04450	04405	STONework
04510	04510	MASONRY RESTORATION
04520	04210	BRICKWORK
04520	04510	MASONRY RESTORATION
04550	04202	UNIT MASONRY
04554	15576	BREECHING
05008	14570	.NULL.
05020	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05060	14570	.NULL.
05075	05120	STRUCTURAL STEEL
05075	14570	.NULL.
05108	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05120	05120	STRUCTURAL STEEL
05120	05518	PIPE AND TUBE RAILINGS
05120	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05120	14570	.NULL.
05125	05120	STRUCTURAL STEEL
05130	05120	STRUCTURAL STEEL
05130	05130	STEEL DECK
05130	05530	GRATING
05130	14570	.NULL.
05130	15120	PIPING ACCESSORIES
05132	05120	STRUCTURAL STEEL
05134	05120	STRUCTURAL STEEL
05134	05130	STEEL DECK
05134	14570	.NULL.
05140	05120	STRUCTURAL STEEL
05150	05120	STRUCTURAL STEEL



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05150	14570	.NULL.
05155	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05155	05120	STRUCTURAL STEEL
05155	05155	STEEL JOISTS
05155	05210	STEEL TRUSSES
05155	09941	PAINTING OF WATER STORAGE TANK
05155	14570	.NULL.
05175	14570	.NULL.
05178	05556	ORNAMENTAL SHEET METAL
05180	05180	MISCELLANEOUS STANDARD METAL ARTICLES
05210	05155	STEEL JOISTS
05210	05210	STEEL TRUSSES
05314	05130	STEEL DECK
05511	05520	METAL STAIRS
05512	05520	METAL STAIRS
05518	05518	PIPE AND TUBE RAILINGS
05520	05520	METAL STAIRS
05520	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05528	05520	METAL STAIRS
05528	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05528	05556	ORNAMENTAL SHEET METAL
05534	05530	GRATING
05542	05530	GRATING
05546	05530	GRATING
05547	05540	CASTINGS
05556	05556	ORNAMENTAL SHEET METAL
05560	05180	MISCELLANEOUS STANDARD METAL ARTICLES
05561	05556	ORNAMENTAL SHEET METAL
05814	05814	EXPANSION JOINT COVERS
05911	05910	WATER TREATMENT PLANT DEBRIS RACKS
05912	05910	WATER TREATMENT PLANT DEBRIS RACKS
05913	05910	WATER TREATMENT PLANT DEBRIS RACKS
05914	05910	WATER TREATMENT PLANT DEBRIS RACKS
05915	05910	WATER TREATMENT PLANT DEBRIS RACKS
06056	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
06056	06056	TIMBER BRIDGE COMPONENTS
06056	06116	LIGHT WOODEN STRUCTURES FRAMING
06056	06181	WOOD TRUSSES
06103	06116	LIGHT WOODEN STRUCTURES FRAMING
06116	06116	LIGHT WOODEN STRUCTURES FRAMING
06116	06181	WOOD TRUSSES
06128	06116	LIGHT WOODEN STRUCTURES FRAMING
06140	06140	SHEATHING, SIDING, AND SUBFLOORING
06154	06140	SHEATHING, SIDING, AND SUBFLOORING
06164	06140	SHEATHING, SIDING, AND SUBFLOORING
06168	06140	SHEATHING, SIDING, AND SUBFLOORING
06181	06181	WOOD TRUSSES
06182	06140	SHEATHING, SIDING, AND SUBFLOORING
06190	06116	LIGHT WOODEN STRUCTURES FRAMING
06190	06181	WOOD TRUSSES
06222	06220	MILLWORK
06226	06220	MILLWORK
06227	06220	MILLWORK
06230	06220	MILLWORK

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06240	06240	CABINETS
06251	06250	WOOD PANELING
06255	06250	WOOD PANELING
06312	06116	LIGHT WOODEN STRUCTURES FRAMING
06402	06240	CABINETS
06438	06220	MILLWORK
06514	06514	.NULL.
06518	06610	.NULL.
06610	06610	.NULL.
07110	07115	PLASTIC SHEET WATERPROOFING
07112	07111	BITUMINOUS MEMBRANE WATERPROOFING
07112	07115	PLASTIC SHEET WATERPROOFING
07112	07198	PLASTIC SHEET VAPOR BARRIERS
07114	07120	FLUID-APPLIED WATERPROOFING
07115	07110	BITUMINOUS WATERPROOFING
07115	07111	BITUMINOUS MEMBRANE WATERPROOFING
07120	07120	FLUID-APPLIED WATERPROOFING
07131	07130	BENTONITE CLAY WATERPROOFING
07146	07125	METAL WATERPROOFING
07162	07160	BITUMINOUS DAMPPROOFING
07174	07170	SILICONE DAMPPROOFING
07182	07180	CEMENTITIOUS DAMPPROOFING
07202	07211	LOOSE OR GRANULAR FILL INSULATION
07210	07210	BATT AND BLANKET BUILDING INSULATION
07210	07211	LOOSE OR GRANULAR FILL INSULATION
07210	07212	RIGID INSULATION
07215	07215	SPRAYED-ON INSULATION
07216	07212	RIGID INSULATION
07218	07210	BATT AND BLANKET BUILDING INSULATION
07218	07211	LOOSE OR GRANULAR FILL INSULATION
07218	07212	RIGID INSULATION
07223	07213	PERIMETER INSULATION
07223	07223	ROOF INSULATION AND UNDERLAYMENT
07223	07224	ROOF INSULATION AND UNDERLAYMENT
07223	07225	ROOF INSULATION AND UNDERLAYMENT
07223	07226	ROOF INSULATION AND UNDERLAYMENT
07223	07227	ROOF INSULATION AND UNDERLAYMENT
07240	07223	ROOF INSULATION AND UNDERLAYMENT
07240	07224	ROOF INSULATION AND UNDERLAYMENT
07240	07225	ROOF INSULATION AND UNDERLAYMENT
07240	07226	ROOF INSULATION AND UNDERLAYMENT
07240	07227	ROOF INSULATION AND UNDERLAYMENT
07242	07210	BATT AND BLANKET BUILDING INSULATION
07254	07256	SPRAYED-ON FIREPROOFING
07314	07314	SLATE SHINGLES
07322	07321	CLAY ROOFING TILES
07411	07410	PREFORMED ROOFING AND SIDING
07411	07605	SHEET METAL
07424	07410	PREFORMED ROOFING AND SIDING
07511	07463	ASBESTOS CEMENT ROOFING AND SIDING
07511	07510	BUILT-UP ROOFING
07511	07530	SINGLE PLY ROOFING
07511	07573	COMPOSITION TRAFFIC TOPPING



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07512	07550	INVERTED ROOF SYSTEMS
07515	07510	BUILT-UP ROOFING
07531	07530	SINGLE PLY ROOFING
07621	07605	SHEET METAL
07622	07605	SHEET METAL
07624	07605	SHEET METAL
07624	15120	PIPING ACCESSORIES
07625	07605	SHEET METAL
07717	07605	SHEET METAL
07726	07705	ROOF ACCESSORIES
07729	07605	SHEET METAL
07811	07811	PLASTIC SKYLIGHTS
07822	07812	METAL-FRAMED SKYLIGHTS
07924	07920	SEALANTS
08109	08110	HOLLOW METAL DOORS AND FRAMES
08114	08110	HOLLOW METAL DOORS AND FRAMES
08115	08110	HOLLOW METAL DOORS AND FRAMES
08115	08115	ALUMINUM DOORS AND FRAMES
08116	08110	HOLLOW METAL DOORS AND FRAMES
08118	08110	HOLLOW METAL DOORS AND FRAMES
08119	08110	HOLLOW METAL DOORS AND FRAMES
08220	08220	WOOD DOORS AND FRAMES
08254	08220	WOOD DOORS AND FRAMES
08262	08220	WOOD DOORS AND FRAMES
08266	08220	WOOD DOORS AND FRAMES
08270	08220	WOOD DOORS AND FRAMES
08278	08220	WOOD DOORS AND FRAMES
08278	08278	.NULL.
08278	08379	WOOD SAFETY GLASS DOORS
08278	08390	SCREEN AND STORM DOORS
08278	08800	GLASS AND GLAZING
08279	08220	WOOD DOORS AND FRAMES
08305	08110	HOLLOW METAL DOORS AND FRAMES
08312	08312	ALUMINUM AND WOOD SLIDING GLASS DOORS
08316	08316	SLIDING FIRE DOORS
08317	08317	SECURITY VAULT DOORS
08332	08330	COILING (ROLLING) DOORS
08342	08330	COILING (ROLLING) DOORS
08356	08356	FLEXIBLE DOORS
08361	08360	OVERHEAD DOORS
08362	08360	OVERHEAD DOORS
08365	08360	OVERHEAD DOORS
08369	08330	COILING (ROLLING) DOORS
08372	15834	.NULL.
08372	15865	AXIAL FLOW FANS
08376	08330	COILING (ROLLING) DOORS
08379	08379	WOOD SAFETY GLASS DOORS
08385	08385	SOUND RETARDANT DOORS
08390	08390	SCREEN AND STORM DOORS
08394	08390	SCREEN AND STORM DOORS
08413	08410	ENTRANCES
08415	08410	ENTRANCES
08415	08915	ALUMINUM WINDOW WALLS/CURTAIN WALLS
08417	08410	ENTRANCES

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08471	08471	REVOLVING DOORS
08512	08512	METAL WINDOWS
08520	08520	ALUMINUM WINDOWS
08524	08520	ALUMINUM WINDOWS
08604	08610	WOOD WINDOWS
08610	08610	WOOD WINDOWS
08620	08610	WOOD WINDOWS
08624	08610	WOOD WINDOWS
08632	08610	WOOD WINDOWS
08640	08610	WOOD WINDOWS
08704	08710	FINISH HARDWARE
08708	08710	FINISH HARDWARE
08709	08710	FINISH HARDWARE
08710	08710	FINISH HARDWARE
08713	08710	FINISH HARDWARE
08714	08710	FINISH HARDWARE
08715	08710	FINISH HARDWARE
08716	08710	FINISH HARDWARE
08717	08710	FINISH HARDWARE
08718	08710	FINISH HARDWARE
08719	08710	FINISH HARDWARE
08726	08710	FINISH HARDWARE
08728	08710	FINISH HARDWARE
08729	08710	FINISH HARDWARE
08734	08710	FINISH HARDWARE
08754	08710	FINISH HARDWARE
08755	08800	GLASS AND GLAZING
08818	08800	GLASS AND GLAZING
08820	08800	GLASS AND GLAZING
08832	08800	GLASS AND GLAZING
08836	08800	GLASS AND GLAZING
08844	08800	GLASS AND GLAZING
08852	08800	GLASS AND GLAZING
08855	08800	GLASS AND GLAZING
08862	08800	GLASS AND GLAZING
08872	08800	GLASS AND GLAZING
08876	08800	GLASS AND GLAZING
08884	08800	GLASS AND GLAZING
08894	08800	GLASS AND GLAZING
08895	08800	GLASS AND GLAZING
08924	08915	ALUMINUM WINDOW WALLS/CURTAIN WALLS
09134	09210	PLASTER REPAIRS
09134	09510	ACOUSTICAL CEILINGS
09200	09210	PLASTER REPAIRS
09203	09210	PLASTER REPAIRS
09211	09210	PLASTER REPAIRS
09213	09210	PLASTER REPAIRS
09263	09210	PLASTER REPAIRS
09312	09315	TILE FLOORING
09312	09320	CERAMIC WALL TILE
09334	09315	TILE FLOORING
09340	09315	TILE FLOORING
09400	09405	TERRAZZO



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09414	09405	TERRAZZO
09421	09405	TERRAZZO
09510	09510	ACOUSTICAL CEILINGS
09512	09510	ACOUSTICAL CEILINGS
09514	09510	ACOUSTICAL CEILINGS
09519	09510	ACOUSTICAL CEILINGS
09526	09535	SOUND ABSORBING PANELS
09534	09530	ACOUSTICAL INSULATION AND BARRIERS
09564	09560	WOOD STRIP FLOORING
09564	09570	WOOD PARQUET FLOORING
09564	09596	GYMNASIUM FLOORING
09565	09566	WOOD BLOCK INDUSTRIAL FLOORING
09634	09750	BRICK FLOORING
09634	09751	LIGHT-DUTY BRICK FLOORING
09661	09655	RESILIENT FLOORING
09661	09675	CONDUCTIVE VINYL TILE FLOORING
09664	09651	RESILIENT FLOORING - CEMENTITIOUS UNDERL
09682	09685	CARPETING
09691	09685	CARPETING
09721	09405	TERRAZZO
09721	09670	FLUID-APPLIED RESILIENT FLOORING
09721	09720	EPOXY FLOORING
09721	09731	CONDUCTIVE ELASTOMERIC LIQUID FLOORING
09910	09910	EXTERIOR PAINTING
09920	09920	INTERIOR PAINTING
09960	09952	WALL COVERINGS
09970	09952	WALL COVERINGS
10050	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10050	10630	MOVABLE METAL PARTITIONS
10050	16610	LUMINAIRES
10160	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10183	08710	FINISH HARDWARE
10183	10550	POSTAL SPECIALTIES
10185	04202	UNIT MASONRY
10185	09405	TERRAZZO
10185	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10186	15401	INTERIOR PLUMBING
10214	05556	ORNAMENTAL SHEET METAL
10260	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
10260	10605	WIRE MESH PARTITIONS
10266	09952	WALL COVERINGS
10275	05528	ORNAMENTAL HANDRAIL AND RAILINGS
10275	10275	ACCESS AND PEDESTAL FLOORS
10350	07620	.NULL.
10350	10350	.NULL.
10350	10351	FLAGPOLES
10355	07620	.NULL.
10355	07920	SEALANTS
10355	10351	FLAGPOLES
10410	10410	DIRECTORY AND BULLETIN BOARDS
10410	10412	.NULL.
10430	10430	SIGNS
10451	10451	.NULL.
10451	10452	SECURITY SCREENS

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



10505	10505	METAL LOCKERS
10505	10605	WIRE MESH PARTITIONS
10520	10520	FIRE EXTINGUISHERS, CABINETS, AND ACCESS
10521	15301	FIRE PROTECTION SYSTEMS
10522	15301	FIRE PROTECTION SYSTEMS
10535	08512	METAL WINDOWS
10535	08520	ALUMINUM WINDOWS
10551	10550	POSTAL SPECIALTIES
10553	10550	POSTAL SPECIALTIES
10605	08710	FINISH HARDWARE
10605	10605	WIRE MESH PARTITIONS
10615	08710	FINISH HARDWARE
10615	10615	DEMOUNTABLE PARTITIONS
10630	10630	MOVABLE METAL PARTITIONS
10677	10677	METAL STORAGE SHELVING
10820	10820	TOILET ACCESSORIES
10911	10911	WARDROBES
11024	05530	GRATING
11024	05556	ORNAMENTAL SHEET METAL
11024	11024	VAULT DOOR UNITS
11024	13800	FLOOR SAFES
11061	11061	THEATER & STAGE EQUIPMENT
11106	11106	REFRIGERATORS
11106	11402	FOOD SERVICE EQUIPMENT
11132	11132	PROJECTION SCREENS
11140	11501	PAINT SPRAY BOOTH
11140	15060	MECHANICAL PIPING
11140	15160	PUMPS
11150	11150	PARKING CONTROL EQUIPMENT
11161	11160	PLATFORM AND DOCK LIFTS
11161	11161	PLATFORM AND DOCK LEVELERS
11161	11165	PLATFORM AND DOCK BUMPERS
11169	10677	METAL STORAGE SHELVING
11402	11402	FOOD SERVICE EQUIPMENT
11402	15100	VALVES
11415	11415	UNIT KITCHENS
11420	11402	FOOD SERVICE EQUIPMENT
11420	11420	RANGES AND OVENS
11474	15401	INTERIOR PLUMBING
11474	15800	HUMIDITY CONTROL EQUIPMENT
11475	15401	INTERIOR PLUMBING
11484	11484	GYMNASIUM EQUIPMENT
11484	11486	DEMOUNTABLE BLEACHERS (EXTERIOR)
11600	11600	METAL MEDICAL CASEWORK
11600	11700	LABORATORY AND MEDICAL EQUIPMENT
11700	11600	METAL MEDICAL CASEWORK
11700	11700	LABORATORY AND MEDICAL EQUIPMENT
11910	11106	REFRIGERATORS
11910	11402	FOOD SERVICE EQUIPMENT
11910	11415	UNIT KITCHENS
11910	11420	RANGES AND OVENS
11910	11910	DISHWASHERS
11910	11912	GARBAGE DISPOSERS



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11920	11920	CLOTHES DRYERS
11920	11922	CLOTHES WASHERS
11930	16830	ELECTRIC UNIT HEATERS
11940	05518	PIPE AND TUBE RAILINGS
11940	05520	METAL STAIRS
11940	06220	MILLWORK
11980	11980	TARGET FIRING RANGES (EXTERIOR)
12531	12531	WINDOW TREATMENT HARDWARE
13090	13090	RADIATION PROTECTION
13093	15890	DUCTWORK AND ACCESSORIES
13112	07210	BATT AND BLANKET BUILDING INSULATION
13112	13112	PRE-ENGINEERED STRUCTURES
13153	13151	.NULL.
13154	15475	POOL EQUIPMENT
13155	15475	POOL EQUIPMENT
13156	02710	FOUNDATION DRAINAGE SYSTEMS
13156	02717	.NULL.
13156	15475	POOL EQUIPMENT
13158	15475	POOL EQUIPMENT
13205	02665	WATER RESERVOIRS AND TANKS
13205	02665	WATER RESERVOIRS AND TANKS
13205	15451	STEEL TANKS
13205	15451	STEEL TANKS
13205	15452	PLASTIC TANKS
13205	15452	PLASTIC TANKS
13205	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
13210	02665	WATER RESERVOIRS AND TANKS
13210	02665	WATER RESERVOIRS AND TANKS
13210	15451	STEEL TANKS
13210	15452	PLASTIC TANKS
13210	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
13214	15451	STEEL TANKS
13214	15452	PLASTIC TANKS
13215	15451	STEEL TANKS
13215	15581	GAS METERS AND REGULATORS
13215	15590	FUEL HANDLING SYSTEMS
13215	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
13219	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
13800	13800	FLOOR SAFES
14211	14245	.NULL.
14211	14250	.NULL.
14211	14420	.NULL.
14400	14400	.NULL.
14401	14410	.NULL.
14405	14400	.NULL.
14416	14450	.NULL.
14551	14510	.NULL.
14611	14602	.NULL.
14611	14650	ASH HOISTS
14660	14602	.NULL.
15103	15100	VALVES
15104	15100	VALVES
15104	15401	INTERIOR PLUMBING
15107	15401	INTERIOR PLUMBING

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15109	15100	VALVES
15109	15401	INTERIOR PLUMBING
15111	15100	VALVES
15112	15100	VALVES
15114	15120	PIPING ACCESSORIES
15115	15100	VALVES
15115	15120	PIPING ACCESSORIES
15116	15100	VALVES
15116	15401	INTERIOR PLUMBING
15118	15100	VALVES
15121	15100	VALVES
15123	15100	VALVES
15141	14570	.NULL.
15141	15060	MECHANICAL PIPING
15141	15160	PUMPS
15142	15160	PUMPS
15143	15160	PUMPS
15145	15160	PUMPS
15146	15160	PUMPS
15149	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15151	15060	MECHANICAL PIPING
15151	15160	PUMPS
15152	15481	COMPRESSED AIR EQUIPMENT
15162	14570	.NULL.
15162	15060	MECHANICAL PIPING
15162	15120	PIPING ACCESSORIES
15164	15120	PIPING ACCESSORIES
15172	14570	.NULL.
15172	15060	MECHANICAL PIPING
15172	15120	PIPING ACCESSORIES
15174	15120	PIPING ACCESSORIES
15176	15120	PIPING ACCESSORIES
15176	15451	STEEL TANKS
15182	15261	INSULATION FOR ABOVEGROUND PIPE
15188	15060	MECHANICAL PIPING
15188	15261	INSULATION FOR ABOVEGROUND PIPE
15188	15262	INSULATION FOR UNDERGROUND PIPE
15190	15290	DUCTWORK INSULATION
15192	15060	MECHANICAL PIPING
15192	15100	VALVES
15193	15060	MECHANICAL PIPING
15193	15100	VALVES
15194	15060	MECHANICAL PIPING
15194	15100	VALVES
15197	15100	VALVES
15199	14570	.NULL.
15199	15100	VALVES
15220	15401	INTERIOR PLUMBING
15228	02744	GREASE INTERCEPTORS
15286	14570	.NULL.
15286	15160	PUMPS
15287	15610	WARM AIR FURNACES
15290	15160	PUMPS



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15291	15160	PUMPS
15292	15160	PUMPS
15293	15160	PUMPS
15295	15160	PUMPS
15297	15160	PUMPS
15298	15160	PUMPS
15306	15401	INTERIOR PLUMBING
15310	15401	INTERIOR PLUMBING
15411	15301	FIRE PROTECTION SYSTEMS
15414	15301	FIRE PROTECTION SYSTEMS
15416	15301	FIRE PROTECTION SYSTEMS
15417	15301	FIRE PROTECTION SYSTEMS
15418	15301	FIRE PROTECTION SYSTEMS
15508	15120	PIPING ACCESSORIES
15508	15301	FIRE PROTECTION SYSTEMS
15509	15558	HIGH TEMPERATURE WATER BOILERS
15509	15559	CAST-IRON BOILERS AND FIREBOXES
15510	15120	PIPING ACCESSORIES
15510	15558	HIGH TEMPERATURE WATER BOILERS
15511	15556	FIRE TUBE BOILERS
15513	15557	WATER TUBE BOILERS
15513	15558	HIGH TEMPERATURE WATER BOILERS
15541	15751	COILS
15542	15610	WARM AIR FURNACES
15542	15840	INDUCTION UNITS
15544	15680	REFRIGERANT EQUIPMENT
15547	15781	PACKAGED HEATING AND COOLING UNITS
15549	15760	STEAM AND HOT WATER UNIT HEATERS
15560	15301	FIRE PROTECTION SYSTEMS
15565	15830	RADIATORS
15566	15800	HUMIDITY CONTROL EQUIPMENT
15567	15261	INSULATION FOR ABOVEGROUND PIPE
15567	15290	DUCTWORK INSULATION
15567	15890	DUCTWORK AND ACCESSORIES
15568	15573	DRAFT CONTROL EQUIPMENT
15569	15576	BREECHING
15569	15577	STACKS
15601	15401	INTERIOR PLUMBING
15605	15590	FUEL HANDLING SYSTEMS
15622	15100	VALVES
15622	15556	FIRE TUBE BOILERS
15635	15120	PIPING ACCESSORIES
15635	15683	REFRIGERATION SPECIALTIES
15635	15887	TAILPIPE EXHAUST EQUIPMENT
15640	15100	VALVES
15640	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15672	15120	PIPING ACCESSORIES
15672	15680	REFRIGERANT EQUIPMENT
15680	15711	NATURAL DRAFT COOLING TOWERS
15680	15712	FORCED DRAFT AND INDUCED DRAFT COOLING T
15690	15680	REFRIGERANT EQUIPMENT
15698	15120	PIPING ACCESSORIES
15708	15855	AIR HANDLING UNITS
15710	15781	PACKAGED HEATING AND COOLING UNITS

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15713	15782	PACKAGED HEAT PUMPS
15717	15781	PACKAGED HEATING AND COOLING UNITS
15720	15610	WARM AIR FURNACES
15720	15680	REFRIGERANT EQUIPMENT
15721	15781	PACKAGED HEATING AND COOLING UNITS
15723	15751	COILS
15726	15481	COMPRESSED AIR EQUIPMENT
15728	15670	CONDENSERS
15729	15680	REFRIGERANT EQUIPMENT
15730	15711	NATURAL DRAFT COOLING TOWERS
15730	15712	FORCED DRAFT AND INDUCED DRAFT COOLING T
15731	15401	INTERIOR PLUMBING
15733	15860	CENTRIFUGAL FANS
15733	15865	AXIAL FLOW FANS
15733	15871	POWER ROOF VENTILATORS
15740	15886	AIR CLEANING DEVICES
15742	14570	.NULL.
15742	15100	VALVES
15742	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15747	15881	DIFFUSERS, REGISTERS, GRILLES, AND LOUVE
15749	15881	DIFFUSERS, REGISTERS, GRILLES, AND LOUVE
15750	15751	COILS
15751	15890	DUCTWORK AND ACCESSORIES
15751	15915	CONTROL AND FIRE DAMPERS
15751	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15752	15830	RADIATORS
15754	07705	ROOF ACCESSORIES
15754	15871	POWER ROOF VENTILATORS
15761	15990	TESTING AND BALANCING OF HVAC SYSTEMS
15763	15855	AIR HANDLING UNITS
15764	15886	AIR CLEANING DEVICES
15770	15683	REFRIGERATION SPECIALTIES
15890	15920	SOUND ATTENUATORS
16011	16032	WIRING SYSTEMS EQUIPMENT
16015	16032	WIRING SYSTEMS EQUIPMENT
16017	16032	WIRING SYSTEMS EQUIPMENT
16018	16032	WIRING SYSTEMS EQUIPMENT
16022	16032	WIRING SYSTEMS EQUIPMENT
16024	16032	WIRING SYSTEMS EQUIPMENT
16026	16032	WIRING SYSTEMS EQUIPMENT
16029	16032	WIRING SYSTEMS EQUIPMENT
16032	16032	WIRING SYSTEMS EQUIPMENT
16056	16032	WIRING SYSTEMS EQUIPMENT
16109	16032	WIRING SYSTEMS EQUIPMENT
16111	16111	FIBER OPTIC DATA TRANSMISSION SYSTEM
16113	16032	WIRING SYSTEMS EQUIPMENT
16114	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16114	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16115	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16115	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16117	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16117	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16119	16032	WIRING SYSTEMS EQUIPMENT



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16119	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16120	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16121	16032	WIRING SYSTEMS EQUIPMENT
16121	16121	INSTITUTIONAL ELECTRIC HEATING EQUIPMENT
16121	16825	FIRE ALARM AND DETECTION EQUIPMENT
16122	16032	WIRING SYSTEMS EQUIPMENT
16122	16814	TELEPHONE SYSTEM, OUTSIDE PLANT
16123	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16123	16123	ELECTRICAL DISTRIBUTION SYSTEM GROUNDING
16153	16032	WIRING SYSTEMS EQUIPMENT
16153	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16153	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16181	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16181	16123	ELECTRICAL DISTRIBUTION SYSTEM GROUNDING
16211	16032	WIRING SYSTEMS EQUIPMENT
16213	16032	WIRING SYSTEMS EQUIPMENT
16232	16032	WIRING SYSTEMS EQUIPMENT
16233	16032	WIRING SYSTEMS EQUIPMENT
16233	16233	CLOCK AND PROGRAM SYSTEMS
16234	16032	WIRING SYSTEMS EQUIPMENT
16313	16313	ELECTRIC MOTORS
16315	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16316	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16323	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16324	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16325	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16326	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16328	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16329	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16331	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16332	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16333	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16336	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16337	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16338	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16339	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16340	16925	HIGH-VOLTAGE DISCONNECTING DEVICES
16353	16313	ELECTRIC MOTORS
16412	16416	TRANSFORMERS
16416	16416	TRANSFORMERS
16423	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16424	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16427	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16439	16439	UNINTERRUPTIBLE POWER SYSTEM (UPS)
16511	16511	AUTOMATIC TRANSFER AND BY-PASS/ISOLATION
16512	16511	AUTOMATIC TRANSFER AND BY-PASS/ISOLATION
16513	16513	MOTOR GENERATOR SETS
16610	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16610	16610	LUMINAIRES
16611	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16611	16610	LUMINAIRES
16612	16610	LUMINAIRES
16613	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16613	16610	LUMINAIRES

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16614	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16614	16610	LUMINAIRES
16615	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16615	16610	LUMINAIRES
16616	16610	LUMINAIRES
16616	16616	STREET AND AREA LIGHTING CONTROLS
16617	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16622	16610	LUMINAIRES
16625	16032	WIRING SYSTEMS EQUIPMENT
16631	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16631	16610	LUMINAIRES
16645	16610	LUMINAIRES
16660	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16661	16610	LUMINAIRES
16680	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16682	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16683	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16684	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16688	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16711	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16712	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16813	16233	CLOCK AND PROGRAM SYSTEMS
16814	16814	TELEPHONE SYSTEM, OUTSIDE PLANT
16820	16820	CATHODIC PROTECTION SYSTEM FOR UNDERGROU
16820	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
16821	16820	CATHODIC PROTECTION SYSTEM FOR UNDERGROU
16821	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
16822	16825	FIRE ALARM AND DETECTION EQUIPMENT
16823	16825	FIRE ALARM AND DETECTION EQUIPMENT
16824	16825	FIRE ALARM AND DETECTION EQUIPMENT
16825	16825	FIRE ALARM AND DETECTION EQUIPMENT
16830	15830	RADIATORS
16830	16830	ELECTRIC UNIT HEATERS
16838	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16839	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16840	16840	LIGHTNING ARRESTERS
16845	16845	NURSE CALL SYSTEM
16850	16850	PUBLIC ADDRESS EQUIPMENT
16855	16850	PUBLIC ADDRESS EQUIPMENT
16860	16860	MASTER ANTENNA TELEVISION SYSTEM
16862	16860	MASTER ANTENNA TELEVISION SYSTEM
16865	16860	MASTER ANTENNA TELEVISION SYSTEM
16900	14570	.NULL.
16916	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16917	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16917	16917	ELECTRICAL DISTRIBUTION SYSTEM CAPACITOR
16918	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16919	16840	LIGHTNING ARRESTERS
16921	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16921	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16922	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16922	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16923	16900	POLES FOR STREET AND AREA LIGHTING SYSTE



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16924	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16925	16917	ELECTRICAL DISTRIBUTION SYSTEM CAPACITOR
16925	16925	HIGH-VOLTAGE DISCONNECTING DEVICES
16926	16610	LUMINAIRES

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



CROSS REFERENCE ORDERED BY SPECIFICATION SECTION

SECTION_U	SECTION_S	DESC
02010	02012	STANDARD PENETRATION TESTS
02012	02012	STANDARD PENETRATION TESTS
02087	02080	ASBESTOS REMOVAL AND DISPOSAL
02109	02110	CLEARING AND GRUBBING
02215	02211	ROCK REMOVAL
02228	02211	ROCK REMOVAL
02230	02211	ROCK REMOVAL
02240	02211	ROCK REMOVAL
02220	02220	SITE EXCAVATION AND FILL
02223	02220	SITE EXCAVATION AND FILL
02226	02220	SITE EXCAVATION AND FILL
02227	02220	SITE EXCAVATION AND FILL
02230	02220	SITE EXCAVATION AND FILL
02231	02220	SITE EXCAVATION AND FILL
02215	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02228	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02230	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02240	02221	EXCAVATION, TRENCHING, AND BACKFILLING
02216	02222	STRUCTURAL EXCAVATION
02235	02224	PIPE SLEEVES FOR UTILITY LINES
01418	02227	FIELD TESTS
02231	02227	FIELD TESTS
02240	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02250	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02704	02240	SOIL STABILIZATION - CRUSHED ROCK SUBGRA
02241	02243	SOIL STABILIZATION - HYDRATED LIME
02250	02243	SOIL STABILIZATION - HYDRATED LIME
02704	02243	SOIL STABILIZATION - HYDRATED LIME
02243	02250	SOIL STABILIZATION - VIBROFLOTATION
02252	02250	SOIL STABILIZATION - VIBROFLOTATION
02704	02250	SOIL STABILIZATION - VIBROFLOTATION
02244	02251	SOIL STERILIZATION
02250	02251	SOIL STERILIZATION
02270	02272	GABIONS
02270	02274	RIPRAP
02266	02275	SOIL - CEMENT SURFACING
02422	02450	RAILROADS
02704	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02709	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02710	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02712	02511	PORTLAND CEMENT CONCRETE OVERLAYS
02511	02512	STEEL REINFORCED PORTLAND CEMENT
02511	02513	FIBROUS REINFORCED PORTLAND CEMENT
02546	02514	ASPHALTIC CONCRETE OVERLAYS
02243	02515	CRUSHED STONE PAVING
02514	02520	PORTLAND CEMENT CONCRETE SIDEWALKS
02514	02521	ASPHALT CONCRETE SIDEWALKS
02514	02522	MISCELLANEOUS SIDEWALKS



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02514	02523	PRECAST SIDEWALKS AND PAVERS
02525	02525	CONCRETE CURBS AND GUTTERS
02546	02570	PORTLAND CEMENT CONCRETE
02244	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02250	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02546	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02580	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02840	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02841	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02842	02575	BRIDGE DECK ASPHALT CONCRETE WEARING SUR
02546	02576	CRACK SEALING OF ASPHALT CONCRETE PAVEME
02546	02577	PATCHING OF ASPHALT CONCRETE PAVEMENTS
02250	02578	SPRAY APPLICATIONS, SEAL COATS
02546	02579	SLURRY SEALS
02580	02590	PAVEMENT MARKINGS
02644	02661	WATER LINES
02658	02661	WATER LINES
02664	02661	WATER LINES
02762	02661	WATER LINES
13205	02665	WATER RESERVOIRS AND TANKS
13205	02665	WATER RESERVOIRS AND TANKS
13210	02665	WATER RESERVOIRS AND TANKS
13210	02665	WATER RESERVOIRS AND TANKS
02663	02666	CHILLED WATER LINES
02580	02670	WELL REPAIR
02674	02672	WATER WELLS
02684	02685	GAS DISTRIBUTION LINES
02688	02685	GAS DISTRIBUTION LINES
02511	02710	FOUNDATION DRAINAGE SYSTEMS
02667	02710	FOUNDATION DRAINAGE SYSTEMS
02704	02710	FOUNDATION DRAINAGE SYSTEMS
02766	02710	FOUNDATION DRAINAGE SYSTEMS
02772	02710	FOUNDATION DRAINAGE SYSTEMS
13156	02710	FOUNDATION DRAINAGE SYSTEMS
02512	02712	UNDERSLAB DRAINAGE
02704	02712	UNDERSLAB DRAINAGE
13156	02717	.NULL.
02752	02720	STORM DRAINS
02764	02720	STORM DRAINS
02661	02724	FORCE MAINS AND INVERTED SIPHONS
02531	02725	SAND DRAINS
02752	02725	SAND DRAINS
02752	02726	WASTEWATER COLLECTION
02266	02727	EROSION CONTROL
02752	02730	SEWER LINE MANHOLES
02752	02740	SEPTIC TANKS AND GREASE TRAPS
02776	02742	SIPHON TANK AND SIPHONS
15228	02744	GREASE INTERCEPTORS
02267	02745	IMHOFF TANKS
02545	02745	IMHOFF TANKS
02752	02766	SEWER LINE PIPE LINING
02710	02830	FENCES AND GATES
02836	02830	FENCES AND GATES
02831	02831	STEEL CHAIN-LINK FENCING

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



02712	02832	STEEL ROD AND BAR FENCING
02834	02832	STEEL ROD AND BAR FENCING
02712	02833	WROUGHT IRON ROD AND BAR FENCING
02834	02833	WROUGHT IRON ROD AND BAR FENCING
02710	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02836	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02841	02834	PRE-CAST CONCRETE AND MASONRY FENCING
02836	02835	PERMANENT WOOD FENCING
02712	02837	FARM-TYPE WIRE FENCING
02834	02837	FARM-TYPE WIRE FENCING
02842	02850	TRAFFIC SIGNS
02531	02860	PLAYING FIELDS
02863	02861	RECREATIONAL FACILITIES
02241	02921	TOPSOIL
02932	02933	SODDING AND SEEDING
02933	02933	SODDING AND SEEDING
02911	02950	PLANTINGS
03114	03105	CONCRETE FORMWORK
03116	03105	CONCRETE FORMWORK
03118	03105	CONCRETE FORMWORK
03126	03105	CONCRETE FORMWORK
03138	03105	CONCRETE FORMWORK
03142	03105	CONCRETE FORMWORK
03146	03105	CONCRETE FORMWORK
03150	03105	CONCRETE FORMWORK
03154	03105	CONCRETE FORMWORK
03158	03105	CONCRETE FORMWORK
03162	03105	CONCRETE FORMWORK
03170	03105	CONCRETE FORMWORK
03174	03105	CONCRETE FORMWORK
03182	03105	CONCRETE FORMWORK
03196	03105	CONCRETE FORMWORK
03132	03130	CONCRETE ACCESSORIES
03133	03130	CONCRETE ACCESSORIES
03198	03130	CONCRETE ACCESSORIES
03217	03205	CONCRETE REINFORCEMENT
03219	03205	CONCRETE REINFORCEMENT
03227	03205	CONCRETE REINFORCEMENT
03228	03205	CONCRETE REINFORCEMENT
03227	03227	STEEL STRESSING TENDONS FOR PRESTRESSED
03311	03305	CAST-IN-PLACE CONCRETE
03314	03305	CAST-IN-PLACE CONCRETE
03318	03305	CAST-IN-PLACE CONCRETE
03326	03305	CAST-IN-PLACE CONCRETE
03396	03305	CAST-IN-PLACE CONCRETE
03398	03305	CAST-IN-PLACE CONCRETE
03334	03334	CONCRETE CURING
03356	03356	GROUT
03362	03362	SHOTCRETE
03372	03372	SPECIALLY PLACED CONCRETE
03399	03399	ROLLER-COMPACTED CONCRETE
03411	03405	PRECAST ARCHITECTURAL CONCRETE
03414	03405	PRECAST ARCHITECTURAL CONCRETE



Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)

03454	03405	PRECAST ARCHITECTURAL CONCRETE
03474	03405	PRECAST ARCHITECTURAL CONCRETE
03490	03405	PRECAST ARCHITECTURAL CONCRETE
03404	03415	PRECAST-PRESTRESSED CONCRETE
03411	03415	PRECAST-PRESTRESSED CONCRETE
03412	03415	PRECAST-PRESTRESSED CONCRETE
03414	03415	PRECAST-PRESTRESSED CONCRETE
03440	03415	PRECAST-PRESTRESSED CONCRETE
03455	03415	PRECAST-PRESTRESSED CONCRETE
03474	03415	PRECAST-PRESTRESSED CONCRETE
03482	03415	PRECAST-PRESTRESSED CONCRETE
03490	03415	PRECAST-PRESTRESSED CONCRETE
03491	03415	PRECAST-PRESTRESSED CONCRETE
03522	03415	PRECAST-PRESTRESSED CONCRETE
03524	03415	PRECAST-PRESTRESSED CONCRETE
03414	03425	MISCELLANEOUS PRECAST ITEMS
03490	03425	MISCELLANEOUS PRECAST ITEMS
03436	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03510	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03520	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03526	03505	PRECAST LIGHTWEIGHT ROOF SLABS
03510	03510	GYP SUM CONCRETE DECKS
03510	03530	CEMENTITIOUS WOOD FIBER ROOF DECK SYSTEM
03536	03530	CEMENTITIOUS WOOD FIBER ROOF DECK SYSTEM
03368	03705	CONCRETE RESTORATION AND CLEANING
03720	03705	CONCRETE RESTORATION AND CLEANING
03730	03705	CONCRETE RESTORATION AND CLEANING
03396	03730	CONCRETE TOPPING
03740	03730	CONCRETE TOPPING
04150	04150	.NULL.
04190	04190	SCAFFOLDING - TUBULAR STEEL
04110	04202	UNIT MASONRY
04116	04202	UNIT MASONRY
04210	04202	UNIT MASONRY
04220	04202	UNIT MASONRY
04232	04202	UNIT MASONRY
04235	04202	UNIT MASONRY
04237	04202	UNIT MASONRY
04240	04202	UNIT MASONRY
04245	04202	UNIT MASONRY
04248	04202	UNIT MASONRY
04251	04202	UNIT MASONRY
04253	04202	UNIT MASONRY
04255	04202	UNIT MASONRY
04270	04202	UNIT MASONRY
04550	04202	UNIT MASONRY
10185	04202	UNIT MASONRY
04110	04210	BRICKWORK
04116	04210	BRICKWORK
04150	04210	BRICKWORK
04210	04210	BRICKWORK
04225	04210	BRICKWORK
04259	04210	BRICKWORK
04520	04210	BRICKWORK

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



04110	04250	TERRA COTTA
04116	04250	TERRA COTTA
04240	04250	TERRA COTTA
04251	04250	TERRA COTTA
04150	04405	STONework
04411	04405	STONework
04422	04405	STONework
04423	04405	STONework
04424	04405	STONework
04426	04405	STONework
04450	04405	STONework
04429	04510	MASONRY RESTORATION
04510	04510	MASONRY RESTORATION
04520	04510	MASONRY RESTORATION
04150	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05020	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05108	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05155	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
06056	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
10260	05020	ANCHOR BOLTS AND EXPANSION ANCHORS
05075	05120	STRUCTURAL STEEL
05120	05120	STRUCTURAL STEEL
05125	05120	STRUCTURAL STEEL
05130	05120	STRUCTURAL STEEL
05132	05120	STRUCTURAL STEEL
05134	05120	STRUCTURAL STEEL
05140	05120	STRUCTURAL STEEL
05150	05120	STRUCTURAL STEEL
05155	05120	STRUCTURAL STEEL
05130	05130	STEEL DECK
05134	05130	STEEL DECK
05314	05130	STEEL DECK
05155	05155	STEEL JOISTS
05210	05155	STEEL JOISTS
05180	05180	MISCELLANEOUS STANDARD METAL ARTICLES
05560	05180	MISCELLANEOUS STANDARD METAL ARTICLES
05155	05210	STEEL TRUSSES
05210	05210	STEEL TRUSSES
05120	05518	PIPE AND TUBE RAILINGS
05518	05518	PIPE AND TUBE RAILINGS
11940	05518	PIPE AND TUBE RAILINGS
05511	05520	METAL STAIRS
05512	05520	METAL STAIRS
05520	05520	METAL STAIRS
05528	05520	METAL STAIRS
11940	05520	METAL STAIRS
05120	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05520	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05528	05528	ORNAMENTAL HANDRAIL AND RAILINGS
10275	05528	ORNAMENTAL HANDRAIL AND RAILINGS
05130	05530	GRATING
05534	05530	GRATING
05542	05530	GRATING



Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)

05546	05530	GRATING
11024	05530	GRATING
05547	05540	CASTINGS
05178	05556	ORNAMENTAL SHEET METAL
05528	05556	ORNAMENTAL SHEET METAL
05556	05556	ORNAMENTAL SHEET METAL
05561	05556	ORNAMENTAL SHEET METAL
10214	05556	ORNAMENTAL SHEET METAL
11024	05556	ORNAMENTAL SHEET METAL
05814	05814	EXPANSION JOINT COVERS
05911	05910	WATER TREATMENT PLANT DEBRIS RACKS
05912	05910	WATER TREATMENT PLANT DEBRIS RACKS
05913	05910	WATER TREATMENT PLANT DEBRIS RACKS
05914	05910	WATER TREATMENT PLANT DEBRIS RACKS
05915	05910	WATER TREATMENT PLANT DEBRIS RACKS
06056	06056	TIMBER BRIDGE COMPONENTS
06056	06116	LIGHT WOODEN STRUCTURES FRAMING
06103	06116	LIGHT WOODEN STRUCTURES FRAMING
06116	06116	LIGHT WOODEN STRUCTURES FRAMING
06128	06116	LIGHT WOODEN STRUCTURES FRAMING
06190	06116	LIGHT WOODEN STRUCTURES FRAMING
06312	06116	LIGHT WOODEN STRUCTURES FRAMING
06140	06140	SHEATHING, SIDING, AND SUBFLOORING
06154	06140	SHEATHING, SIDING, AND SUBFLOORING
06164	06140	SHEATHING, SIDING, AND SUBFLOORING
06168	06140	SHEATHING, SIDING, AND SUBFLOORING
06182	06140	SHEATHING, SIDING, AND SUBFLOORING
06056	06181	WOOD TRUSSES
06116	06181	WOOD TRUSSES
06181	06181	WOOD TRUSSES
06190	06181	WOOD TRUSSES
06222	06220	MILLWORK
06226	06220	MILLWORK
06227	06220	MILLWORK
06230	06220	MILLWORK
06438	06220	MILLWORK
11940	06220	MILLWORK
06240	06240	CABINETS
06402	06240	CABINETS
06251	06250	WOOD PANELING
06255	06250	WOOD PANELING
06514	06514	.NULL.
06518	06610	.NULL.
06610	06610	.NULL.
07115	07110	BITUMINOUS WATERPROOFING
07112	07111	BITUMINOUS MEMBRANE WATERPROOFING
07115	07111	BITUMINOUS MEMBRANE WATERPROOFING
07110	07115	PLASTIC SHEET WATERPROOFING
07112	07115	PLASTIC SHEET WATERPROOFING
07114	07120	FLUID-APPLIED WATERPROOFING
07120	07120	FLUID-APPLIED WATERPROOFING
07146	07125	METAL WATERPROOFING
07131	07130	BENTONITE CLAY WATERPROOFING
07162	07160	BITUMINOUS DAMPPROOFING

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



07174	07170	SILICONE DAMPPROOFING
07182	07180	CEMENTITIOUS DAMPPROOFING
07112	07198	PLASTIC SHEET VAPOR BARRIERS
07210	07210	BATT AND BLANKET BUILDING INSULATION
07218	07210	BATT AND BLANKET BUILDING INSULATION
07242	07210	BATT AND BLANKET BUILDING INSULATION
13112	07210	BATT AND BLANKET BUILDING INSULATION
07202	07211	LOOSE OR GRANULAR FILL INSULATION
07210	07211	LOOSE OR GRANULAR FILL INSULATION
07218	07211	LOOSE OR GRANULAR FILL INSULATION
07210	07212	RIGID INSULATION
07216	07212	RIGID INSULATION
07218	07212	RIGID INSULATION
07223	07213	PERIMETER INSULATION
07215	07215	SPRAYED-ON INSULATION
07223	07223	ROOF INSULATION AND UNDERLAYMENT
07240	07223	ROOF INSULATION AND UNDERLAYMENT
07223	07224	ROOF INSULATION AND UNDERLAYMENT
07240	07224	ROOF INSULATION AND UNDERLAYMENT
07223	07225	ROOF INSULATION AND UNDERLAYMENT
07240	07225	ROOF INSULATION AND UNDERLAYMENT
07223	07226	ROOF INSULATION AND UNDERLAYMENT
07240	07226	ROOF INSULATION AND UNDERLAYMENT
07223	07227	ROOF INSULATION AND UNDERLAYMENT
07240	07227	ROOF INSULATION AND UNDERLAYMENT
07254	07256	SPRAYED-ON FIREPROOFING
07314	07314	SLATE SHINGLES
07322	07321	CLAY ROOFING TILES
07411	07410	PREFORMED ROOFING AND SIDING
07424	07410	PREFORMED ROOFING AND SIDING
07511	07463	ASBESTOS CEMENT ROOFING AND SIDING
07511	07510	BUILT-UP ROOFING
07515	07510	BUILT-UP ROOFING
07511	07530	SINGLE PLY ROOFING
07531	07530	SINGLE PLY ROOFING
07512	07550	INVERTED ROOF SYSTEMS
07511	07573	COMPOSITION TRAFFIC TOPPING
07411	07605	SHEET METAL
07621	07605	SHEET METAL
07622	07605	SHEET METAL
07624	07605	SHEET METAL
07625	07605	SHEET METAL
07717	07605	SHEET METAL
07729	07605	SHEET METAL
10350	07620	.NULL.
10355	07620	.NULL.
07726	07705	ROOF ACCESSORIES
15754	07705	ROOF ACCESSORIES
07811	07811	PLASTIC SKYLIGHTS
07822	07812	METAL-FRAMED SKYLIGHTS
07924	07920	SEALANTS
10355	07920	SEALANTS
08109	08110	HOLLOW METAL DOORS AND FRAMES



Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)

08114	08110	HOLLOW METAL DOORS AND FRAMES
08115	08110	HOLLOW METAL DOORS AND FRAMES
08116	08110	HOLLOW METAL DOORS AND FRAMES
08118	08110	HOLLOW METAL DOORS AND FRAMES
08119	08110	HOLLOW METAL DOORS AND FRAMES
08305	08110	HOLLOW METAL DOORS AND FRAMES
08115	08115	ALUMINUM DOORS AND FRAMES
08220	08220	WOOD DOORS AND FRAMES
08254	08220	WOOD DOORS AND FRAMES
08262	08220	WOOD DOORS AND FRAMES
08266	08220	WOOD DOORS AND FRAMES
08270	08220	WOOD DOORS AND FRAMES
08278	08220	WOOD DOORS AND FRAMES
08279	08220	WOOD DOORS AND FRAMES
08278	08278	.NULL.
08312	08312	ALUMINUM AND WOOD SLIDING GLASS DOORS
08316	08316	SLIDING FIRE DOORS
08317	08317	SECURITY VAULT DOORS
08332	08330	COILING (ROLLING) DOORS
08342	08330	COILING (ROLLING) DOORS
08369	08330	COILING (ROLLING) DOORS
08376	08330	COILING (ROLLING) DOORS
08356	08356	FLEXIBLE DOORS
08361	08360	OVERHEAD DOORS
08362	08360	OVERHEAD DOORS
08365	08360	OVERHEAD DOORS
08278	08379	WOOD SAFETY GLASS DOORS
08379	08379	WOOD SAFETY GLASS DOORS
08385	08385	SOUND RETARDANT DOORS
08278	08390	SCREEN AND STORM DOORS
08390	08390	SCREEN AND STORM DOORS
08394	08390	SCREEN AND STORM DOORS
08413	08410	ENTRANCES
08415	08410	ENTRANCES
08417	08410	ENTRANCES
08471	08471	REVOLVING DOORS
08512	08512	METAL WINDOWS
10535	08512	METAL WINDOWS
08520	08520	ALUMINUM WINDOWS
08524	08520	ALUMINUM WINDOWS
10535	08520	ALUMINUM WINDOWS
08604	08610	WOOD WINDOWS
08610	08610	WOOD WINDOWS
08620	08610	WOOD WINDOWS
08624	08610	WOOD WINDOWS
08632	08610	WOOD WINDOWS
08640	08610	WOOD WINDOWS
08704	08710	FINISH HARDWARE
08708	08710	FINISH HARDWARE
08709	08710	FINISH HARDWARE
08710	08710	FINISH HARDWARE
08713	08710	FINISH HARDWARE
08714	08710	FINISH HARDWARE
08715	08710	FINISH HARDWARE

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



08716	08710	FINISH HARDWARE
08717	08710	FINISH HARDWARE
08718	08710	FINISH HARDWARE
08719	08710	FINISH HARDWARE
08726	08710	FINISH HARDWARE
08728	08710	FINISH HARDWARE
08729	08710	FINISH HARDWARE
08734	08710	FINISH HARDWARE
08754	08710	FINISH HARDWARE
10183	08710	FINISH HARDWARE
10605	08710	FINISH HARDWARE
10615	08710	FINISH HARDWARE
08278	08800	GLASS AND GLAZING
08755	08800	GLASS AND GLAZING
08818	08800	GLASS AND GLAZING
08820	08800	GLASS AND GLAZING
08832	08800	GLASS AND GLAZING
08836	08800	GLASS AND GLAZING
08844	08800	GLASS AND GLAZING
08852	08800	GLASS AND GLAZING
08855	08800	GLASS AND GLAZING
08862	08800	GLASS AND GLAZING
08872	08800	GLASS AND GLAZING
08876	08800	GLASS AND GLAZING
08884	08800	GLASS AND GLAZING
08894	08800	GLASS AND GLAZING
08895	08800	GLASS AND GLAZING
08415	08915	ALUMINUM WINDOW WALLS/CURTAIN WALLS
08924	08915	ALUMINUM WINDOW WALLS/CURTAIN WALLS
09134	09210	PLASTER REPAIRS
09200	09210	PLASTER REPAIRS
09203	09210	PLASTER REPAIRS
09211	09210	PLASTER REPAIRS
09213	09210	PLASTER REPAIRS
09263	09210	PLASTER REPAIRS
09312	09315	TILE FLOORING
09334	09315	TILE FLOORING
09340	09315	TILE FLOORING
09312	09320	CERAMIC WALL TILE
09400	09405	TERRAZZO
09414	09405	TERRAZZO
09421	09405	TERRAZZO
09721	09405	TERRAZZO
10185	09405	TERRAZZO
09134	09510	ACOUSTICAL CEILINGS
09510	09510	ACOUSTICAL CEILINGS
09512	09510	ACOUSTICAL CEILINGS
09514	09510	ACOUSTICAL CEILINGS
09519	09510	ACOUSTICAL CEILINGS
09534	09530	ACOUSTICAL INSULATION AND BARRIERS
09526	09535	SOUND ABSORBING PANELS
09564	09560	WOOD STRIP FLOORING
09565	09566	WOOD BLOCK INDUSTRIAL FLOORING



Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)

09564	09570	WOOD PARQUET FLOORING
09564	09596	GYMNASIUM FLOORING
09664	09651	RESILIENT FLOORING - CEMENTITIOUS UNDERL
09661	09655	RESILIENT FLOORING
09721	09670	FLUID-APPLIED RESILIENT FLOORING
09661	09675	CONDUCTIVE VINYL TILE FLOORING
09682	09685	CARPETING
09691	09685	CARPETING
09721	09720	EPOXY FLOORING
09721	09731	CONDUCTIVE ELASTOMERIC LIQUID FLOORING
09634	09750	BRICK FLOORING
09634	09751	LIGHT-DUTY BRICK FLOORING
09910	09910	EXTERIOR PAINTING
09920	09920	INTERIOR PAINTING
05155	09941	PAINTING OF WATER STORAGE TANK
09960	09952	WALL COVERINGS
09970	09952	WALL COVERINGS
10266	09952	WALL COVERINGS
10050	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10160	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10185	10160	COMPARTMENTS AND CUBICLES FOR SHOWER AND
10275	10275	ACCESS AND PEDESTAL FLOORS
10350	10350	.NULL.
10350	10351	FLAGPOLES
10355	10351	FLAGPOLES
10410	10410	DIRECTORY AND BULLETIN BOARDS
10410	10412	.NULL.
10430	10430	SIGNS
10451	10451	.NULL.
10451	10452	SECURITY SCREENS
10505	10505	METAL LOCKERS
10520	10520	FIRE EXTINGUISHERS, CABINETS, AND ACCESS
10183	10550	POSTAL SPECIALTIES
10551	10550	POSTAL SPECIALTIES
10553	10550	POSTAL SPECIALTIES
10260	10605	WIRE MESH PARTITIONS
10505	10605	WIRE MESH PARTITIONS
10605	10605	WIRE MESH PARTITIONS
10615	10615	DEMOUNTABLE PARTITIONS
10050	10630	MOVABLE METAL PARTITIONS
10630	10630	MOVABLE METAL PARTITIONS
10677	10677	METAL STORAGE SHELVING
11169	10677	METAL STORAGE SHELVING
10820	10820	TOILET ACCESSORIES
10911	10911	WARDROBES
11024	11024	VAULT DOOR UNITS
11061	11061	THEATER & STAGE EQUIPMENT
11106	11106	REFRIGERATORS
11910	11106	REFRIGERATORS
11132	11132	PROJECTION SCREENS
11150	11150	PARKING CONTROL EQUIPMENT
11161	11160	PLATFORM AND DOCK LIFTS
11161	11161	PLATFORM AND DOCK LEVELERS
11161	11165	PLATFORM AND DOCK BUMPERS

Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)



11106	11402	FOOD SERVICE EQUIPMENT
11402	11402	FOOD SERVICE EQUIPMENT
11420	11402	FOOD SERVICE EQUIPMENT
11910	11402	FOOD SERVICE EQUIPMENT
11415	11415	UNIT KITCHENS
11910	11415	UNIT KITCHENS
11420	11420	RANGES AND OVENS
11910	11420	RANGES AND OVENS
11484	11484	GYMNASIUM EQUIPMENT
11484	11486	DEMOUNTABLE BLEACHERS (EXTERIOR)
11140	11501	PAINT SPRAY BOOTH
11600	11600	METAL MEDICAL CASEWORK
11700	11600	METAL MEDICAL CASEWORK
11600	11700	LABORATORY AND MEDICAL EQUIPMENT
11700	11700	LABORATORY AND MEDICAL EQUIPMENT
11910	11910	DISHWASHERS
11910	11912	GARBAGE DISPOSERS
11920	11920	CLOTHES DRYERS
11920	11922	CLOTHES WASHERS
11980	11980	TARGET FIRING RANGES (EXTERIOR)
12531	12531	WINDOW TREATMENT HARDWARE
13090	13090	RADIATION PROTECTION
13112	13112	PRE-ENGINEERED STRUCTURES
13153	13151	.NULL.
11024	13800	FLOOR SAFES
13800	13800	FLOOR SAFES
14211	14245	.NULL.
14211	14250	.NULL.
14400	14400	.NULL.
14405	14400	.NULL.
14401	14410	.NULL.
14211	14420	.NULL.
14416	14450	.NULL.
14551	14510	.NULL.
02368	14570	.NULL.
02530	14570	.NULL.
05008	14570	.NULL.
05060	14570	.NULL.
05075	14570	.NULL.
05120	14570	.NULL.
05130	14570	.NULL.
05134	14570	.NULL.
05150	14570	.NULL.
05155	14570	.NULL.
05175	14570	.NULL.
15141	14570	.NULL.
15162	14570	.NULL.
15172	14570	.NULL.
15199	14570	.NULL.
15286	14570	.NULL.
15742	14570	.NULL.
16900	14570	.NULL.
14611	14602	.NULL.



Job Order Contract Specifications

MEDCOM Support Team, Fort Worth (UPB localized to Fort Lewis - WA)

14660	14602	.NULL.
14611	14650	ASH HOISTS
02768	15060	MECHANICAL PIPING
11140	15060	MECHANICAL PIPING
15141	15060	MECHANICAL PIPING
15151	15060	MECHANICAL PIPING
15162	15060	MECHANICAL PIPING
15172	15060	MECHANICAL PIPING
15188	15060	MECHANICAL PIPING
15192	15060	MECHANICAL PIPING
15193	15060	MECHANICAL PIPING
15194	15060	MECHANICAL PIPING
02645	15100	VALVES
11402	15100	VALVES
15103	15100	VALVES
15104	15100	VALVES
15109	15100	VALVES
15111	15100	VALVES
15112	15100	VALVES
15115	15100	VALVES
15116	15100	VALVES
15118	15100	VALVES
15121	15100	VALVES
15123	15100	VALVES
15192	15100	VALVES
15193	15100	VALVES
15194	15100	VALVES
15197	15100	VALVES
15199	15100	VALVES
15622	15100	VALVES
15640	15100	VALVES
15742	15100	VALVES
05130	15120	PIPING ACCESSORIES
07624	15120	PIPING ACCESSORIES
15114	15120	PIPING ACCESSORIES
15115	15120	PIPING ACCESSORIES
15162	15120	PIPING ACCESSORIES
15164	15120	PIPING ACCESSORIES
15172	15120	PIPING ACCESSORIES
15174	15120	PIPING ACCESSORIES
15176	15120	PIPING ACCESSORIES
15508	15120	PIPING ACCESSORIES
15510	15120	PIPING ACCESSORIES
15635	15120	PIPING ACCESSORIES
15672	15120	PIPING ACCESSORIES
15698	15120	PIPING ACCESSORIES
11140	15160	PUMPS
15141	15160	PUMPS
15142	15160	PUMPS
15143	15160	PUMPS
15145	15160	PUMPS
15146	15160	PUMPS
15151	15160	PUMPS
15286	15160	PUMPS

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15290	15160	PUMPS
15291	15160	PUMPS
15292	15160	PUMPS
15293	15160	PUMPS
15295	15160	PUMPS
15297	15160	PUMPS
15298	15160	PUMPS
15182	15261	INSULATION FOR ABOVEGROUND PIPE
15188	15261	INSULATION FOR ABOVEGROUND PIPE
15567	15261	INSULATION FOR ABOVEGROUND PIPE
02663	15262	INSULATION FOR UNDERGROUND PIPE
15188	15262	INSULATION FOR UNDERGROUND PIPE
15190	15290	DUCTWORK INSULATION
15567	15290	DUCTWORK INSULATION
10521	15301	FIRE PROTECTION SYSTEMS
10522	15301	FIRE PROTECTION SYSTEMS
15411	15301	FIRE PROTECTION SYSTEMS
15414	15301	FIRE PROTECTION SYSTEMS
15416	15301	FIRE PROTECTION SYSTEMS
15417	15301	FIRE PROTECTION SYSTEMS
15418	15301	FIRE PROTECTION SYSTEMS
15508	15301	FIRE PROTECTION SYSTEMS
15560	15301	FIRE PROTECTION SYSTEMS
10186	15401	INTERIOR PLUMBING
11474	15401	INTERIOR PLUMBING
11475	15401	INTERIOR PLUMBING
15104	15401	INTERIOR PLUMBING
15107	15401	INTERIOR PLUMBING
15109	15401	INTERIOR PLUMBING
15116	15401	INTERIOR PLUMBING
15220	15401	INTERIOR PLUMBING
15306	15401	INTERIOR PLUMBING
15310	15401	INTERIOR PLUMBING
15601	15401	INTERIOR PLUMBING
15731	15401	INTERIOR PLUMBING
13205	15451	STEEL TANKS
13205	15451	STEEL TANKS
13210	15451	STEEL TANKS
13214	15451	STEEL TANKS
13215	15451	STEEL TANKS
15176	15451	STEEL TANKS
13205	15452	PLASTIC TANKS
13205	15452	PLASTIC TANKS
13210	15452	PLASTIC TANKS
13214	15452	PLASTIC TANKS
13154	15475	POOL EQUIPMENT
13155	15475	POOL EQUIPMENT
13156	15475	POOL EQUIPMENT
13158	15475	POOL EQUIPMENT
15152	15481	COMPRESSED AIR EQUIPMENT
15726	15481	COMPRESSED AIR EQUIPMENT
15511	15556	FIRE TUBE BOILERS
15622	15556	FIRE TUBE BOILERS



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15513	15557	WATER TUBE BOILERS
15509	15558	HIGH TEMPERATURE WATER BOILERS
15510	15558	HIGH TEMPERATURE WATER BOILERS
15513	15558	HIGH TEMPERATURE WATER BOILERS
15509	15559	CAST-IRON BOILERS AND FIREBOXES
15568	15573	DRAFT CONTROL EQUIPMENT
02517	15576	BREECHING
04225	15576	BREECHING
04227	15576	BREECHING
04260	15576	BREECHING
04554	15576	BREECHING
15569	15576	BREECHING
15569	15577	STACKS
13215	15581	GAS METERS AND REGULATORS
13215	15590	FUEL HANDLING SYSTEMS
15605	15590	FUEL HANDLING SYSTEMS
15287	15610	WARM AIR FURNACES
15542	15610	WARM AIR FURNACES
15720	15610	WARM AIR FURNACES
15728	15670	CONDENSERS
15544	15680	REFRIGERANT EQUIPMENT
15672	15680	REFRIGERANT EQUIPMENT
15690	15680	REFRIGERANT EQUIPMENT
15720	15680	REFRIGERANT EQUIPMENT
15729	15680	REFRIGERANT EQUIPMENT
15635	15683	REFRIGERATION SPECIALTIES
15770	15683	REFRIGERATION SPECIALTIES
15680	15711	NATURAL DRAFT COOLING TOWERS
15730	15711	NATURAL DRAFT COOLING TOWERS
15680	15712	FORCED DRAFT AND INDUCED DRAFT COOLING T
15730	15712	FORCED DRAFT AND INDUCED DRAFT COOLING T
15541	15751	COILS
15723	15751	COILS
15750	15751	COILS
15549	15760	STEAM AND HOT WATER UNIT HEATERS
15547	15781	PACKAGED HEATING AND COOLING UNITS
15710	15781	PACKAGED HEATING AND COOLING UNITS
15717	15781	PACKAGED HEATING AND COOLING UNITS
15721	15781	PACKAGED HEATING AND COOLING UNITS
15713	15782	PACKAGED HEAT PUMPS
11474	15800	HUMIDITY CONTROL EQUIPMENT
15566	15800	HUMIDITY CONTROL EQUIPMENT
15565	15830	RADIATORS
15752	15830	RADIATORS
16830	15830	RADIATORS
08372	15834	.NULL.
15542	15840	INDUCTION UNITS
15708	15855	AIR HANDLING UNITS
15763	15855	AIR HANDLING UNITS
15733	15860	CENTRIFUGAL FANS
08372	15865	AXIAL FLOW FANS
15733	15865	AXIAL FLOW FANS
15733	15871	POWER ROOF VENTILATORS
15754	15871	POWER ROOF VENTILATORS

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15747	15881	DIFFUSERS, REGISTERS, GRILLES, AND LOUVE
15749	15881	DIFFUSERS, REGISTERS, GRILLES, AND LOUVE
15740	15886	AIR CLEANING DEVICES
15764	15886	AIR CLEANING DEVICES
15635	15887	TAILPIPE EXHAUST EQUIPMENT
13093	15890	DUCTWORK AND ACCESSORIES
15567	15890	DUCTWORK AND ACCESSORIES
15751	15890	DUCTWORK AND ACCESSORIES
15751	15915	CONTROL AND FIRE DAMPERS
15890	15920	SOUND ATTENUATORS
13215	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15149	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15640	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15742	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15751	15951	CONTROL DEVICES FOR MECHANICAL EQUIPMENT
15761	15990	TESTING AND BALANCING OF HVAC SYSTEMS
16011	16032	WIRING SYSTEMS EQUIPMENT
16015	16032	WIRING SYSTEMS EQUIPMENT
16017	16032	WIRING SYSTEMS EQUIPMENT
16018	16032	WIRING SYSTEMS EQUIPMENT
16022	16032	WIRING SYSTEMS EQUIPMENT
16024	16032	WIRING SYSTEMS EQUIPMENT
16026	16032	WIRING SYSTEMS EQUIPMENT
16029	16032	WIRING SYSTEMS EQUIPMENT
16032	16032	WIRING SYSTEMS EQUIPMENT
16056	16032	WIRING SYSTEMS EQUIPMENT
16109	16032	WIRING SYSTEMS EQUIPMENT
16113	16032	WIRING SYSTEMS EQUIPMENT
16119	16032	WIRING SYSTEMS EQUIPMENT
16121	16032	WIRING SYSTEMS EQUIPMENT
16122	16032	WIRING SYSTEMS EQUIPMENT
16153	16032	WIRING SYSTEMS EQUIPMENT
16211	16032	WIRING SYSTEMS EQUIPMENT
16213	16032	WIRING SYSTEMS EQUIPMENT
16232	16032	WIRING SYSTEMS EQUIPMENT
16233	16032	WIRING SYSTEMS EQUIPMENT
16234	16032	WIRING SYSTEMS EQUIPMENT
16625	16032	WIRING SYSTEMS EQUIPMENT
16114	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16115	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16117	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16119	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16123	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16153	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16181	16110	OVERHEAD ELECTRICAL DISTRIBUTION SYSTEMS
16111	16111	FIBER OPTIC DATA TRANSMISSION SYSTEM
16114	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16115	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16117	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16120	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16153	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16711	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST
16712	16115	UNDERGROUND ELECTRICAL DISTRIBUTION SYST



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16121	16121	INSTITUTIONAL ELECTRIC HEATING EQUIPMENT
16123	16123	ELECTRICAL DISTRIBUTION SYSTEM GROUNDING
16181	16123	ELECTRICAL DISTRIBUTION SYSTEM GROUNDING
16233	16233	CLOCK AND PROGRAM SYSTEMS
16813	16233	CLOCK AND PROGRAM SYSTEMS
16315	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16316	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16323	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16324	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16325	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16326	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16328	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16329	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16331	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16332	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16333	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16336	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16337	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16338	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16339	16300	MOTOR CONTROL CENTERS, PANELBOARDS AND L
16313	16313	ELECTRIC MOTORS
16353	16313	ELECTRIC MOTORS
16412	16416	TRANSFORMERS
16416	16416	TRANSFORMERS
16439	16439	UNINTERRUPTIBLE POWER SYSTEM (UPS)
16511	16511	AUTOMATIC TRANSFER AND BY-PASS/ISOLATION
16512	16511	AUTOMATIC TRANSFER AND BY-PASS/ISOLATION
16513	16513	MOTOR GENERATOR SETS
16610	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16611	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16613	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16614	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16615	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
16631	16600	LUMINAIRE BALLASTS AND TRANSFORMERS
10050	16610	LUMINAIRES
16610	16610	LUMINAIRES
16611	16610	LUMINAIRES
16612	16610	LUMINAIRES
16613	16610	LUMINAIRES
16614	16610	LUMINAIRES
16615	16610	LUMINAIRES
16616	16610	LUMINAIRES
16622	16610	LUMINAIRES
16631	16610	LUMINAIRES
16645	16610	LUMINAIRES
16661	16610	LUMINAIRES
16926	16610	LUMINAIRES
16616	16616	STREET AND AREA LIGHTING CONTROLS
13219	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16660	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16838	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16839	16660	CENTRAL MONITORING, CONTROL, AND INSTRUM
16680	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16682	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA

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16683	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16684	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16688	16680	AIRFIELD AND HELIPORT LIGHTING AND VISUA
16122	16814	TELEPHONE SYSTEM, OUTSIDE PLANT
16814	16814	TELEPHONE SYSTEM, OUTSIDE PLANT
16820	16820	CATHODIC PROTECTION SYSTEM FOR UNDERGROU
16821	16820	CATHODIC PROTECTION SYSTEM FOR UNDERGROU
13205	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
13210	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
16820	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
16821	16821	CATHODIC PROTECTION OF STEEL WATER TANKS
16121	16825	FIRE ALARM AND DETECTION EQUIPMENT
16822	16825	FIRE ALARM AND DETECTION EQUIPMENT
16823	16825	FIRE ALARM AND DETECTION EQUIPMENT
16824	16825	FIRE ALARM AND DETECTION EQUIPMENT
16825	16825	FIRE ALARM AND DETECTION EQUIPMENT
11930	16830	ELECTRIC UNIT HEATERS
16830	16830	ELECTRIC UNIT HEATERS
16840	16840	LIGHTNING ARRESTERS
16919	16840	LIGHTNING ARRESTERS
16845	16845	NURSE CALL SYSTEM
16850	16850	PUBLIC ADDRESS EQUIPMENT
16855	16850	PUBLIC ADDRESS EQUIPMENT
16860	16860	MASTER ANTENNA TELEVISION SYSTEM
16862	16860	MASTER ANTENNA TELEVISION SYSTEM
16865	16860	MASTER ANTENNA TELEVISION SYSTEM
16617	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16921	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16922	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16923	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16924	16900	POLES FOR STREET AND AREA LIGHTING SYSTE
16423	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16424	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16427	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16916	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16917	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16918	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16921	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16922	16916	ELECTRICAL DISTRIBUTION SYSTEM SUBSTATIO
16917	16917	ELECTRICAL DISTRIBUTION SYSTEM CAPACITOR
16925	16917	ELECTRICAL DISTRIBUTION SYSTEM CAPACITOR
16340	16925	HIGH-VOLTAGE DISCONNECTING DEVICES
16925	16925	HIGH-VOLTAGE DISCONNECTING DEVICES
02010	19120	DEMOLITION
02011	19120	DEMOLITION
02012	19120	DEMOLITION
02046	19120	DEMOLITION
02049	19120	DEMOLITION
02055	19120	DEMOLITION
02057	19120	DEMOLITION
02058	19120	DEMOLITION
02059	19120	DEMOLITION
02068	19120	DEMOLITION



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02069	19120	DEMOLITION
02070	19120	DEMOLITION
02072	19120	DEMOLITION

JOB ORDER CONTRACT UNIT PRICE BOOK VOLUME IV

FOR:

**MEDCOM SUPPORT TEAM
FORT WORTH**

(UPB localized to Fort Lewis – WA)



FINAL (REVISION 001)

JULY 2001

PREPARED BY:



U.S. COST INCORPORATED

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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	Ampere; Area	Annunc	Announcer
A-E	Architect and Engineer	Anod	Anodized
A&I	Assemble and Install	APO	Advance Post Office
A/Comp	Air Compressor	Appl	Application, Applies
AB	Anchor Bolt(s)	Applr	Applicator
Abrsv	Abrasive	Appr	Approach
Abs	Absorbing, Acrylonitrile Butadiene Styrene, Asbestos Bonded Steel	Approx	Approximate
Absorb	Absorbing, Absorber	Apt	Apartment
Abv	Above	Apvd	Approved
AC	Acre; Air Conditioning; Alternating Current; Asbestos Cement; Plywood Grade-AC	AR	Army Regulation
Acc	Accessories	Arch	Architect
Acfl	Access Floor	Arrst, Arsr	Arrestor/s
ACI	American Concrete Institute	Asb	Asbestos
Acous	Acoustical	ASBC	American Standard Building Code
Acry, Acryl	Acrylic	ASHRAE	American Society of Heating, Refrigeration and Conditioning Engineers
Acs	Access	ASME	American Society of Mechanical Engineers
ACSIM	Assistant Chief of Staff for Installation Management	Asph	Asphalt
ACSR	Aluminum Conductor Steel Reinforced	Assembl	Assemble/d
ACU	Air Conditioning Unit	Assy	Assembly/ies
AD	Plywood, Grade A & D	ASTM	American Society for Testing Materials
Addit	Additional	Attachmt	Attachment/s
Addl	Additional	Attch	Attach/ed
Adh	Adhesive	Auto	Automatic
Adj	Adjustable	Aux	Auxiliaries
Admin	Administration	Avg	Average
Adpt	Adapter	AWG	American Wire Gauge
Adv	Advanced	B&B	Grade B and Better
AF	Audio Frequency	B&S	Bell and Spigot
AFARS	Army Federal Acquisition Regulation Supplement	B&W	Black and White
AG(BX)	AC(Bx) Wire Insulation Type	B' Fly	Butterfly
AGA	American Gas Association	Ba	Bathroom
Agg	Aggregate	Backbd	Backboard
Ahr	Ampere Hours	Bal	Balance
AHU	Air Handling Unit	BAFO	Best and Final Offer
AIA	American Institute of Architects	BAMA	BAMA
AIC	Ampere Interruption Capacity	Barr	Barrier
Al	Aluminum	Bat	Battery
Alb	Albalite	Bbl	Barrel/s
Allow	Allowance	Bcc	Body Centered Cubic
Alm	Alarm	Bckntd	Back Mounted
Alt	Alternate; Alter; Altitude	BCM	Business Clearance Memorandum
Alum	Aluminum	BCY	Bank Cubic Yard
AM	Ante Meridiem (Time)	BD	Belt Drive, Board, Bus Duct
Amp	Ampere	Bd	Board
Ampl	Amplifier	BDD	Back Draft Damper
Ant	Amount	BE	Beveled End
Anch	Anchor/s	BF	Board Feet
Angl	Angle	Bfill	Back fill
		BHP	Boiler Horse Power, Brake Horse Power
		BI	Built In, Black Iron

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Bi chrm	Bichromated	CB	Catch Basin, Circuit Breaker
Bi dir	Bi-directional	CBD	Commerce Business Daily
Bit	Built, Bituminous	Cc	Cubic Centimeter
Bitum	Bituminous	CCA	Chromate Copper Arsenate
Bk	Bank, Backed	CCASS	Construction Contractor Appraisal Support System
Bkd	Backed	CCC	Central Communications Controller
Bkrs	Breakers	CCF	Hundred Cubic Feet
Bkt	Bucket	Ccs	Cubic Centimeter Per Second
Bl	Blade, Blast/ed	CCTV	Closed Circuit Television
Bl chrs	Bleachers	CD	Candela, Compact Disk, Grade of Plywood
Blck	Block	CDK	Grade Plywood C & D w/Exterior Glue
Bld	Building	CEG	Control Estimate Generator
Bldg	Building	Ceil	Ceiling
Blk	Black, Block	Cem	Cement
Blr	Boiler	Cer	Ceramic
Blst	Blast	CF	Cubic Foot
Blt	Bolt	CFM	Cubic Feet Per Minute
Blwr	Blower	CG	Center of Gravity
Bn	Beam	Chem	Chemical
BN&G	Bolt, Nut & Gasket Sets	Chgr	Charger
Bondg	Bonding	Chld	Chilled
Bot	Bottom	Chlor	Chloride
BP	Bypass	Chn	Chain
BPM	Blows Per Minute	Chnl	Channel
Br	Bridge, Bedroom	CHW	Chilled Water, Commercial Hot Water
Brd	Board	CI	Cast Iron, Cubic Inch, Cast Iron
Brg	Bearing	Cig	Ceiling
Brgt	Bright	CIP	Cast In Place
Brk	Bracket(s), Brick	CISP	Cast Iron Soil Pipe
Brkr	Breaker	Circ	Circuit, Circular
Brkt	Bracket	Ck	Circuit
Brkwy	Breakaway	CL	Centerline, Class, Car Load Lot
Brs	Brass	Clcm	Calcium
Brz	Bronze	CLF	Hundred Linear Feet, Current Limiting Fuse
Bsnt	Basement	Clg	Cooling
Bsn	Basin	Clk	Clock
BTU	British Thermal Unit	Clm	Column
BTUH	British Thermal Units Per Hour	Clp	Clamp, Cross Linked Polyethylene
BU	Built Up	Clr	Clear
BUR	Built Up Roof	Clsd	Closed
BW	Barbed Wire, Butt Weld	cm	Centimeter/s
Bx	Box, Interlocked Armor Cable	Cn	Crane
Ca	Cable, Commercial Activity	CMH	Cubic Meters Per Hour
Cab	Cabinet, Cab	CMM	Cubic Meters Per Minute
Cabl	Cable	CMP	Corrugated Metal Pipe
CACES	Computer Aided Cost Estimating System	Compd	Compound
Calc	Calculated	Comp	Complete
Camr	Camera	Compste	Composite
Cap	Capacity, Contract Administration Plan	Compct, Compctd	Compact/ed
Capac	Capacity	CMU	Concrete Masonry Unit
Carb	Carbide	CN	Change Notice

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Cnc1	Concealed	Creos	Creosote
Cnd	Conduit	Crn	Chrome
Cndct	Conductor	Crpt	Carpet
Cnds	Condensate	Crs	Course
Cnr	Corner	CRT	Cathode-Ray Tube
Cntd	Contained	Crvd	Curved
Cntfgl	Centrifugal	Cs	Carbon Steel, Constant Shear Bar Joist
Cntr	Center, Contractor	CSF	Hundred Square Feet
Cntr	Container, Center	CSI	Construction Specifications Institute
Cntrf	Centrifuge	ct	Court
CO2	Carbon Dioxide	CT's	Current Transformers
Coax	Coaxial Cable	Ctd	Coated
Coilg	Coiling	Ctr	Center
Col	Column	Ctrl	Control, Central
Col1	Collector, Collection	CTS	Copper Tube Size
Comb	Combination	CU	Copper
Conl	Commercial	CUDS	Cellular Under-floor Duct System
Comm	Communication	Cu Ft	Cubic Feet
Comp	Compaction, Compartment, Compression	Culv	Culvert
Compn	Compensated	Cur	Current
Conpr	Compressor	Curt	Curtain
Conc	Concrete	Cush	Cushion
Cond	Conduit	Cvr	Cover (ing)
Condtr	Conditioner	CW	Continuous Wave, Cool White, Cold Water
Condv	Conductive	CWP	Cold Working Pressure, Cold Water Pipe
Conf	Conference	CW	Hundred Weight
Conn	Connection	CWK	Cool White Deluxe
Comtr	Connector	cxv	Copper to Copper
Cons	Construction	CY	Cubic Yard (s)
Const	Construction	CY/Hr	Cubic Yards per Hour
Cont	Contact, Continuous	Cyc	Cycle
Containmt	Containment	Cyl	Cylindrical
Contam	Contaminated	D	Degree, Diameter, Deep, Penny(Nail Size), Dome
CONUS	Continental United States	D&F	Determination and Findings
Conv	Convertible	D&S	Drain & Sewer
Convent1	Conventional	DA	Department of the Army
COR	Contracting Officer's Representative	DB	Distribution Box, Decibel
Corr	Corridor(s), Corrugated	dbl	Double
Cour	Course	DC	Direct Current
Cov	Cover	DD	Direct Drive
C/P	Cedar on Paneling	Decon	Decontamination
CPA	Control Point Adjustment, Certified Public Accountant	Defl	Deflect(ion)
Cpl	Complete	Deg	Degree
Cplg	Coupling	Dehyd	Dehydrated
Cplr	Coupler	Del	Delivery
CPM	Critical Path Method	Dem	Demolish
CPVC	Chlorinated Polyvinyl Chloride	Denob	Demobilization
CPW	Center for Public Works (obs. See ISC)	Dens	Density
C Pr	Hundred Pair	Dent	Dental, Dentist, Dentistry
CRC	Cold Rolled Channel	Dep	Depth
		Detect	Detection, Detector

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Dev	Device, Develop	Dectr	Detector
DF	Double Face	Dty	Duty
DFARS	DOD FAR Supplement	DuPx	Duplex
DFU	Drainage Fixture Units	DW	Drain Waste Vent
DH	Double Hung	Dx	Duplex, Deluxe White, Direct Expansion
DHW	Domestic Hot Water	Dzr	(Bull)Dozer
Di	Ductile Iron	Dyn	Dyne
Dia	Diameter	E&G	Enclosed and Gasketed
Diag	Diagonal	E	Eccentricity, Equipment Only, East
Diam	Diameter	Ea	Each
Diamd	Diamond	EB	Expansion Bolt, Encased Burial
Diap	Diaphragm	Econ	Economy
Dif	Differential	Economz	Economizer
Diff	Diffuser(s), Difference	EDP	Electronic Data Processing
Dim	Dimension, Dimensional	EDR	Equivalent Direct Radiation
Dir	Direct	Ef	Effect
DirBi	Direct Burial	Eff	Efficiency
Disc	Disconnect, Discharge	EIFS	Exterior Insulation Finish System
Disch	Discharge	Ej	Expansion Joint
Disp	Dispenser, Disposal	Elast	Elastomeric
Disp	Display	Ele	Element
Dispbl	Disposable	Elec	Electric, Electrical
Dist	Distribution, Distance	Elect	Electric, Electrical
Distr	Distribution	Electrmag	Electromagnetic
Distrub	Disturbance	Elev	Elevator, Elevated
Div	Division	ElI	Elbow
DK	Dark, Dock, Deck	EM	Enlisted Man
Dkg	Docking	Emb	Embedded
DL	Dead Load	EMS	Energy Monitor and Control System
DLH	Deep Long Span Bar Joist	Emer	Emergency
Dmr	Damper	EMT	Electrical Metallic Conduit
Dn	Down	En	Enamel, Enameled
Dnse	Dense	Encl	Enclosure
DO	Ditto	Eng	Engineer, Engineering
DOC	Directorate of Contracting	ENT	Electrical Non-Metallic Tubing; Ear, Nose, and Throat
DOD	Department of Defense	Entr	Entrance
Donem	Domestic	Envir	Environmental
Downs	Downspout	EP	Explosion Proof
Dp	Depth	EPDM	Ethylene Propylene Diene Monomer
DPDT	Double Pole, Double Throw	EPS	Expanded Polystyrene, Engineered Performance Standards
DPST	Double Pole, Single Throw	EPSD	Engineering Plans and Services Division
DPW	Directorate of Public Works	Epxy	Epoxy
Dr	Door, Driven	Eq	Equipment, Equation
Drainb	Drain board	Eqpt	Equipment
Drink	Drinking	ER	Emergency Room
Drn	drain	ERMd	Engineer Resource Management Division
Drp	Drop	ERW	Electric Resistance Welded
DS	Dust Proof, Double Strength	ES	Energy saver
DSA	Double Strength A Grade	Est	Estimated
DSB	Double Strength B Grade		
DSI	Diesel		

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Estatic	Electrostatic	Flex	Flexible
ESU	Electrostatic Units	Flg	Flange
Etc	Excetera, And So Forth	Flgd	Flanged
Evap	Evaporator, Evaporate	Flo	Flow
EW	Each Way	Fl Oz	Fluid Ounces
EW	Entering Water Temperature	Floodlt	Floodlight
Exc	Excavate	Flr	Floor
Excav	Excavator	Flt	Flat, Float
Exchr	Exchanger	Fluor	Fluorescent
Excl	Excluding	FM	Frequency Mdulation, Factory Mutual
Exer	Exerciser	Fmat	Format
Exh	Exhaust	Fng	Framing
Exp	Expansion, Expose(d)	Fns	Forms
Expan	Expansion	Fnce	Fence
Expd	Expanded	Fndtn	Foundation
Ext	Exterior, External	Fornbd	Form board
Extgr	Extinguisher	Fount	Fountain
Extn	Extension	FPM	Feet Per Minute
Extru	Extrusion	Fprf	Fireproof
F&I	Furnish & Install	FPT	Female Pipe Thread
F&S	Form & Strip	FR	Fire Rated
F	Fiber Stress, Fahrenheit, Female, Fill	Fr	Frame
F/H	Foot and Hand	Framg	Framing
FA	Forced Air	Frd	Furred
Fab	Fabricated, Fabric	Frg	Furring
Fac	Face, Facility	FRK	Foil Reinforced Kraft
FAR	Federal Acquisition Regulation	Frm	Frame
Fbgs	Fiberglass	FRP	Fiberglass Reinforced Plastic, Fire Rated Protection
F'c	Compressive Stress in Concrete	Frt	Freight
FC	Foot Candles	Frzstat	Freeze Stat
FCC	Face Centered Cubic	FS	Fusible Switch, Forged Steel
Fcty	Factory	Fsbl	Fusible
FD	Fire Damper, Floor Drain, Fire Department	Fstnr	Fastener
Fdn	Foundation	Ft	Foot, Feet
FE	Fire Extinguisher, Front End	Ftball	Football
FEnd	Front End	Ftg	Footing, Fitting
FEP	Fluorinated Ethylene Propylene (Teflon)	Ftng	Fitting
FG	Flat Grain	Fur	Furnish
FH	Fence Height, Fire Hydrant, Fire Hose	Fur' d	Furred
Fib	Fiberglass, Fiber	Fur' g	Furring
FID	Field Interface Device	Furn	Furnace, Furniture
Fig	Figure	FVNR	Full Voltage Non-Reversing
Fil	Filter	FW	Fast Wheel
Fin	Finish	Fwd	Forward
Fip	Ferrous Iron Pipe, Fins Per Inch	Fxd	Fixed
Fix	Fixture	FXM	Female x Male
FL	Flange, Floor, Flood	Extr	Fixture
FL-FL Hgt	Floor To Floor Height	Fy	Minimum Yield Stress of Steel, Fiscal Year
FLash	Flashing	G	Gram, Gauss
Fld	Field	Ga	Gauge
Fldwd	Field Weld		

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Gal	Gallon	Hlw, Hlve	Hardware
Galv	Galvanize(d)	Hlwood	Hardwood
GAO	Government Accounting Office	HE	Heat Exchanger
GB	Grade Beam	Hec	Hectare
Gd	Guard, Guide	HEPA	High-Efficiency Particle Accumulator
Gen	General, Generator	Hex	Hexagon, Hexagonal
GFA	Gross Floor Area	Hg	Mercury
GFE	Government Furnished Equipment	Hgr	Hanger
GFI	Ground Fault Interrupter Breaker	Hgt	Height
GFM	Government Furnished Material	Hi	High
GI	Galvanized Iron	HIC	High Interrupting Capacity
Gird	Girder	HID	High Intensity Discharge
Gl	Glass	HM	Hollow Metal
Glazd	Glazed	Hmr	Hammer
Glazg	Glazing	HO	High Output
Glb	Globe	Hbl	Hollow
Gnd	Ground	Hbriz	Horizontal
Govt	Government	Hbsp	Hospital
Gp	Group	HP	High Pressure, Horsepower
GPD	Gallon Per Day	HPF	High Power Factor
GPH	Gallon Per Hour	Hpr	Hamper
GPM	Gallon Per Minute	HPS	High Pressure Sodium
Gr	Grade	HQDA	Headquarters Department of Army
Grad	Graduated	Hr	Hour
Gran	Granular	HRS	Hot Rolled Steel
Grde	Grade	HS	High Strength
Grnd	Ground	HSC	High Short Circuit
Grnstd	Grandstand	Ht	Heat, Height
Grnstn	Green stone	Htg	Heating
Grt	Grout(ed), Grate	Htr	Heater
Grt' d	Grouted	Humid	Humidity
Grtg	Grating	HV	High Voltage
Gskt	Gasket	HVAC	Heating Ventilation/Air Conditioning
Gvl	Gravel	Hvy	Heavy
GWB	Gypsum Wall Board	HW	Hot Water
Gyp	Gypsum	Hwy	Highway
H	High, High Strength Bar Joist	Hyd	Hydraulic, Hydrostatic
HRC	Heating and Cooling	Hz	Hertz, (Cycles)
H-O-A	Hand-Off-Automatic	Hzd	Hazard
Handcp	Handicapped	I	Moment of Inertia
Hardbd	Hardboard	IB	Iron Body
HC	High Capacity	IC	Interrupting Capacity, Integrated Circuit
HCA	Head of Contracting Activity	ID	Inside Dimension, Identification
HI	Head, Heavy Duty, High Density	IF	Inside Frosted
HDO	High Density Overlaid (Plywood)	IG	Inspector General
Hlache	Headache	IGE	Independent Government Estimate
Hll	Handle	Ignit	Ignition
Hll' g	Handling	IJO	Individual Job Order
HDPE	High Density Polyethylene	IMC	Intermediate Metal (Steel) Conduit
Hlr	Header	Inx	IMX, Type Lighting Arrestors
Hlr i	Handrail	In	Inlet, Insulation, Inch

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Incan	Incandescent	KD	Knock Down
Incl	Include(d), (ing)	KDAT	Kiln Dried After Treatment
Incr	Increase	kg	kilogram, Kilogauss
Ind	Indicator, Industrial	kgf	Kilogram Force
Indiv	Individual	kHz	Kilohertz
Indus	Industry, Industrial	Kip	1000 Pounds
Info	Information	Kit	Kitchen
Inl	Inlet	KJ	Kiljoule
Ins	Insert	KL	Effective Length Factor
Inst	Install	KLF	Kips per Linear Foot
Instant	Instantaneous	km	Kilometer
Insti	Institution	KO	Knock Out, Contracting Officer
Instr	Instrument(s)	KSF	Kips per Square Foot
Insul	Insulate(d/ion), Insulator	KSI	Kips per Square Inch
Int	Interior	Kt	Kitchen
Integ	Integral	KV	Kilovolt
Intens	Intensity	KVA	Kilovolt Ampere
Inter	Internal (ly)	KVAR	Kilovar (Reactance)
Intlking	Interlocking	KW	Kilowatt
Intm	Intermediate	KWh	Kilowatt-Hour
Intnl	Intermediate	L	Length, Long
Integr	Integral	Lab	Laboratory
Intrfc	Interface	Lam	Laminated
Intrm	Interim	Lat	Latitude (N/S)
Intru	Intrusion	Latl	Lateral (s)
Intv	Interval	Lav	Lavatory
Ionz	Ionization	Lb	Pound, Load Bearing
IP	Iron Pipe	LCL	Less than Carload Lot
IPS	Improved Plow Steel, Iron Pipe Size	LCY	Loose Cubic Yards
IPT	Iron Pipe Threaded	Ld	Load
Irreg	Irregular	Ldr	Loader
Is	Isolated	LE	Lead Equivalent
ISC	Installation Support Center	LED	Light Emitting Diode
ISO	Isolation	L&E	Labor and Equipment
IV	Intravenous	LF	Linear Foot
IW	Indirect Waste	Lg	Long, Length, Large
IWRC	Independent Wire Rope Center	Lge	Large
J	Joule	Lgth	Length
JB	Junction Box	L&H	Light and Heat
Jct	Junction	LH	Long Span Bar Joist, Labor Hours
JIC	Joint Industrial Council	Liq	Liquid
Jmpr	Junper	Lit	Liter
Jnt	Joint	Lknt	Locknut
JOC	Job Order Contracting	Lkr	Locker
JOCNDB	Job Order Contracting National Data Base	LL	Live Load
Jst	Joist	LLD	Lamp Lumen Depreciation
Jt	Joint	LM	Linear Meter, Lumen
K	Kip, (Thousand Pounds), Thousand, Heavy Wall Copper Tubing	Lmt	Limit
KAH	Thousand Amp Hours	Ln	Lane
KCML	Thousand Circular Mils	LNG	Liquid Natural Gas
		Lnk	Link

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
lns	Lens	MBM	Thousand Feet Board Measure
LOA	Length Over All	Mg	Manufacturing
LOL	Lateral-o-let	Mfr	Manufacturer, Memorandum for Record
LP	Liquefied Petroleum, Low Pressure	mg	Milligram
LPF	Low Power Factor	MG	Mtor Generator
Lphldr	Lamp holder	MGD	Million Gallons per Day
LR	Living Room, Long Radius	MPH	Thousand Gallons per Hour
LS	Lump Sum	MH	Man Hole, Metal Halide, Man Hour
Lse	Loose	Mhr	Man-Hour
Lt	Light	Mhz	Megahertz
Ltg	Lighting	M	Mile (Statute), Malleable Iron, Mineral Insulat
LTL	Less Than Truckload Lot	Mn	Minimum, Minute, Mineral
Ltng	Lighting	MnFib	Mineral Fiber
Ltwt	Lightweight	Mni	Miniature
Lumin	Luminaire	Msc	Miscellaneous
LV	Low Voltage	Mj	Mechanical Joint
Lvj	Level	M	Milliliter
LwC	Lightweight Concrete	MLF	Thousand Linear Feet
Lyr	Layer(s)	mm	millimeter
M	Meter	Mn	Main
MG	Mtor Generator Set	Mnfid	Manifold
mA	Milli-ampere	Manl	Manual
Mch	Machine	Mntg	Mounting
MACOM	Major Army Command	MD	Month
MA	Military Construction Army	MDA	Memorandum of Agreement
Mg Str	Magnetic Starter	Mbb	Mobilize (d), Mobilization
Mhog	Mhogany	Mbd	Moderate (ly), Modification (s)
Mint	Maintenance	Mbg	Mgul Base
Ms	Masonry	MPH	Miles Per Hour
Mtr	Material	MPT	Male Pipe Thread
Max	Maximum	Mn	Monitor
MBF	Thousand Board Feet	Mno	Mnolythic
MBH	1000 BTU'S/Hour	Mrt	Mrtise
MC	Metal Clad Cable	Mv	Mvve (able)
MACES	Micro Computer Aided Cost Estimating System	Mkg	Marking
MCC	Mtor Control Center	Mkr	Marker
MCF	Thousand Cubic Feet	MRT	Miles Round Trip
MCFM	Thousand Cubic Feet Per Minute	ns	Nanosecond
MEM	Thousand Circular Mls	MSF	Thousand Square Feet
MCP	Mtor Circuit Protector	MSY	Thousand Square Yards
MD	Medium Duty	MT	Metric Ton (1,000 KG)
MDO	Medium Density Overlaid (Plywood)	M	Munt
Mln	Median	Md	Munted
Mlr	Mdular	Mg	Munting
Mch	Mechanical	Mng	Munting
Md	Medium	Ml	Metal
Mem	Membrane	Mr	Mtor
Merc	Mercury (See Hg)	Mlt	Multiple
Meth	Method	Misrm	Mishroom
Mezz	Mezzanine	MV	Mercury Vapor, Mega-volt
MF	Thousand Feet	MVA	Million Volt Amperes

MEDCOM Support Team-localized to Fort Lewis, WA

Abbreviations

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
MVAR	Million Volt Amperes Reactance	OH	Overhead
Mv	Megawatt	OMA	Operations and Maintenance, Army
MM	Male x Male	OMB	Office of Management and Budget
MD	Thousand Yards	Omidir	Omni-directional
N	Natural North	O&P	Overhead and Profit
N-Rev	Non-Reversing	Oper	Operate(D), Operator, Operation
Na	Nano Ampere, Not Applicable, Not Available	Opn	Open(ing)
NAF	Non-Appropriated Fund	Opng	Open(ing)
Narr	Narrow	Opnr	Opener
Nat	Natural	Op	Operate(d), Operator, Operation
Nav	Navigation	Ord	Order, Ordinary
NBC	National Building Code	Organ	Organic
NC	Normally Closed	Orna	Ornamental
NDT	Non-Destructive Testing	OS&Y	Outside Screw and Yoke
Neg	Negative	OSB	Oriented Strand Board (Plywood)
NEMA	National Electrical Manufactures Association	OSHA	Occupational Safety and Health Administration
Neop	Neoprene	Out	Output, Outside
NFPA	National Fire Protection Association	Outdr	Outdoor
NFTM	National Pipe Thread Male	Outl	Outlet
Ngt	Night	Ovhd	Overhead
Nki	Nickel	Ovrpck	Over-pack
NLB	Non Load Bearing	OWG	Oil Water Gas
NM	Non-Metalic (Cable), Nanometer	oz	Ounce
Nnl	Normal	P	Pole, Primary, Applied Load, Projection, page
No	Neutral, Number, Normally Open	P/O	Part Of
NOC	Not Otherwise Classified	PA	Public Address
Nom	Nominal	Paintg	Painting
Nonmtl	Non-Metallic	PAPI	Precision Approach Path Indicator
Nonshk	Non-Shrink	PAPR	Powered Air Purifying Respirator
Nose	Nosing	PARC	Principle Assistant Responsible for Contracting
NPP	Non Pre-Priced	Part	Particle, Partition(s)
NPT	National Pipe Thread	Pass	Passenger
NPTF	National Pipe Thread Female	Pat	Pattern
NRC	Noise Reduction Coefficient	Patrn	Pattern
NRS	Non-Rising Stem	PbS	Pushbutton Station
Ns	Nanosecond	PBX	Public Branch Telephone Exchange
NTP	Notice to Proceed	PC	Pieces, Portland Cement
Ntpr	Non-Tapered	PCF	Pounds per Cubic Foot
Nw	Nanowatt	PCM	Phase Contract Microscopy
2	Oxygen	PE	Polyethylene Pipe, Plain End, Porcelain Enamel
O&W	Oil and Water	PESB	Pre-Engineered Steel Building
OA	Outside Air	Per	Percent
OB	Overburden, Opposing Blade	Perf	Perforated
OC	On Center	Perm	Permanent
OCONUS	Outside the Continental U.S	Perpend	Perpendicular
Oct	Octagonal	Pers	Person, Personnel
Octg	Octagonal	Persnl	Personnel
OD	Outside diameter, Outside Dimension	Ph	Phase
ODS	Overhead Distribution System	Pi	Pressure injected, val=3.141592654
Off	Office	Pl	Place, Plate(d)
OG	Ogee (of orbit)	Pie	Pile

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Pist	Piston	Prsm	Prismatic
Pk	Pack	Prstr	Pre-stressed
Pkd	Packed	PRV	Pressure Reducing Valve
Pkg	Package	PSF	Pounds Per Square Foot
Pkng	Parking	PSI	Pounds Per Square Inch
PL	Pilot Light	PSIG	Pounds Per Square Inch of Gravity
Plas	Plastic, Plaster	PSP	Plastic Sewer Pipe
Plit	Perlite	P&T	Pressure & Temperature
PLM	Polarized Light Microscopy	Pt	Pints, Potential Transformer
Pln	Plain	PTD	Paper Towel dispenser
Plntr	Planter	Ptd	Painted
Plt	Plate(s), Plant	Ptn	Partition(s)
Pltfm	Platform	Pu	Ultimate Load
Ply	Plywood	Pub	Public
Plygnd	Playground	Pushbtn	Pushbutton Station
PM	Post Meridien	PVC	Polyvinyl Chloride
Pneu	Pneumatic	PVCS40- A	PVC Schedule 40 Type A Conduit
Pnl	Panel	PVCctd	PVC Coated
Pnlbrds	Panel-boards	PVCS40- EB	PVS Schedule 40 Type EB Conduit
Pmnt	Pendant	Pvnt	Pavement
Pnt	Paint	Pvt	Private
Pntd	Painted	Pwr	Power
Poly	Polyethylene	PX	Post Exchange
Polyprop	Polypropylene	Q	Quantity Heat Flow
Polys	Polystyrene	QA	Quality Assurance
Polyureth	Polyurethane	QC	Quick Coupling, Quality Control
Porc	Porcelain	QCP	Quality Control Plan
Port	Portable, Portland	QT	Quarry Tile, Quart
Pos	Position	Qty	Quantity
Pp	Polypropylene, Pages	QuadPx	Quad-plex
PPD	Pound Per Day	Qual	Quality
PPM	Parts Per Million	Qz	Quartz
Pr	Pair	R	Radius of Gyration, Resistance
Prct	Pre-cast	Rad	Radical, Radius
Pre-Assem	Pre-assembled	Rad	Radio
Prec	Pre-cast	Radn	Radiation
Prefab	Prefabricated	Railrd	Railroad
Prefin	Prefinished	Rbr	Rubber
Prem	Premium	RC	Roller Compacted
Premld	Pre-molded	RCC	Roller Compacted Concrete
Prep	Preparation, Prepare	RCP	Reinforced Concrete Pipe
Preserv	Preservative	Rcpt	Receptacle
Press	Pressure	Rcvr	Receiver
Prim	Primary	RD	Roof Drain
Prl	Parallel	Rdwy	Roadway
Projd	Projected	Rdwood	Redwood
Proof	Proofing	Rdwy	Roadway
Prop	Propeller, Propelled	Rdy	Ready
Propl	Proportional	Re	Regular
Prot	Protection	Rec	Receiver, Recessed
Prox	Proximity	Rec'g	Receiving

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Recd	Recessed	Rsr	Riser
Recip	Reciprocating	RT	Round Trip
Recpt	Receptacle	Rtn	Return
Recreatn	Recreation	RWAT	Reduced Voltage Auto Transfer
Rect	Rectangle	Rvs	Reverse
Red	Reducing	Rvsbl	Reversible
Reduc	Reducing	S	Suction, Single Entrance, South
Ref	Refrigerant	S-Flsh	Semi-Flush
Refer	Refrigerator, Refrigerate (d), Reference	S-Fnsh	Semi-Finish
Refl	Reflector	S10	Schedule 10
Refrig	Refrigerant	S40	Schedule 40
Reg	Regular	S4S	Surfaced Four Sides (Dressed Lumber)
Reinfnt	Reinforce (d), (ing)	S80	Schedule 80
Rel	Relation, Relocate	Sad	Saddle
Rem	Remove	SADBU	Small and Disadvantaged Business Utilization
Repl	Replace (able)	Sand	Sandwich
Reqd	Required	Sani	Sanitary
Resi	Residential	Sanit	Sanitary
Resil	Resilient	Scaf	Scaffold
Resis	Resistant	Sched	Schedule
Retain	Retaining	Scot	Scotch
Rev	Revision, Reversing	Scr	Screen
Rgh	Rough	Scrd	Screwed
RF	Radio Frequency	Scw	Screw(s)
Rfg	Roofing	SCFM	Standard Cubic Feet per Minute
Rfgt	Refrigerant	SCR	Modular Brick
RFP	Request for Proposal	Sd	Side, Sound Deadening, Standard Duty
Rgltr	Regulator	Sdewalk	Sidewalk
RGS	Rigid Galvanized Steel (Conduit)	SDR	Standard Dimension Ratio
RHW	Rubber, Heat & Water Resistant	SE	Surfaced Edge
Rk	Rock	Seal	Sealant
Rlf	Relief	Sec	Second, Secondary
Rm	Room	Sect	Section, Sectional
RMS	Root Mean Square	Secur	Security
Rnt	Remote	Sed	Sediment
Rnbl	Removable	seg	Segment
Rnd	Round	sel	Select(or)
Rng	Range	Semicirc	Semi-Circular
Rnt	Rent	Sep	Separator
Rnwy	Runway	Septr	Separator
RO	Rough Opening	SER	Service Entrance Cable
ROW	Right of Way	SF	Single Face, Square Foot, Standard Form
Roadwy	Roadway	SFCA	Square Foot Contact Area
Rockw	Rock-wood	SFG	Square Foot of Ground
Roll	Roller	SFR	Square Foot of Radiation
Rot	Rotation	Sfl	Semi-Flush
Rotatn	Rotation	Sft	Soft
RPM	Revolution Per Minute	Sftball	Softball
RPMA	Real Property Maintenance Activity	Sfty	Safety
RR	Railroad, Direct Burial Feeder Conduit	Sfx	Suffix
RS	Rapid Start	Sgl	Single

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
Sgn	Sign	SPT	Standard Pipe Thread
Sh	Short	SPVib	Self Propelled Vibratory
Shapg	Shaping	SQ	Square, (100 Square Feet)
Shd	Shield (ed)	Srce	Source
Sheepsft	Sheeps-foot	SSCont	Solid State Controller
Shft	Shaft	SS	Single Strength, Stainless Steel, Sterling Sil
Ship' g	Shipping	SSA	Source Selection Authority
Shl	Shell	SSB	Single Strength B Grade
Shlw	Shallow	SSEP	Source Selection Evaluation Plan
Shp	Shaped	SST	Stainless Steel
Shr	Shear	St	Steel, Steam
Sht	Sheet	STC	Sound Transmission Coefficient
Shtrock	Sheet-rock	Sta	Station
Shwr	Shower	Stab	Stabilization
Si	Square Inch	Stabil	Stabilization
Sill	Silicon	Stain	Stainless
Sillc	Silicone	Stat	Static, Stationary
Siml	Simultaneous	Std	Standard
SJA	Staff Judge Advocate	Ster	Sterilizer
Sk	Sketch	Stg	Seating, Seat
Skylt	Skylight	Stg	Stage
Sl	Saran Lined, Slim Line	STK	Select Tight Knot
Sldr	Soldier	Stl	Steel
SLH	Super Long Span Bar Joist	Stm	Steam
Slprs	Sleepers	Stne	Stone
Slv	Sleeve	Stngh	Strength
Sm	Small	Stor	Storage
Smls	Seamless	STP	Standard Temperature & Pressure
Snth	Smooth	Str	Stress, I. e. Stress Cones, Strength, Starter, Straight
SN	Solid Neutral	Strd	Stranded
So	Southern	Strl	Structural
SoI	Solid, Socket-o-let	Strnds	Strands
SOP	Standard Operating Procedure	Strt	Straight
SOW	Statement of Work	Struc	Structure, Structural
SP	Self Propelled, Space, Static Pressure, Single Pole	Sty	Story
Spcl	Special	Subj	Subject
Spd	Speed	Subm	Submerged, Submersible
SPDT	Single Pole Double Throw (switch)	Subs	Subcontractors
Spec	Specification	Substat	Substation
SPF	Spruce Pine Fir	Sup	Support(s)
SpI	Splice	Supp' g	Supporting
SpIc	Splice	Surf	Surface
SpIy	Supply	Surg	Surgical
Spndri	Spandrel	Susp	Suspend(ed), Suspension
Sprd	Spread	Suspnsn	Suspension
Sprg	Spring	Svce	Service
Spri	Sprinkler	SW	Switch
Sprt	Support(s)	Svbd	Switchboard
Spru	Spruce	Svgr	Switch-gear
SPST	Single-Pole Single-Throw	Svless	Switch-less

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
SY	Square Yard	Tpg	Topping
Synth	Synthetic	Tpr	Tapered
SYP	Southern Yellow Pine	Tr	Tracked, Trade
Sys	System	Traf	Traffic
Sz	Size	Trans	Transom
T	Tee "T" (pre-cast), Thickness, Temperature, Ton	Transf	Transformer
T&B	Top and Bottom	Trav	Travel (ing), Traverse
T&C	Thread & Coupled	Triang	Triangular
T&G	Tongue & Groove, Tar & Gravel	TriPx	Triplex
Tamp	Tamper	Trk	Truck
Tapr	Taper (ed)	Trlr	Trailer
TC	Terra Cotta	Trm	Trim
Tckwld	Tack-weld	Trnhg	Trenching
TD	Temperature Difference	Trp	Triple
TDy	Temporary	Trsh	Trash
Tech	Technical	Trtnt	Treatment
Te1	Telephone	Trzo	Terrazzo
TEM	Transmission Electron Microscopy	TS	Trigger Start
Temp	Temperature, Temporary	Tstat	Thermo-stat (ic)
Tend	Tendon	Tstg	Testing
Ter	Terrazzo	Tub	Tubing
Term	Termination, Terminal	Turb	Turbine
Textd	Textured	TV	Television
TFE	Tetrafluoroethylene (Teflon)	TW	Thermoplastic Water Resistant Wire
Tgl	Toggle	Typ	Typical
Thermo	Thermometer	UCI	Uniform Construction Index
Thermo	Thermoplastic	UF	Under Floor
Thk	Thick	UF-NMC	Underground Feeder
Thn	Thin	Ugnd	Underground
THN	Nylon Jacketed Wire	UHF	Ultra High Frequency
THW	Insulated Strand Wire	UL	Underwriter's Laboratories
THW	Nylon Jacketed Wire	Un	Unit
Thrd	Threaded	Unclass	Unclassified
Thrhd	Threshold	Uncoat	Un-coated
Thrm	Thermal	Underflr	Under Floor
Thru	Through	Unfin	Unfinished
Tint	Tint (ed)	Unglz	Unglazed
Tk	Tank, Thick	Unhtd	Unheated
Tkt	Ticket	Unidir	Unidirectional
TL	Truckload	Unl	Unloading
TM	Trade Mark, Track Mounted	Unmtd	Unmounted
Timbr	Timber	UPB	Unit Price Book
Tempd	Tempered	UPS	Un-interruptible Power Supply
Tn	Ton	URD	Underground Residential Distribution
TO	Task Order	USAAA	United States Army Audit Agency (AKA Triple A)
TOL	Thread-o-let	USACE	United States Army Corp of Engineers
Toil	Toilet	USE	Underground Service Entrance
Ton	Ton (Short)	USP	United States Primed
Torq	Torque	Uti	Utility
Tot	Total	UIP	Unshielded Twisted Pair
Tp	Type	V	Vent, Volt

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
VA	Volt Amperes	VP	Working Pressure
Vac	Vacuum	VR	Water Resistant
Val	Valve, Value	Wtght	Water Tight
Var	Variable	WSP	Water Steam Petroleum
VAV	Variable Air Volume	Wt	Weight
VB	Vapor Barrier	Wth	Width, Wire
Vc	Vitrified Clay, Veneer Core	Whprf	Weatherproof
VCP	Vitrufied Clay Pipe	Wrprf	Waterproof I
VCT	Vinyl Composition Tile	Ww	Wire, Width
Vent	Ventilate, Ventilator	WFF	Welded Wire Fabric
Ver	Vertical	XFER	Transfer
Verm	Vermiculite	Xfmr	Transformer
Vert	Vertical	XHD	Extra Heavy Duty
VF	Vinyl Faced	XHHW	Cross-Linked Polyethylene Wire Insulation
VG	Vertical Grain	XLP	Cross-Linked Polyethylene
VHF	Very High Frequency	XLPE	Cross-Linked Polyethylene Wire Insulation
VHD	Very High Output	Y	Wye
Vib	Vibrator, Vibration	Yd	Yard
VIE	Vertical Inside Elbow	Yel	Yellow
Vit	Vitreous	Yr	Year
VLf	Vertical Linear Foot	Yrs	Years
Vnyl	Vinyl	Z, Zn	Zone
VOE	Vertical Outside Elbow	&	And
Vol	Volume	~	Approximately
VRP	Vinyl Reinforced Polyester	@	At
VT	Vapor Tight, Vinyl Tile	=	Equals
W	Watt, Weight, Wet, Wire, Wide, West	'	Feet
W	With	>	Greater Than
WC	Water Closet, Water Column	"	Inch
Wd	Weld, Wood	<	Less Than
Wdw	Window	-	Minus, Subtract
Weat	Weather Tight	%	Percent
WeatHD	Weather Head	+	Plus, Add
Weatight	Weather Tight	#	Pound, Number
WF	Wide Flange	*, x	Times, Multiply
WG	Water Guage	:	To (4:12 Slope), Proportion
Wdg	Welding		
WMle	Wire Mle		
Wp	Water proofing		
Wh	Wheel		
Wchair	Wheelchair		
Whl	Wheel		
Whr	Work-Hour		
Wht	White		
WI	Wrought Iron		
Wk	Work		
Wl	Wall		
Wm	Wire Mesh		
Wb	Without		
WOL	Weld-o-let		
Wp	Waterproof		

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
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01030 Special Project Procedures

01031 Special Project Procedures

1) Unless otherwise noted all items listed in the Special Project Procedures shall be included in the contractor's factor. Prices listed in the JOC Unit Price Book include the following: Direct labor through the foreman level at Davis-Bacon wage rates for the area, Equipment to include but not limited to: Cranes, Dozers, Trucks, Compressors, Excavators, Trench Boxes & Shoring, Ladders & Scaffolding, etc. unless otherwise stated in the contract. Materials costs including all incidentals (incidentals are items such as, but not limited to nails, screws, nuts, washers, fasteners, weldments, transition strips, connectors and hangers. 2) All prices in the JOC Unit Price Book are for completed and in-place construction, unless explicitly described otherwise, and to include, but not limited to: testing, calibration, balancing, etc., as required to insure proper construction and or operation, i.e. compaction test for backfill, compression test piping system balance HVAC, Hydrostic testing, other's as required. Starting of new systems are included with the line item Testing, Adjusting and Balancing of new items are included in the line item costs. Testing, Adjusting and Balancing line items shall only be used on existing utilities and equipment and only when directed by the Government. 3) Material Unit Costs include delivery to and from the typical project site unless explicit described otherwise, and handling material up to a two story height. 4) Demolition costs in the UPB include, but not limited to: Complete removal of required items, loading in truck or dumpster. Disposal of non-salvagable items or turn-in of salvageable items as designated or directed by the Government. Demolition costs do not include costs for hauling (See 02112-9100), Trash Chutes may be necessary or use of elevator for multistory buildings (See 01630), but hauling to (up to 50 ft.) and placing in Dumpster, Trash Chutes or Elevators is included in demolition costs. Use of Government owned or other Government Contractor's dumpsters and or other trash receptacles, are prohibited by the contractor for dumping or disposal of material, debris or waste. The Contractor shall provide and maintain a dumpster of sufficient size at no additional cost to the Government. The dumpster(s) will be replaced at regular intervals to avoid overfilling and spillage and the area around the dumpster will be kept clean at all times. Demolition cost. Or: Scrap, debris and surplus construction materials are not to be disposed of in any of the "Post Sanitary Disposal Containers" (Dumpster, etc.) which are located throughout the Post, but shall be loaded on the Contractor's dumpsters or other means, for disposal off of Government property, at the expense of the Contractor's, IAW all Federal, State, Local and Environmental Laws and Regulations. 5) Specifications for line items are to be interpreted as follows: All items and methods in the line item specification are to be considered part of line item cost, unless otherwise noted on the line item description. 6) The following are not included in the JOC UPB but are considered as part, but not limited to costs associated with the contractor factor: All waste and excess materials i.e. excess carpet, started strips and ridge caps on roofs, etc.; Mobilization and close-out for the total contract and each delivery; Daily project clean-up; Safety and environmental protection; Signs, barriers, caution tape and underground utility tape; Project management and supervision; Quality control; Office management and equipment; Interest associated with funding of equipment and payroll; Depreciation of mobile office(s); Employee payroll taxes and insurance; Risk of lower than expected contract dollar volume; Risk of a high inflation costs if factors are bid for future years (option years); Risk of a poor subcontractor performance and re-performance; Other risks of doing business: Business taxes, contributions, membership, corporate headquarters support (legal, financial, etc.); Contractor overhead and profit; Subcontractor overhead and profit; Protection of, or moving government property, i.e. desks, chairs, file cabinets, drapes, etc.; As-built drawings; Submittal preparation; Price Quotations; Temporary heat/utilities services, when not available; Material Sales Tax. The above items shall be the responsibility of the Contractor, at no additional cost to the Government. The Government will provide all Gas, Electric and Water necessary to accomplish the work. It will be the responsibility of the Contractor to bring any utilities to the job site. If utilities can not be brought to the job site, Temporary Utilities / measures shall be provided by the Contractor at no additional cost. It shall be considered part of the Contractor's overhead. 7) Do not use line items that use "Minimum" or "Maximum" prices. 8) Typical interim working height shall be up to fourteen (14) feet. Working heights below fourteen (14) feet will not require any scaffolding line items. All line items include all labor, equipment and material necessary to accomplish the work, to include but not limited to all ladders, backers scaffolding, etc. 9) Typical masonry working height below four (4) feet does not require any scaffolding line item 10) All fasteners such as screws, anchor bolts, adhesive, etc., are included in line items cost, except where not otherwise noted. 11) Line items for installation of frames, doors, window frames, duct work, plumbing fixtures, seamless floors, countertops, acoustical ceiling tile perimeters, etc., include sealant caulking, silicone, etc. 12) Line items for floor and wall finishes such as but not limited to VCT, carpet and wall covering include design pattern such as borders and interior field design. When matching material design pattern exact measurements apply, no waste is to be included. 13) Fixture rough-ins include ten (10) feet of pipe (for each of the following): all hot water supply lines, cold water supply lines, vents, wastes, valves and miscellaneous installations materials. Fixture rough-ins shall only be used if exact quantity take offs cannot be easily determined. 14) Division 2 shall be used for all demolition. Demolition line item shall be used only if no line item in Division 2 match with demolition activity needed. 15) Under the lighting sections all new fluorescents fixtures shall come with electronic ballasts and energy efficient T-8 bulbs. 16) Fixture whips shall be included in the price of fixture sizes 1'x4' up to 8'. 17) Incandescent fixtures are to have compact fluorescent energy bulbs equivalent to wattage specified. 18) All electrical enclosures, ie. outlet boxes, junction boxes, disconnects, etc shall be labeled with the proper panel and circuit designation. 19) Safety: The contractor shall follow all safety requirements as designated by OSHA, and all Federal and Local Regulations. All safety equipment, certifications, monitoring equipment, etc shall be the responsibility of the contractor at no additional cost to the Government. Except for Asbestos and LBP abatement items in section 02080.

01031 1000 Special Project Procedures

1001 JOC NOTE:

NTE

01300 Miscellaneous Labor

01310 Miscellaneous Labor

01310 1000 Mscellaneous Labor

1010 Labor, Journeyman Level

53.84

01400 Quality Control

01410 Testing Services

JOC Note: Testing of installed items is included in the line item costs.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
01418 1000 Lab Services Water Quality				
1001	Alpha 16th ED. Total Coliform Bacteria		39.84	
1002	Alpha 16th ED. Fecal Coliform Bacteria		48.46	
1003	Alpha 16th ED. Chlorine Residual		29.08	
1004	Conductivity (MH0/CM) EPA Method		15.08	
1005	PH (Units) EPA Method		16.15	
1006	Alpha 16th ED. Turbidity (NTU)		25.85	
01418 4399 Soil Testing				
Note: Field Tests Are For Existing Site Material. Appropriate Field Tests Are Included In the Installed Line Item				
4400	Soil Testing, Atterberg Limits, Liquid & Plastic Limits	EA	65.69	
4600	Soil Testing, Sieve Analysis, Washed	EA	61.03	
4620	Soil Testing, Sieve Analysis, 2 Micron	EA	102.30	
4735	Soil Testing, Density, Nuclear Method, ASTM D2922-71	EA	41.64	
4740	Soil Testing, Density, Sand Cone Method ASTM D1556064	EA	32.49	
4745	Soil Testing, Unconfined Comp Str (Pocket Penetrometer)	EA	4.31	
4750	Soil Testing, Moisture Content	EA	5.74	
4760	Soil Testing, Moisture Content, Undisturbed Sample	EA	4.85	
4770	Soil Testing, Dry Density (Undisturbed Sample)	EA	45.77	
4780	Soil Testing, Double Ring Infiltrometer	EA	592.29	
4810	Soil Testing, Permeability, Undisturbed	EA	226.15	
4820	Soil Testing, Permeability, Falling Head, EPA-9100	EA	231.53	
4830	Soil Testing, Permeability, Constant Head, ASTM D2432	EA	208.20	
4850	Soil Testing, Permeability, Recompacted	EA	251.27	
4970	Soil Testing, Moisture/Density, Relation In Soils ASTM D1557-70	EA	137.84	
5400	Soil Testing, Falling Head Rigid Wall Consolidometer, CAE	EA	242.30	
5410	Sieve Analysis Coarse Fraction (#4 SCREEN) ASTM C 136		118.46	
5420	Sieve Analysis Coarse Fraction (#4-200 SCREEN) ASTM C 117		53.84	
5430	Frost Class Hydrometer (Specific Gravity Assumed) ASTM D 422		91.54	
5440	24 Hour Hydrometer (Specific Gravity Assumed) ASTM D 422		102.30	
5450	Specific Gravity (#4 Screen) ASTM D 854		123.84	
5460	Specific Gravity (#4 Screen) ASTM C 127		80.77	
5470	Moisture Content ASTM C 566		21.54	
5480	Percent Fractured Particles (#4 Screen) Alaska T4		53.84	
5490	Percent Fractured Particles (#10 Screen) Alaska T4		53.84	
5495	Unit Weight Determined ASTM C 29		43.08	
01418 5500 Lab Services PCB Testing				
5510	PCB Oil Extraction (EPA Method 8080)		133.53	
5520	PCB Soil Extraction (EPA Method 8080)		133.53	
01418 5600 Lab Services Soil and Oil				
5610	Ignitability-Flash Point Temperature by Closed Cup Method		47.38	
5615	Specific Metals (EPA Method 6010) Metals With and W/O Digest ID		43.08	
5620	Oil and Grease Hydrocarbons (EPA Method 503C/E) Sludge and Soil		80.77	
5625	Oil and Grease Hydrocarbons (EPA Method 503C/E) Liquids		80.77	
5630	Organics By GC/Mass Spec (Volatile) (EPA Method 8260)		215.38	
5635	Organics By GC/Mass Spec (Semi-Volatile) (EPA Method 8270)		452.29	
5640	TCLP, Hvy Metals, Herb/Pest, Listed EPTOX, (Vol. and Semi-Vol)		360.76	
5645	Gasoline Range Organics (GRO-ADEC Method AK101)		80.77	
5650	Diesel Range Organics (DRO-ADEC Method AK102)		96.92	
5655	Residual Range Organics (RRO-ADEC Method AK103)		96.92	
5660	DRO/RRO (ADEC Method 102/103)		102.30	
5665	GRO/BTEX (AK101/EPA8020)		86.15	
5670	BTEX (EPA Method 8020)		73.23	
5675	Total Petroleum Hydrocarbons (TPH) (EPA Method 418.1)		70.00	
5680	Level 3 QA/QC Data Package, * Added 10% of Total Analysis Cost		1.08	
01418 5700 Lab Services Water Analysis				
5705	Halogenated Hydrocarbons (EPA Method 601)		114.15	
5710	Aromatic Hydrocarbons (EPA Method 602)		91.54	
5715	Total Petroleum Hydrocarbons (EPA Method 418.1)		99.07	
5720	Water Analysis, Oil and Grease (EPA Method 503B)		53.84	
5725	Water Analysis, Addl Metals (EPA Method 300/40) ID Metals		32.31	
5730	Gasoline Range Organics (GRO-ADEC Method AK101)		80.77	
5735	Diesel Range Organics (DRO-ADEC Method AK102)		96.92	
5740	Residual Range Organics (RRO-ADEC Method AK103)		96.92	
5745	DRO/RRO (ADEC Method 102/103)		102.30	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5750	GRO/BTEX (AK101/EPA 8020)		86.15	
5755	BTEX (EPA 8020)		73.23	
5760	Level 3 QA/QC Data Package, * A dd 10% of Total Analysis Cost		1.08	
01418 7000	Underground Storage Tank			
	Note: Testing Of Existing Tanks Only. Testing Of New Installations Is Included In The Line Item			
7520	Testing, Ugd Storage Tank, <= 12,000gal, Volumetric Tightness	EA	323.07	
7530	Testing, Ugd Storage Tank, 12, 000-29,999 gal, Volumetric	EA	511.52	
7540	Testing, Ugd Storage Tank, >= 30,000gal, Volumetric Tightness	EA	699.98	
01500	Construction Facilities & Temporary Controls			
01510	Temporary Controls			
01514 0010	Temporary Utilities			
01514 0099	Heat			
0100	Temporary Heat, Fuel & Operation, Per Week, 12Hr/Day	CSF	8.08	
0200	Temporary Heat, Fuel & Operation, Per Week, 24Hr/Day	CSF	12.83	
01533	Barriers and Enclosures			
01533 0009	Barricades			
0010	Barricades, 5' high, 3 rail @ 2" x 8", fixed	LF	29.38	
0200	Barricades, 5' high, 3 rail @ 2" x 8", movable	LF	33.04	
01533 1009	Concrete Barricades			
	Note: Concrete Jersey Barricades 12 LF ASHTO Stnd, 5025lbs Ea, Costs Do Not Include Shipping, and Offloading at Site.			
1010	Precast Temp Jersey Barrier Wall - 10Ft Sectns Rental <=3Mnths	LF	7.00	
1015	Precast Temp Jersey Barrier Wall 12Ft Sectns, Rental >3Mn S/Mbn	LF	0.86	
1020	Precast Temp Jersey Barrier Wall -12 Ft Sections - Purchase	EA	18.31	
01534 0009	Rental Construction Fencing			
	Note: Price Includes, Concrete Base Blocks, Hardware, Delivery, Setup, Bracing, Tear Down and Disposal.			
0010	Rented Chain Link, 6' Hi, to 500LF (Up to 12 Mn)	LF	6.33	
0020	Rented Chain Link, 6' Hi, Over 500LF (Up to 12 Mn.)	LF	5.50	
01540	Temporary Construction			
01540 1000	Temporary Construction			
01540 1100	Dust Protection			
1101	6 Mil Polyethylene, 4'x8' Panels, 2"x4" Frame	SF	0.50	
01545 1000	Temporary Safety Fence			
1001	Temporary Safety Fence, Orange P lastic Mesh 48"H w/ Post 8'0.C.	LF	1.50	
01550	Labor/Wage Rates			
01552	Maintenance Labor/Wage Rates			
01552 1000	Maintenance Labor/Wage Rates			
	Note: Welders - Receive Rate perscribed For Craft performing Operation To Which Welding Is incidental.			
1001	Carpenter W Truck & Tools	HR	24.35	
1002	Electrician W Truck & Tools	HR	26.87	
1003	HVAC W Truck & Tools	HR	24.20	
1004	Refrigerantion/AC Worker W Truck & Tools	HR	24.20	
1005	Plumber W Truck & Tools	HR	23.94	
1006	Mason W Truck & Tools	HR	24.32	
1007	Painter W Truck & Tools	HR	26.62	
1008	Roofer W Truck & Tools	HR	22.94	
1009	Steel Worker W Truck & Tools	HR	22.01	
1011	Laborer W Tools	HR	33.32	
1021	Carpenter W/Lift Truck & Tools	HR	35.14	
1022	Electrician W/Line Truck & Tools	HR	44.08	
1023	HVAC W/Lift Truck & Tools	HR	35.97	
1024	Refrigerantion/AC Worker W Lift Truck & Tools	HR	42.54	
1029	Steel Worker W/Lift Truck& Tools	HR	40.44	
01580	Project Signs			
01580 0009	Signs			
0010	Sign, Hi-Intensity Reflectorized, No Posts, Buy	SF	10.89	
01590	Temporary Offices & Sheds			
	Government Requested Facilities Only.			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
01594 0009 Temporary Office Trailers				
0250	Office Trailer, Rent Per Mnth, Furnished, No Hookups, 20' x8'	MD	156.15	
0350	Office Trailer, Rent Per Mnth, Furnished No Hookups, 32' x8'	MD	194.56	
0450	Office Trailer, Rent Per Mnth, Furnished, No Hookups, 50' x10'	MD	301.53	
0550	Office Trailer, Rent Per Mnth, Furnished, No Hookups, 50' x12'	MD	351.07	
0700	Office Trailer, For AC, Rent Per Mnth, ADD	MD	36.61	
01594 1199 Storage Boxes				
1250	Office, Storage boxes, 16' x8' Rent Per Mnth	MD	75.38	
1350	Office, Storage boxes, 28' x10' ,Rent Per Mnth	MD	102.30	
01600 Material And Equipment				
01610 Scaffolding				
Note: Additional Scaffolding Rental. When A Modifier Addresses Height, The Cost Of Scaffolding and Loss Of Productivity is Included.				
01610 1000 Scaffolding Rental - Material Only				
Note: Monthly Rental Per 100Cf Of Actual Scaffolding Area Rented. For Erection Use Csi "01610 2000".				
1001	Scaffolding - Based On Area Per Mnth. 5' Wide x 7' Long Section	CCF	3.34	
01610 2000 Scaffolding Erection - Labor Only				
Note: Area Of Scaffolding Erection. For Scaffolding Rental See Csi "01610 1000"				
2001	Scaffolding - Height Up To 20'. Per CCF Of Scaffolding.	CCF	5.47	
2002	Scaffolding - Height Over 20'. Per CCF Of Scaffolding	CCF	6.70	
01610 3000 Rolling Scaffolding				
3001	Rolling Scaffolding 14' to 20' Comp with wheels, railings, etc.	MD	108.73	
3002	Rolling Scaffolding Erection And Dismantaling	EA	42.55	
01610 4000 Swing Stage				
Note: 5' Wide x 7' Long, Electric Powered. Up To 300'. Rental Based On 1 Mnth Including Mnhours For Set-ups.				
4001	Swing Stage, 5' x7', Electric Operated, Up To 300'.	MD	1,649.15	
4101	For Each Additional 100' Of Hgt.		50.00	
01612 Power Lifts				
Note: Line Items In The UPB Include Appropriate Costs To Cover Labor & Equipment And Materials Unless Stated Otherwise. Do Not Use These Items In Conjunction With Current UPB Line Items For Work Below 14'. These Items Will Be Requested Specifically By The Owner For Miscellaneous Work Not Covered In The UPB.				
01612 1000 Scissor Lifts, Rental				
1001	Scissor Lift To 25' Rental Day	DAY	103.37	
1002	Scissor Lift To 25' Rental Wk	WK	314.26	
1003	Scissor Lift To 25' Rental Mbn	MD	951.05	
01612 2000 Aerial Lift W Telescoping Boom Rental				
2001	Aerial Lift W Telescoping Boom, Rental Day	DAY	206.75	
2002	Aerial Lift W Telescoping Boom, Rental Wk	WK	620.25	
2003	Aerial Lift W Telescoping Boom, Rental Mbn	MD	1,860.75	
01612 3000 Truck Mounted Cranes Rental				
3001	Crane, Truck Mounted Rental Day	DAY	570.00	
3002	Crane, Truck Mounted Rental Wk	WK	1,715.00	
3003	Crane, Truck Mounted Rental Mbn	MD	5,150.00	
01612 4000 Bucket Truck Rental				
4001	Bucket Truck Rental Day	DAY	160.00	
4002	Bucket Truck Rental Wk	WK	470.00	
4003	Bucket Truck Rental Mbn	MD	1,400.00	
01612 5000 For Free Water Deduct				
5010	For Free Water Deduct *FRA		-0.20	
01612 5500 Forklift				
5510	6000 LBS Forklift, 16 FT Lift, 3 Hr Minimum		26.92	
5520	6000 LBS Forklift, 16 FT Lift		161.53	
5530	6000 LBS Forklift, 16 FT Lift		646.13	
5540	6000 LBS Forklift, 30 FT Lift, 4 Hr Minimum		37.69	
5550	6000 LBS Forklift, 30 FT Lift		204.61	
5560	6000 LBS Forklift, 30 FT Lift		818.44	
01612 6000 Manlift				
6010	26 FT Electric Manlift, 300 Lbs Cap, 4 Hr Minimum		26.92	
6020	26 FT Electric Manlift, 300 Lbs Cap		161.53	
6030	26 FT Electric Manlift, 300 Lbs Cap		538.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6040	26 FT Electric Manlift, 300 Lbs Cap		969.20	
6050	Snorkelift, 40' Towable Boom		188.46	
6060	Snorkelift, 40' Towable Boom		753.82	
6070	Snorkelift, 40' Towable Boom		2,261.47	
6080	37'-42' Tele Boom Work Platform		215.38	
6090	37'-42' Tele Boom Work Platform		861.51	
6110	37'-42' Tele Boom Work Platform		2,584.54	
6120	45 Ft All-Terrain, Propane Power ed 500 Lbs Cap, 4 Hr Minimum		26.92	
6130	45 Ft All-Terrain, Propane Power ed 500 Lbs Cap		215.38	
6140	45 Ft All-Terrain, Propane Power ed 500 Lbs Cap		861.51	
01612 7000	Hydraulic Crane			
7010	Hydraulic Crane, Rubber Tired, 28 Ton		807.67	
7020	Hydraulic Crane, Rubber Tired, 28 Ton		2,423.00	
7030	Hydraulic Crane, Rubber Tired, 28 Ton		6,999.79	
7040	Hydraulic Crane, Rubber Tired, 45 Ton		1,399.96	
7050	Hydraulic Crane, Rubber Tired, 45 Ton		4,146.03	
7060	Hydraulic Crane, Rubber Tired, 45 Ton		12,384.24	
01614 Scaffolding Specialties				
01614 1000	Sidewalk Bridges			
1001	Heavy Duty Steel Post & Beams Includes Parapet Protection	LF	45.12	
1002	Tubular Steel Scaffold Frame With Planking	LF	12.75	
01630 Rubbish Handling				
01630 1000	Trash Chutes			
01630 1000	Chute Installation			
1001	Circular Prefabricated Steel, 18 In Diameter	LF	24.06	
1002	Circular Prefabricated Steel, 30 In Diameter	LF	39.08	
01630 1100	Chute Installation			
Note: Prices Include All Materials And Erection Cost For A Complete Installation				
1101	Inst 18"D(46cm) Prefab Stl Chute	LF	28.73	
1102	Inst 36"D(91cm) Prefab Stl Chute	LF	40.94	
01630 1200	Temporary Chute Installation			
1201	Trash Chutes, Plywood, 4' Base & 4' Sides, Incl. Fab & Install	LF	10.45	
1202	Temp. Trash Chutes, Plastic, Up To 3' Base & 4' Sides, Re-usable	LF	7.05	
1203	Temp. Trash Chutes, Plastic, Round W/ Chain Conn., Re-usable	LF	5.07	
01630 2000	Construction Dumpsters			
2001	20 Cy Dumpster - Cost Per Dump	EA	84.77	
2002	30 Cy Dumpster - Cost Per Dump	EA	127.16	
2003	40 Cy Dumpster - Cost Per Dump	EA	169.54	
2009	Dumpster	CY	12.62	
01640 Lifting And Hoisting Equipment				
Note: Line Items In The UPB Include Appropriate Costs To Cover Labor, Equipment And Material Unless Title States Otherwise. Do Not Use These Rental Costs In Conjunction With Current UPB Line Items Or Substitute Rental Unit Costs For UPB Line Items. These Items Will Be Requested Specifically By The Owner For Miscellaneous Work Not Covered In The UPB.				
01640 1000	Hoist - Chain Type, Overhead, Manual			
1001	1 Ton Capacity Hoist Rental	MD	183.81	
1002	10 Ton Capacity Hoist Rental	MD	643.33	
01641 Equipment Rentals Without Operator				
01641 0100	Air-Compressors			
0111	Air-Compressor, Gas Portable, 80 C.F.M., 30 Hp	DAY	52.80	
0112	Air-Compressor, Gas Portable, 80 C.F.M., 30 Hp	WK	238.00	
0113	Air-Compressor, Gas Portable, 80 C.F.M., 30 Hp	MD	954.00	
0114	Air-Compressor, Gas Portable, 150 C.F.M., 85 Hp	DAY	100.00	
0115	Air-Compressor, Gas Portable, 150 C.F.M., 85 Hp	WK	470.00	
0116	Air-Compressor, Gas Portable, 150 C.F.M., 85 Hp	MD	1,750.00	
0117	Air-Compressor, Diesel Portable, 100 C.F.M., 35 Hp	DAY	50.00	
0118	Air-Compressor, Diesel Portable, 100 C.F.M., 35 Hp	WK	221.00	
0119	Air-Compressor, Diesel Portable, 100 C.F.M., 35 Hp	MD	865.00	
0121	Air-Compressor, Diesel Portable, 175 C.F.M., 65 Hp	DAY	73.40	
0122	Air-Compressor, Diesel Portable, 175 C.F.M., 65 Hp	WK	329.00	
0123	Air-Compressor, Diesel Portable, 175 C.F.M., 65 Hp	MD	1,285.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0124	Air-Compressor, Diesel Portable, 600 C.F.M., 200 Hp	DAY	236.40	
0125	Air-Compressor, Diesel Portable, 600 C.F.M., 200 Hp	WK	1,057.00	
0126	Air-Compressor, Diesel Portable, 600 C.F.M., 200 Hp	MD	4,160.00	
01641 0200	Hammer-Hydraulic			
0211	Hammer-Hydraulic, Vehical. Mbunt ed, 850-1300 Lb	DAY	186.00	
0212	Hammer-Hydraulic, Vehical. Mbunt ed, 850-1300 Lb	WK	842.00	
0213	Hammer-Hydraulic, Vehical. Mbunt ed, 850-1300 Lb	MD	3,369.00	
0214	Resharpending Charges, Mil	EA	4.20	
0215	Resharpending Charges, Chisel	EA	4.30	
0216	Resharpending Charges, Clay Spade s	EA	8.40	
01641 0300	Air Tools, Breakers			
0311	Breakers Light 40#, Silenced	DAY	7.70	
0312	Breakers Light 40#, Silenced	WK	29.00	
0313	Breakers Light 40#, Silenced	MD	104.80	
0314	Breakers Medium 60#, Silenced	DAY	8.20	
0315	Breakers Medium 60#, Silenced	WK	34.00	
0316	Breakers Medium 60#, Silenced	MD	125.00	
0317	Breakers Heavy 90#, Silenced	DAY	9.60	
0318	Breakers Heavy 90#, Silenced	WK	40.00	
0319	Breakers Heavy 90#, Silenced	MD	149.40	
01641 0400	Air Tools, Jackhammers			
0411	Jackhammer, No Bits, 30-40 Lbs	DAY	10.40	
0412	Jackhammer, No Bits, 30-40 Lbs	WK	41.80	
0413	Jackhammer, No Bits, 30-40 Lbs	MD	123.70	
01641 0500	Air Tools, Chipping Hammers			
0511	Chipping Hammers: Heavy	DAY	10.20	
0512	Chipping Hammers: Heavy	WK	41.00	
0513	Chipping Hammers: Heavy	MD	121.40	
01641 0600	Tampers			
0611	Tampers: Aluminum Up To 25 Lbs	DAY	6.20	
0612	Tampers: Aluminum Up To 25 Lbs	WK	24.00	
0613	Tampers: Aluminum Up To 25 Lbs	MD	92.00	
01641 0700	Air-Hses			
0711	Hose: 3/4" X 50' Single Line Ree l	DAY	2.90	
0712	Hose: 3/4" X 50' Single Line Ree l	WK	10.50	
0713	Hose: 3/4" X 50' Single Line Ree l	MD	33.60	
0714	Hose: 3/4" X 50' Double Line Ree l	DAY	5.00	
0715	Hose: 3/4" X 50' Double Line Ree l	WK	18.00	
0716	Hose: 3/4" X 50' Double Line Ree l	MD	58.45	
01641 0800	Wecking Balls			
0811	Ball: 2000 Lbs, Cast Semi-Steel	DAY	19.60	
0812	Ball: 2000 Lbs, Cast Semi-Steel	WK	78.40	
0813	Ball: 2000 Lbs, Cast Semi-Steel	MD	235.00	
01641 0900	Batch Plant/Concrete Mxer Electric			
0911	Concrete Mixer: Trk Md, 65-110 Yph, Pto, 5 Cy	DAY	342.00	
0912	Concrete Mixer: Trk Md, 65-110 Yph, Pto, 5 Cy	WK	1,410.00	
0913	Concrete Mixer: Trk Md, 65-110 Yph, Pto, 5 Cy	MD	5,220.00	
0914	Batch Plant, Trlr Md, 150-200 Y ph, 10 Cy	DAY	469.00	
0915	Batch Plant, Trlr Md, 150-200 Y ph, 10 Cy	WK	1,940.00	
0916	Batch Plant, Trlr Md, 150-200 Y ph, 10 Cy	MD	7,156.00	
01641 1000	Compactors, Rollers, Gasoline Powered			
1011	Roller, Tandem Steel Wheel, Road Type, 11 Hp, Ballast 1 Ton	DAY	58.00	
1012	Roller, Tandem Steel Wheel, Road Type, 11 Hp, Ballast 1 Ton	WK	190.00	
1013	Roller, Tandem Steel Wheel, Road Type, 11 Hp, Ballast 1 Ton	MD	618.00	
1014	Roller, Tandem Steel Wheel, Road Type, 18 Hp, Ballast 2 - 3 Ton	DAY	88.00	
1015	Roller, Tandem Steel Wheel, Road Type, 18 Hp, Ballast 2 - 3 Ton	WK	287.00	
1016	Roller, Tandem Steel Wheel, Road Type, 18 Hp, Ballast 2 - 3 Ton	MD	915.00	
1017	Roller, Tandem Steel Wheel, Road Type, 85 Hp, Ballast 8 - 12 Ton	DAY	185.00	
1018	Roller, Tandem Steel Wheel, Road Type, 85 Hp, Ballast 8 - 12 Ton	WK	630.00	
1019	Roller, Tandem Steel Wheel, Road Type, 85 Hp, Ballast 8 - 12 Ton	MD	1,815.00	
1021	Roller, 3 Steel Wheel, Road Type, 107 Hp, Ballast 12 Ton	DAY	180.00	
1022	Roller, 3 Steel Wheel, Road Type, 107 Hp, Ballast 12 Ton	WK	755.00	
1023	Roller, 3 Steel Wheel, Road Type, 107 Hp, Ballast 12 Ton	MD	2,490.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1024	Roller, 3 Steel Wheel, Road Type , 107 Hp, Ballast 14 Ton	DAY	185.00	
1025	Roller, 3 Steel Wheel, Road Type , 107 Hp, Ballast 14 Ton	WK	785.00	
1026	Roller, 3 Steel Wheel, Road Type , 107 Hp, Ballast 14 Ton	MD	2,670.00	
01641 1100	Compactors, Vibratory Towed Sheepsfoot			
1111	Vibratory Towed Sheepsfoot, 18 F .W.H.P. 55" X 66"	DAY	110.00	
1112	Vibratory Towed Sheepsfoot, 18 F .W.H.P. 55" X 66"	WK	461.00	
1113	Vibratory Towed Sheepsfoot, 18 F .W.H.P. 55" X 66"	MD	1,531.00	
01641 1200	Compactors, Static Rubber Tire			
1211	Static Rubber Tire, 9 Wheel, Sel f Propelled	DAY	190.00	
1212	Static Rubber Tire, 9 Wheel, Sel f Propelled	WK	805.00	
1213	Static Rubber Tire, 9 Wheel, Sel f Propelled	MD	3,060.00	
01641 1300	Conveyors, Portable Belt			
1311	Convey: 18" X 50', 150 T.P.H. 5 Hp, Electric	DAY	84.00	
1312	Convey: 18" X 50', 150 T.P.H. 5 Hp, Electric	WK	345.00	
1313	Convey: 18" X 50', 150 T.P.H. 5 Hp, Electric	MD	975.00	
1314	Convey: 24" X 50', 300 T.P.H. 10 Hp, Electric	DAY	92.00	
1315	Convey: 24" X 50', 300 T.P.H. 10 Hp, Electric	WK	386.00	
1316	Convey: 24" X 50', 300 T.P.H. 10 Hp, Electric	MD	1,450.00	
1317	Convey: 30" X 50', 500 T.P.H. 20 Hp, Electric	DAY	101.40	
1318	Convey: 30" X 50', 500 T.P.H. 20 Hp, Electric	WK	422.00	
1319	Convey: 30" X 50', 500 T.P.H. 20 Hp, Electric	MD	1,580.00	
1321	Convey: 36" X 50', 750 T.P.H. 20 Hp, Electric	DAY	102.40	
1322	Convey: 36" X 50', 750 T.P.H. 20 Hp, Electric	WK	427.00	
1323	Convey: 36" X 50', 750 T.P.H. 20 Hp, Electric	MD	1,595.00	
1324	Convey: 18" X 50', 150 T.P.H. 22 Hp, Gas	DAY	121.20	
1325	Convey: 18" X 50', 150 T.P.H. 22 Hp, Gas	WK	521.00	
1326	Convey: 18" X 50', 150 T.P.H. 22 Hp, Gas	MD	2,000.00	
1327	Convey: 24" X 50', 300 T.P.H. 22 Hp, Gas	DAY	134.00	
1328	Convey: 24" X 50', 300 T.P.H. 22 Hp, Gas	WK	574.00	
1329	Convey: 24" X 50', 300 T.P.H. 22 Hp, Gas	MD	2,200.00	
1331	Convey: 30" X 50', 500 T.P.H. 22 Hp, Gas	DAY	137.00	
1332	Convey: 30" X 50', 500 T.P.H. 22 Hp, Gas	WK	591.00	
1333	Convey: 30" X 50', 500 T.P.H. 22 Hp, Gas	MD	2,265.00	
1334	Convey: 36" X 30', 750 T.P.H. 46 Hp, Gas	DAY	162.00	
1335	Convey: 36" X 30', 750 T.P.H. 46 Hp, Gas	WK	717.00	
1336	Convey: 36" X 30', 750 T.P.H. 46 Hp, Gas	MD	2,790.00	
01641 1400	Power Cords			
1411	Power Cord, #12-3, 50'	DAY	3.00	
1412	Power Cord, #12-3, 50'	WK	7.65	
1413	Power Cord, #12-3, 50'	MD	19.25	
1414	Power Cord, #12-3, 100'	DAY	4.00	
1415	Power Cord, #12-3, 100'	WK	8.55	
1416	Power Cord, #12-3, 100'	MD	22.25	
01641 1500	Drills			
1511	Drill, Mechanical Hold Down, 1"- 4" Bit, 1-1/3 Hp	DAY	15.50	
1512	Drill, Mechanical Hold Down, 1"- 4" Bit, 1-1/3 Hp	WK	53.00	
1513	Drill, Mechanical Hold Down, 1"- 4" Bit, 1-1/3 Hp	MD	168.00	
1514	Drill, Mechanical Hold Down, 1"- 10" Bit, 3-1/2 Hp	DAY	34.50	
1515	Drill, Mechanical Hold Down, 1"- 10" Bit, 3-1/2 Hp	WK	120.00	
1516	Drill, Mechanical Hold Down, 1"- 10" Bit, 3-1/2 Hp	MD	389.00	
1517	Drill, Vacuum Hold Down, 1"-6" B it, 1-1/3 Hp	DAY	27.50	
1518	Drill, Vacuum Hold Down, 1"-6" B it, 1-1/3 Hp	WK	94.00	
1519	Drill, Vacuum Hold Down, 1"-6" B it, 1-1/3 Hp	MD	299.00	
1521	Drill, Vacuum Hold Down, 1"-10" Bit, 2-1/2 Hp	DAY	46.50	
1522	Drill, Vacuum Hold Down, 1"-10" Bit, 2-1/2 Hp	WK	161.00	
1523	Drill, Vacuum Hold Down, 1"-10" Bit, 2-1/2 Hp	MD	520.00	
01641 1600	Grinders			
1611	Grinder: Ceiling, No Wheel, 1	DAY	18.30	
1612	Grinder: Ceiling, No Wheel, 1	WK	62.55	
1613	Grinder: Ceiling, No Wheel, 1	MD	205.50	
1614	Grinder, Tuck Point, 4000	DAY	4.40	
1615	Grinder, Tuck Point, 4000	WK	19.00	
1616	Grinder, Tuck Point, 4000	MD	65.00	
01641 1700	Hammers			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1711	Hammer, Percussion, 11 Amp, 1800 Bpm	DAY	15.40	
1712	Hammer, Percussion, 11 Amp, 1800 Bpm	WK	59.00	
1713	Hammer, Percussion, 11 Amp, 1800 Bpm	MD	210.00	
1714	Hammer Drill, 10 Amp, 2800 Bpm	DAY	13.00	
1715	Hammer Drill, 10 Amp, 2800 Bpm	WK	53.00	
1716	Hammer Drill, 10 Amp, 2800 Bpm	MD	190.00	
01641 1800	Belt Sanders			
1811	Belt Sander, 15 Amp	DAY	3.00	
1812	Belt Sander, 15 Amp	WK	12.00	
1813	Belt Sander, 15 Amp	MD	43.00	
01641 1900	Saws			
1911	Circular Hand Saw, 7-1/4"	DAY	4.00	
1912	Circular Hand Saw, 7-1/4"	WK	14.00	
1913	Circular Hand Saw, 7-1/4"	MD	49.00	
1914	Masonry Saw, Wet/Dry, Wb/Blade	DAY	24.00	
1915	Masonry Saw, Wet/Dry, Wb/Blade	WK	94.00	
1916	Masonry Saw, Wet/Dry, Wb/Blade	MD	335.00	
1917	Radial Arm Saw, 44" Arm 16" Blade, 5000 Amp	DAY	20.00	
1918	Radial Arm Saw, 44" Arm 16" Blade, 5000 Amp	WK	81.00	
1919	Radial Arm Saw, 44" Arm 16" Blade, 5000 Amp	MD	290.00	
1921	Radial Arm Saw, 52" Arm 20" Blade, 10000 Amp	DAY	40.00	
1922	Radial Arm Saw, 52" Arm 20" Blade, 10000 Amp	WK	160.00	
1923	Radial Arm Saw, 52" Arm 20" Blade, 10000 Amp	MD	580.00	
01641 2000	Concrete Vibrators			
2011	Concrete Vibrators, 10' Flex Shaft, 1-3/8 Head Dia 1 Hp	DAY	3.00	
2012	Concrete Vibrators, 10' Flex Shaft, 1-3/8 Head Dia 1 Hp	WK	13.00	
2013	Concrete Vibrators, 10' Flex Shaft, 1-3/8 Head Dia 1 Hp	MD	46.00	
2014	Concrete Vibrators, 10' Flex Shaft, 2-5/8 Head Dia 3 Hp	DAY	5.00	
2015	Concrete Vibrators, 10' Flex Shaft, 2-5/8 Head Dia 3 Hp	WK	20.00	
2016	Concrete Vibrators, 10' Flex Shaft, 2-5/8 Head Dia 3 Hp	MD	72.00	
2017	Concrete Vibrators, Gas, 5 HP	WK	31.80	
2018	Concrete Vibrators, Gas, 8 HP	WK	48.00	
01641 2100	Impact Wrench With Sockets			
2111	Impact Wrench W/ 1/2" Sockets	DAY	3.00	
2112	Impact Wrench W/ 1/2" Sockets	WK	11.00	
2113	Impact Wrench W/ 1/2" Sockets	MD	40.00	
2114	Impact Wrench W/ 3/4" Sockets	DAY	5.00	
2115	Impact Wrench W/ 3/4" Sockets	WK	20.00	
2116	Impact Wrench W/ 3/4" Sockets	MD	73.00	
01641 2200	Field Offices, Van Type With Office			
2211	8' X 28' Van, W/ 8' X 8' Office	DAY	9.00	
2212	8' X 28' Van, W/ 8' X 8' Office	WK	34.00	
2213	8' X 28' Van, W/ 8' X 8' Office	MD	120.00	
2214	8' X 28' Van, W/ 12' X 8' Office	DAY	11.00	
2215	8' X 28' Van, W/ 12' X 8' Office	WK	43.00	
2216	8' X 28' Van, W/ 12' X 8' Office	MD	155.00	
01641 2300	Field Offices, Van Type With Office And Toilet			
2311	8' X 20' Office, W/ Toilet	DAY	11.00	
2312	8' X 20' Office, W/ Toilet	WK	42.00	
2313	8' X 20' Office, W/ Toilet	MD	150.00	
2314	8' X 28' Office, W/ Toilet	DAY	14.00	
2315	8' X 28' Office, W/ Toilet	WK	56.00	
2316	8' X 28' Office, W/ Toilet	MD	195.00	
2318	12' X 45' Office, W/ Toilet	WK	68.00	
2319	12' X 45' Office, W/ Toilet	MD	190.00	
2322	12' X 60' Office, W/ Toilet	WK	115.00	
2323	12' X 60' Office, W/ Toilet	MD	295.00	
2325	24' X 72' Office, W/ Toilet	WK	220.00	
2326	24' X 72' Office, W/ Toilet	MD	595.00	
01641 2400	Floodlight, Gas			
2411	Floodlight, Gas, 3-Section 20' Tower, 2-1000W	DAY	30.00	
2412	Floodlight, Gas, 3-Section 20' Tower, 2-1000W	WK	120.00	
2413	Floodlight, Gas, 3-Section 20' Tower, 2-1000W	MD	420.00	
01641 2500	Floodlight, Diesel			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2511	Floodlight, Diesel, 3-Section 28 ' Telescoping Tower, 4-1000W	DAY	88.00	
2512	Floodlight, Diesel, 3-Section 28 ' Telescoping Tower, 4-1000W	WK	360.00	
2513	Floodlight, Diesel, 3-Section 28 ' Telescoping Tower, 4-1000W	MD	1,420.00	
01641 2600	Concrete Buggies			
2611	Concrete Buggies, 12 Cf, Walk, 8 Hp	DAY	31.00	
2612	Concrete Buggies, 12 Cf, Walk, 8 Hp	WK	125.00	
2613	Concrete Buggies, 12 Cf, Walk, 8 Hp	MD	455.00	
2614	Concrete Buggies, 12 Cf, Walk, 10 Hp	DAY	40.00	
2615	Concrete Buggies, 12 Cf, Walk, 10 Hp	WK	160.00	
2616	Concrete Buggies, 12 Cf, Walk, 10 Hp	MD	565.00	
2617	Concrete Buggies, 18 Cf, Ride, 2 0 Hp	DAY	70.00	
2618	Concrete Buggies, 18 Cf, Ride, 2 0 Hp	WK	280.00	
2619	Concrete Buggies, 18 Cf, Ride, 2 0 Hp	MD	1,003.00	
01641 2700	Compactors, Pan Type			
2711	Compactor, Pan Type, Rammer, 225 0#, 4 Hp	DAY	24.60	
2712	Compactor, Pan Type, Rammer, 225 0#, 4 Hp	WK	105.00	
2713	Compactor, Pan Type, Rammer, 225 0#, 4 Hp	MD	395.00	
2714	Compactor, Pan Type, Rammer, 590 0#, 4.2 Hp	DAY	40.40	
2715	Compactor, Pan Type, Rammer, 590 0#, 4.2 Hp	WK	167.00	
2716	Compactor, Pan Type, Rammer, 590 0#, 4.2 Hp	MD	620.00	
2717	Compactor, Pan Type, Vibratory, 2450#, 3-1/2 Hp	DAY	11.60	
2718	Compactor, Pan Type, Vibratory, 2450#, 3-1/2 Hp	WK	50.00	
2719	Compactor, Pan Type, Vibratory, 2450#, 3-1/2 Hp	MD	192.00	
2721	Compactor, Pan Type, Vibratory, 5650#, 7-1/2 Hp	DAY	22.20	
2722	Compactor, Pan Type, Vibratory, 5650#, 7-1/2 Hp	WK	95.00	
2723	Compactor, Pan Type, Vibratory, 5650#, 7-1/2 Hp	MD	365.00	
01641 2800	Concrete Floor Finishers			
2811	Concrete Floor Finisher, 36" Dia, 5 Hp	DAY	11.00	
2812	Concrete Floor Finisher, 36" Dia, 5 Hp	WK	43.00	
2813	Concrete Floor Finisher, 36" Dia, 5 Hp	MD	155.00	
2814	Concrete Floor Finisher, 46" Dia, 8 Hp	DAY	12.00	
2815	Concrete Floor Finisher, 46" Dia, 8 Hp	WK	46.00	
2816	Concrete Floor Finisher, 46" Dia, 8 Hp	MD	165.00	
2817	Concrete Floor Finisher, Gas, Riding Trowel, 48" Dia.	WK	96.50	
2818	Concrete Floor Finisher, Gas, Manual, 3 Blade, 36" Trowel	WK	46.50	
2819	Concrete Floor Finisher, Gas, Manual, 4 Blade, 48" Trowel	WK	53.50	
01641 2900	Space Heaters			
2911	Space Heater, 150,000Btu/Hr, Oil Fired	DAY	7.00	
2912	Space Heater, 150,000Btu/Hr, Oil Fired	WK	27.00	
2913	Space Heater, 150,000Btu/Hr, Oil Fired	MD	98.00	
2914	Space Heater, 500,000Btu/Hr, Oil Fired	DAY	20.00	
2915	Space Heater, 500,000Btu/Hr, Oil Fired	WK	80.00	
2916	Space Heater, 500,000Btu/Hr, Oil Fired	MD	285.00	
01641 3000	Concrete Mixers			
3011	Concrete Mixer, Portable, 4 Cf	DAY	10.00	
3012	Concrete Mixer, Portable, 4 Cf	WK	34.00	
3013	Concrete Mixer, Portable, 4 Cf	MD	91.00	
3014	Concrete Mixer, Portable, 6 Cf	DAY	15.00	
3015	Concrete Mixer, Portable, 6 Cf	WK	67.00	
3016	Concrete Mixer, Portable, 6 Cf	MD	244.00	
3021	Curb Builder, 14HP, Gas, Sgl Screw	WK	53.40	
3022	Curb Builder, 14HP, Gas, Dbl Screw	WK	59.40	
01641 3100	Mortar Or Plaster Mixers			
3111	Mortar Or Plaster Mixer, Portable, 4 Cf	DAY	7.00	
3112	Mortar Or Plaster Mixer, Portable, 4 Cf	WK	29.00	
3113	Mortar Or Plaster Mixer, Portable, 4 Cf	MD	105.00	
3114	Mortar Or Plaster Mixer, Portable, 9 Cf	DAY	26.00	
3115	Mortar Or Plaster Mixer, Portable, 9 Cf	WK	105.00	
3116	Mortar Or Plaster Mixer, Portable, 9 Cf	MD	370.00	
3117	Mortar Or Plaster Mixer, Portable, 12 Cf	DAY	34.00	
3118	Mortar Or Plaster Mixer, Portable, 12 Cf	WK	145.00	
3119	Mortar Or Plaster Mixer, Portable, 12 Cf	MD	435.00	
01641 3200	Chain Saws			
3211	Chain Saw, 16"	DAY	3.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3212	Chain Saw, 16"	WK	18.00	
3213	Chain Saw, 16"	MD	73.00	
3214	Chain Saw, 24"	DAY	5.00	
3215	Chain Saw, 24"	WK	32.00	
3216	Chain Saw, 24"	MD	130.00	
01641 3300 Concrete Cutting Saws				
3311	Concrete Cutting Saw, No-Blade, 7 Hp	DAY	16.00	
3312	Concrete Cutting Saw, No-Blade, 7 Hp	WK	62.00	
3313	Concrete Cutting Saw, No-Blade, 7 Hp	MD	185.00	
3314	Concrete Cutting Saw, No-Blade, 1 0 Hp	DAY	21.00	
3315	Concrete Cutting Saw, No-Blade, 1 0 Hp	WK	90.00	
3316	Concrete Cutting Saw, No-Blade, 1 0 Hp	MD	270.00	
01641 3400 Generator Sets, Small, Air Or Water Cooled, Gas				
3411	Generator Set, 3.5 Kw, Manual Start, 7 Hp	DAY	12.40	
3412	Generator Set, 3.5 Kw, Manual Start, 7 Hp	WK	55.00	
3413	Generator Set, 3.5 Kw, Manual Start, 7 Hp	MD	220.00	
3414	Generator Set, 7.5 Kw, Manual Start, 10-3/4 Hp	DAY	25.00	
3415	Generator Set, 7.5 Kw, Manual Start, 10-3/4 Hp	WK	110.00	
3416	Generator Set, 7.5 Kw, Manual Start, 10-3/4 Hp	MD	430.00	
3417	Generator Set, 10.0 Kw, Electric Start, 14-1/4 Hp	DAY	26.00	
3418	Generator Set, 10.0 Kw, Electric Start, 14-1/4 Hp	WK	113.00	
3419	Generator Set, 10.0 Kw, Electric Start, 14-1/4 Hp	MD	448.00	
3421	Generator Set, 15.0 Kw, Electric Start, 21-1/2 Hp	DAY	47.40	
3422	Generator Set, 15.0 Kw, Electric Start, 21-1/2 Hp	WK	207.00	
3423	Generator Set, 15.0 Kw, Electric Start, 21-1/2 Hp	MD	805.00	
01641 3500 Generator Sets, Large, Water Cooled, Diesel Pow				
3511	Generator Set, 40.0 Kw, 60 Hertz, 64 Hp	DAY	76.20	
3512	Generator Set, 40.0 Kw, 60 Hertz, 64 Hp	WK	336.00	
3513	Generator Set, 40.0 Kw, 60 Hertz, 64 Hp	MD	1,315.00	
3514	Generator Set, 75.0 Kw, 60 Hertz, 107 Hp	DAY	109.80	
3515	Generator Set, 75.0 Kw, 60 Hertz, 107 Hp	WK	489.00	
3516	Generator Set, 75.0 Kw, 60 Hertz, 107 Hp	MD	1,924.00	
3517	Generator Set, 175.0 Kw, 60 Hertz, 250 Hp	DAY	190.00	
3518	Generator Set, 175.0 Kw, 60 Hertz, 250 Hp	WK	862.00	
3519	Generator Set, 175.0 Kw, 60 Hertz, 250 Hp	MD	3,465.00	
3521	Generator Set, 250.0 Kw, 60 Hertz, 357 Hp	DAY	232.60	
3522	Generator Set, 250.0 Kw, 60 Hertz, 357 Hp	WK	1,076.00	
3523	Generator Set, 250.0 Kw, 60 Hertz, 357 Hp	MD	4,388.00	
3524	Generator Set, 500.0 Kw, 60 Hertz, 713 Hp	DAY	495.00	
3525	Generator Set, 500.0 Kw, 60 Hertz, 713 Hp	WK	2,283.00	
3526	Generator Set, 500.0 Kw, 60 Hertz, 713 Hp	MD	7,289.00	
01641 3600 Hoists, Chain With Safety Hooks				
3612	Hoists, Chain, Manual, 1 Ton 8' Lift	WK	5.50	
3613	Hoists, Chain, Manual, 1 Ton 8' Lift	MD	20.00	
3615	Hoists, Chain, Manual, 2 Ton 8' Lift	WK	10.00	
3616	Hoists, Chain, Manual, 2 Ton 8' Lift	MD	35.00	
3617	Hoists, Chain, Manual, 5 Ton 8' Lift	DAY	10.00	
3618	Hoists, Chain, Manual, 5 Ton 8' Lift	WK	39.00	
3619	Hoists, Chain, Manual, 5 Ton 8' Lift	MD	140.00	
3621	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 2 Ton	DAY	19.00	
3622	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 2 Ton	WK	76.00	
3623	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 2 Ton	MD	270.00	
3624	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 3 Ton	DAY	22.00	
3625	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 3 Ton	WK	87.00	
3626	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 3 Ton	MD	310.00	
3627	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 5 Ton	DAY	25.00	
3628	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 5 Ton	WK	99.00	
3629	Hoists, Electric, 2-Speed, 230/4 60V, 60 Cycle, 5 Ton	MD	355.00	
01641 3700 Jacks, Hydraulic, Manual				
3711	Jacks, Hydraulic, Manual, 8 - 12 Ton	DAY	3.00	
3712	Jacks, Hydraulic, Manual, 8 - 12 Ton	WK	13.00	
3713	Jacks, Hydraulic, Manual, 8 - 12 Ton	MD	46.00	
3714	Jacks, Hydraulic, Manual, 20	DAY	5.00	
3715	Jacks, Hydraulic, Manual, 20	WK	18.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3716	Jacks, Hydraulic, Manual, 20	MD	64.00	
3717	Jacks, Hydraulic, Manual, 50	DAY	7.00	
3718	Jacks, Hydraulic, Manual, 50	WK	29.00	
3719	Jacks, Hydraulic, Manual, 50	MD	105.00	
01641 3800	Loader-Backhoe W Rops And Standard Bucket, Die			
3811	Loader-Backhoe, 1 Cy, 24" Bucket , 14'-7" Depth, 63 Hp	DAY	205.00	
3812	Loader-Backhoe, 1 Cy, 24" Bucket , 14'-7" Depth, 63 Hp	WK	898.00	
3813	Loader-Backhoe, 1 Cy, 24" Bucket , 14'-7" Depth, 63 Hp	MD	3,290.00	
3814	Loader-Backhoe, 1-1/2 Cy, 24" Bu cket, 16'-6" Depth, 90 Hp	DAY	263.00	
3815	Loader-Backhoe, 1-1/2 Cy, 24" Bu cket, 16'-6" Depth, 90 Hp	WK	1,120.00	
3816	Loader-Backhoe, 1-1/2 Cy, 24" Bu cket, 16'-6" Depth, 90 Hp	MD	4,260.00	
3817	Loader-Backhoe, 1-3/4 Cy, 30" Bu cket, 18'-3" Depth, 112 Hp	DAY	327.00	
3818	Loader-Backhoe, 1-3/4 Cy, 30" Bu cket, 18'-3" Depth, 112 Hp	WK	1,387.00	
3819	Loader-Backhoe, 1-3/4 Cy, 30" Bu cket, 18'-3" Depth, 112 Hp	MD	5,256.00	
3821	Loader-Backhoe, 1/2 - 5/8 Cy	DAY	85.00	
3822	Loader-Backhoe, 1/2 - 5/8 Cy	WK	255.00	
3823	Loader-Backhoe, 1/2 - 5/8 Cy	MD	760.00	
01641 3900	Loader, Heavy Duty Construction Rubber Tire			
3911	Loader, 2 Cy, 110 Hp	DAY	380.00	
3912	Loader, 2 Cy, 110 Hp	WK	1,468.00	
3913	Loader, 2 Cy, 110 Hp	MD	5,555.00	
3914	Loader, 2-1/2 Cy, 135 Hp	DAY	435.00	
3915	Loader, 2-1/2 Cy, 135 Hp	WK	1,850.00	
3916	Loader, 2-1/2 Cy, 135 Hp	MD	7,000.00	
3917	Loader, 3 Cy, 160 Hp	DAY	536.00	
3918	Loader, 3 Cy, 160 Hp	WK	2,270.00	
3919	Loader, 3 Cy, 160 Hp	MD	8,595.00	
3921	Loader, 4 Cy, 216 Hp	DAY	697.00	
3922	Loader, 4 Cy, 216 Hp	WK	2,981.00	
3923	Loader, 4 Cy, 216 Hp	MD	11,320.00	
3924	Loader, 7 Cy, 375 Hp	DAY	1,140.00	
3925	Loader, 7 Cy, 375 Hp	WK	4,887.00	
3926	Loader, 7 Cy, 375 Hp	MD	18,640.00	
3927	Loader, 12 Cy, 690 Hp	DAY	2,035.00	
3928	Loader, 12 Cy, 690 Hp	WK	8,743.00	
3929	Loader, 12 Cy, 690 Hp	MD	33,260.00	
01641 4100	Pumps, Centrifugal, Portable, Heavy Duty, Air &			
4111	Pumps, Centrifugal 1-1/2", 5000 Gpm 3 Hp	DAY	2,540.00	
4112	Pumps, Centrifugal 1-1/2", 5000 Gpm 3 Hp	WK	109.00	
4113	Pumps, Centrifugal 1-1/2", 5000 Gpm 3 Hp	MD	412.00	
4114	Pumps, Centrifugal 2", 10000 Gpm , 7 Hp	DAY	33.00	
4115	Pumps, Centrifugal 2", 10000 Gpm , 7 Hp	WK	140.00	
4116	Pumps, Centrifugal 2", 10000 Gpm , 7 Hp	MD	535.00	
4117	Pumps, Centrifugal 3", 20000 Gpm , 12.5 Hp	DAY	43.20	
4118	Pumps, Centrifugal 3", 20000 Gpm , 12.5 Hp	WK	270.00	
4119	Pumps, Centrifugal 3", 20000 Gpm , 12.5 Hp	MD	1,080.00	
4121	Pumps, Centrifugal 4", 40000 Gpm , 30 Hp	DAY	119.00	
4122	Pumps, Centrifugal 4", 40000 Gpm , 30 Hp	WK	540.00	
4123	Pumps, Centrifugal 4", 40000 Gpm , 30 Hp	MD	2,160.00	
4124	Pumps, Centrifugal 6", 90000 Gpm , 85 Hp	DAY	175.00	
4125	Pumps, Centrifugal 6", 90000 Gpm , 85 Hp	WK	778.00	
4126	Pumps, Centrifugal 6", 90000 Gpm , 85 Hp	MD	3,070.00	
01641 4200	Pumps, Diaphragm Portable, Gas			
4211	Pumps, Diaphragm 3", 3000 Gpm 3 Hp	DAY	34.00	
4212	Pumps, Diaphragm 3", 3000 Gpm 3 Hp	WK	140.00	
4213	Pumps, Diaphragm 3", 3000 Gpm 3 Hp	MD	514.00	
4214	Pumps, Diaphragm 4", 6000 Gpm 8 Hp	DAY	50.00	
4215	Pumps, Diaphragm 4", 6000 Gpm 8 Hp	WK	211.00	
4216	Pumps, Diaphragm 4", 6000 Gpm 8 Hp	MD	785.00	
01641 4300	Pumps, Sewer, Portable, Air Cooled, Gas			
4311	Pumps, Sewer, 2", 10000 Gpm 8 H p	DAY	29.40	
4312	Pumps, Sewer, 2", 10000 Gpm 8 H p	WK	148.00	
4313	Pumps, Sewer, 2", 10000 Gpm 8 H p	MD	580.00	
4314	Pumps, Sewer, 3", 18000 Gpm 9 H p	DAY	32.60	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4315	Pumps, Sewer, 3", 18000 Gpm 9 H p	WK	144.00	
4316	Pumps, Sewer, 3", 18000 Gpm 9 H p	MD	570.00	
4317	Pumps, Sewer, 4", 35000 Gpm 30 Hp	DAY	79.00	
4318	Pumps, Sewer, 4", 35000 Gpm 30 Hp	WK	360.00	
4319	Pumps, Sewer, 4", 35000 Gpm 30 Hp	MD	1,440.00	
01641 4400	Pumps, Submersible, Electric, 3 Phase, Solid			
4411	Pumps, Submersible, 4" - 3" Solid, 10 Hp	DAY	42.80	
4412	Pumps, Submersible, 4" - 3" Solid, 10 Hp	WK	179.00	
4413	Pumps, Submersible, 4" - 3" Solid, 10 Hp	MD	680.00	
4414	Pumps, Submersible, 6" - 3" Solid, 35 Hp	DAY	117.00	
4415	Pumps, Submersible, 6" - 3" Solid, 35 Hp	WK	425.00	
4416	Pumps, Submersible, 6" - 3" Solid, 35 Hp	MD	1,610.00	
4417	Pumps, Submersible, 6" - 3" Solid, 60 Hp	DAY	131.00	
4418	Pumps, Submersible, 6" - 3" Solid, 60 Hp	WK	560.00	
4419	Pumps, Submersible, 6" - 3" Solid, 60 Hp	MD	2,137.00	
01641 4500	Pump Hose, Suction, With Couplings			
4511	Pump Hose, 1-1/2" - 25' Suction W/Coupling	DAY	2.00	
4512	Pump Hose, 1-1/2" - 25' Suction W/Coupling	WK	7.00	
4513	Pump Hose, 1-1/2" - 25' Suction W/Coupling	MD	24.00	
4514	Pump Hose, 2" - 25' Suction W/Coupling	DAY	2.00	
4515	Pump Hose, 2" - 25' Suction W/Coupling	WK	8.00	
4516	Pump Hose, 2" - 25' Suction W/Coupling	MD	27.00	
4517	Pump Hose, 3" - 25' Suction W/Coupling	DAY	3.00	
4518	Pump Hose, 3" - 25' Suction W/Coupling	WK	11.00	
4519	Pump Hose, 3" - 25' Suction W/Coupling	MD	40.00	
4521	Pump Hose, 4" - 25' Suction W/Coupling	DAY	4.00	
4522	Pump Hose, 4" - 25' Suction W/Coupling	WK	16.00	
4523	Pump Hose, 4" - 25' Suction W/Coupling	MD	48.00	
01641 4600	Pump Hose, Discharge			
4611	Pump Hose, 1-1/2" I.D., 25' Discharge, 250 Psi, W/Coupling	DAY	1.00	
4612	Pump Hose, 1-1/2" I.D., 25' Discharge, 250 Psi, W/Coupling	WK	4.00	
4613	Pump Hose, 1-1/2" I.D., 25' Discharge, 250 Psi, W/Coupling	MD	13.00	
4614	Pump Hose, 2" I.D., 25' Discharge, 250 Psi, W/Coupling	DAY	1.00	
4615	Pump Hose, 2" I.D., 25' Discharge, 250 Psi, W/Coupling	WK	4.00	
4616	Pump Hose, 2" I.D., 25' Discharge, 250 Psi, W/Coupling	MD	15.00	
4617	Pump Hose, 3" I.D., 25' Discharge, 200 Psi, W/Coupling	DAY	2.00	
4618	Pump Hose, 3" I.D., 25' Discharge, 200 Psi, W/Coupling	WK	6.00	
4619	Pump Hose, 3" I.D., 25' Discharge, 200 Psi, W/Coupling	MD	23.00	
4621	Pump Hose, 4" I.D., 25' Discharge, 150 Psi, W/Coupling	DAY	2.00	
4622	Pump Hose, 4" I.D., 25' Discharge, 150 Psi, W/Coupling	WK	9.00	
4623	Pump Hose, 4" I.D., 25' Discharge, 150 Psi, W/Coupling	MD	31.00	
4624	Pump Hose, 6" I.D., 25' Discharge, 75 Psi, W/Coupling	DAY	7.00	
4625	Pump Hose, 6" I.D., 25' Discharge, 75 Psi, W/Coupling	WK	27.50	
4626	Pump Hose, 6" I.D., 25' Discharge, 75 Psi, W/Coupling	MD	96.00	
01641 4700	Sand Blasting Equipment, Portable			
4711	Sand Blasting 350# Capacity	DAY	12.00	
4712	Sand Blasting 350# Capacity	WK	46.00	
4713	Sand Blasting 350# Capacity	MD	165.00	
4714	Sand Blasting Hose, Air Coupled, 3/4" X 50'	DAY	8.00	
4715	Sand Blasting Hose, Air Coupled, 3/4" X 50'	WK	24.00	
4716	Sand Blasting Hose, Air Coupled, 3/4" X 50'	MD	70.00	
4717	Sand Blasting Hose, Air Coupled, 1" X 50'	DAY	10.00	
4718	Sand Blasting Hose, Air Coupled, 1" X 50'	WK	28.00	
4719	Sand Blasting Hose, Air Coupled, 1" X 50'	MD	80.00	
4721	Sand Blasting Hood, Canvas	DAY	6.40	
4722	Sand Blasting Hood, Canvas	WK	16.25	
4723	Sand Blasting Hood, Canvas	MD	36.50	
4724	Sand Blasting Hood, Air Feed	DAY	15.75	
4725	Sand Blasting Hood, Air Feed	WK	46.50	
4726	Sand Blasting Hood, Air Feed	MD	125.00	
4727	Sand Blasting Nozzles, Venturi	DAY	12.00	
4728	Sand Blasting Nozzles, Venturi	WK	32.05	
4729	Sand Blasting Nozzles, Venturi	MD	86.00	
01641 4900	Swings			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4911	Swings, Hi-Lo Electric, Swings, Pair	MD	600.00	
4912	Swings, Hi-Lo Electric, Cage	MD	215.00	
4913	Swings, Electric, Bos'n Chair	MD	150.00	
4914	Swings, Light Duty Winch And Sti rrup, 75', 125' Or 175'	MD	300.00	
4915	Swings, Roof Hooks, Pair	MD	35.00	
4916	Swings, Steel I-Beams 4" X 16' L ong	MD	35.00	
4917	Swings, Wall Bumpers	MD	10.00	
4918	Swings, Rope Grab	MD	10.00	
4919	Swings, Safty Harness & Belt	MD	10.00	
4921	Swings, Center Iron	MD	7.75	
4922	Swings, Aluminum Stage WGuard R ail 24" X 24'	MD	150.00	
01641 5000 Torches (Acetylen)				
5011	Torches, WRegulator, Tank,	DAY	5.40	
5012	Torches, WRegulator, Tank,	WK	19.25	
5013	Torches, WRegulator, Tank,	MD	61.15	
01641 5100 Light Duty Trucks, Gas Powered				
5111	Truck Gas, Light Duty 4 X 2 Conv entional Pu, 1/2-3/4 Ton	DAY	65.20	
5112	Truck Gas, Light Duty 4 X 2 Conv entional Pu, 1/2-3/4 Ton	WK	276.00	
5113	Truck Gas, Light Duty 4 X 2 Conv entional Pu, 1/2-3/4 Ton	MD	1,066.00	
5114	Truck Gas, Light Duty 4 X 4 Crew Pu, 3/4 Ton	DAY	67.00	
5115	Truck Gas, Light Duty 4 X 4 Crew Pu, 3/4 Ton	WK	300.00	
5116	Truck Gas, Light Duty 4 X 4 Crew Pu, 3/4 Ton	MD	1,193.00	
01641 5200 Flat Bed Trucks, Gas Powered				
5211	Truck Gas, Flat Bed 4 X 2, 1-1/2 Ton	DAY	69.20	
5212	Truck Gas, Flat Bed 4 X 2, 1-1/2 Ton	WK	325.00	
5213	Truck Gas, Flat Bed 4 X 2, 1-1/2 Ton	MD	1,303.00	
5214	Truck Gas, Flat Bed 4 X 2, 3	DAY	88.40	
5215	Truck Gas, Flat Bed 4 X 2, 3	WK	407.00	
5216	Truck Gas, Flat Bed 4 X 2, 3	MD	1,650.00	
01641 5300 Rear Dump Trucks				
5311	Truck Gas, Rear Dump, 4 X 2, 6 Y d, 195 Hp	DAY	150.20	
5312	Truck Gas, Rear Dump, 4 X 2, 6 Y d, 195 Hp	WK	676.00	
5313	Truck Gas, Rear Dump, 4 X 2, 6 Y d, 195 Hp	MD	2,658.00	
5314	Truck Gas, Rear Dump, 6 X 4, 10 Yd, 225 Hp	DAY	245.00	
5315	Truck Gas, Rear Dump, 6 X 4, 10 Yd, 225 Hp	WK	1,089.00	
5316	Truck Gas, Rear Dump, 6 X 4, 10 Yd, 225 Hp	MD	4,260.00	
5317	Tandem Dump Truck, 12Ton Payload	DAY	220.00	
5318	Tandem Dump Truck, 12Ton Payload	WK	775.00	
01641 5350 Trailers				
5351	Trailers, Platform 25Ton Capac.	DAY	100.00	
5352	Trailers, Platform 25Ton Capac.	WK	300.00	
5353	Trailers, Platform 25Ton Capac.	MD	950.00	
5354	Trailers, Platform 40Ton Capac.	DAY	150.00	
5355	Trailers, Platform 40Ton Capac.	WK	440.00	
5356	Trailers, Platform 40Ton Capac.	MD	1,320.00	
5357	Trailers, Platform 50Ton Capac.	DAY	175.00	
5358	Trailers, Platform 50Ton Capac.	WK	530.00	
5359	Trailers, Platform 50Ton Capac.	MD	1,580.00	
5361	Trailers, Platform 75Ton Capac.	DAY	255.00	
5362	Trailers, Platform 75Ton Capac.	WK	775.00	
5363	Trailers, Platform 75Ton Capac.	MDN	2,320.00	
01641 5400 Tractor-Trailer Dump, Diesel Powered				
5411	Tractor-Trailer, Diesel Powered, 4 X 2, 35-40000 Gvw, 250 Hp	DAY	230.00	
5412	Tractor-Trailer, Diesel Powered, 4 X 2, 35-40000 Gvw, 250 Hp	WK	1,005.00	
5413	Tractor-Trailer, Diesel Powered, 4 X 2, 35-40000 Gvw, 250 Hp	MD	3,864.00	
5414	Tractor-Trailer, Diesel Powered, 6 X 4, 55-75000 Gvw, 375 Hp	DAY	328.00	
5415	Tractor-Trailer, Diesel Powered, 6 X 4, 55-75000 Gvw, 375 Hp	WK	1,429.00	
5416	Tractor-Trailer, Diesel Powered, 6 X 4, 55-75000 Gvw, 375 Hp	MD	5,540.00	
01641 5500 Water Towers, Portable, Stand Mounted				
5511	Water Towers, Portable, Stand Mb unted, 5000 Gallon Capacity	DAY	36.00	
5512	Water Towers, Portable, Stand Mb unted, 5000 Gallon Capacity	WK	145.00	
5513	Water Towers, Portable, Stand Mb unted, 5000 Gallon Capacity	MD	520.00	
5514	Water Towers, Portable, Stand Mb unted, 10000 Gallon Capacity	DAY	48.00	
5515	Water Towers, Portable, Stand Mb unted, 10000 Gallon Capacity	WK	190.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5516	Water Towers, Portable, Stand Mounted, 10000 Gallon Capacity	MD	680.00	
5517	Water Towers, Portable, Stand Mounted, 20000 Gallon Capacity	DAY	76.00	
5518	Water Towers, Portable, Stand Mounted, 20000 Gallon Capacity	WK	305.00	
5519	Water Towers, Portable, Stand Mounted, 20000 Gallon Capacity	MD	1,085.00	
01641 5600	Welder, Portable, Including Operating Cost Per			
5611	Welder, Portable, Ac/Dc 150 Amp, Electric	DAY	8.00	
5612	Welder, Portable, Ac/Dc 150 Amp, Electric	WK	32.00	
5613	Welder, Portable, Ac/Dc 150 Amp, Electric	MD	110.00	
5614	Welder, Portable, Ac/Dc 250 Amp, Electric	DAY	29.00	
5615	Welder, Portable, Ac/Dc 250 Amp, Electric	WK	110.00	
5616	Welder, Portable, Ac/Dc 250 Amp, Electric	MD	395.00	
5617	Welder, Portable, Ac/Dc 300 Amp, Electric	DAY	37.40	
5618	Welder, Portable, Ac/Dc 300 Amp, Electric	WK	152.00	
5619	Welder, Portable, Ac/Dc 300 Amp, Electric	MD	560.00	
5621	Welder, Portable, Ac 150 Amp, 10 Hp, Gas	DAY	20.40	
5622	Welder, Portable, Ac 150 Amp, 10 Hp, Gas	WK	91.00	
5623	Welder, Portable, Ac 150 Amp, 10 Hp, Gas	MD	360.00	
5624	Welder, Portable, Ac 200 Amp, 35 Hp, Gas	DAY	46.60	
5625	Welder, Portable, Ac 200 Amp, 35 Hp, Gas	WK	220.00	
5626	Welder, Portable, Ac 200 Amp, 35 Hp, Gas	MD	900.00	
5627	Welder, Portable, Dc 300 Amp, 34 Hp, Gas With Trailer	DAY	65.80	
5628	Welder, Portable, Dc 300 Amp, 34 Hp, Gas With Trailer	WK	299.00	
5629	Welder, Portable, Dc 300 Amp, 34 Hp, Gas With Trailer	MD	1,190.00	
5631	Welder, Portable, Dc 350 Amp, 42 Hp, Gas With Trailer	DAY	77.20	
5632	Welder, Portable, Dc 350 Amp, 42 Hp, Gas With Trailer	WK	350.00	
5633	Welder, Portable, Dc 350 Amp, 42 Hp, Gas With Trailer	MD	1,410.00	
01641 5700	Cranes Hydraulic Truck Mounted, W/Operator			
5711	Cranes Hydraulic, 6 Ton Lift, 5 4' Boom Length	DAY	95.00	
5712	Cranes Hydraulic, 6 Ton Lift, 5 4' Boom Length	WK	396.00	
5713	Cranes Hydraulic, 6 Ton Lift, 5 4' Boom Length	MD	1,475.00	
5714	Cranes Hydraulic, 14 Ton Lift, 6 6' Boom Length	DAY	155.00	
5715	Cranes Hydraulic, 14 Ton Lift, 6 6' Boom Length	WK	650.00	
5716	Cranes Hydraulic, 14 Ton Lift, 6 6' Boom Length	MD	2,410.00	
5717	Cranes Hydraulic, 30 Ton Lift, 8 0' Boom Length	DAY	655.00	
5718	Cranes Hydraulic, 30 Ton Lift, 8 0' Boom Length	WK	2,800.00	
5719	Cranes Hydraulic, 30 Ton Lift, 8 0' Boom Length	MD	10,650.00	
5721	Cranes Hydraulic, 40 Ton Lift, 1 12' Boom Length	DAY	680.00	
5722	Cranes Hydraulic, 40 Ton Lift, 1 12' Boom Length	WK	2,918.00	
5723	Cranes Hydraulic, 40 Ton Lift, 1 12' Boom Length	MD	11,130.00	
5724	Cranes Hydraulic, 50 Ton Lift, 1 06' Boom Length	DAY	930.00	
5725	Cranes Hydraulic, 50 Ton Lift, 1 06' Boom Length	WK	3,985.00	
5726	Cranes Hydraulic, 50 Ton Lift, 1 06' Boom Length	MD	15,150.00	
5727	Cranes Hydraulic, 65 Ton Lift, 1 26' Boom Length	DAY	1,185.00	
5728	Cranes Hydraulic, 65 Ton Lift, 1 26' Boom Length	WK	5,050.00	
5729	Cranes Hydraulic, 65 Ton Lift, 1 26' Boom Length	MD	19,185.00	
5731	Cranes Hydraulic, 75 Ton Lift, 1 14' Boom Length	DAY	1,260.00	
5732	Cranes Hydraulic, 75 Ton Lift, 1 14' Boom Length	WK	5,370.00	
5733	Cranes Hydraulic, 75 Ton Lift, 1 14' Boom Length	MD	20,380.00	
5734	Cranes Hydraulic, 80 Ton Lift, 1 14' Boom Length	DAY	1,387.00	
5735	Cranes Hydraulic, 80 Ton Lift, 1 14' Boom Length	WK	5,910.00	
5736	Cranes Hydraulic, 80 Ton Lift, 1 14' Boom Length	MD	22,475.00	
01641 5800	Crane Mechanical, Cable Controlled, Truck Mounted			
5811	Crane Mechanical, 50 Ton Lift, 40' Boom Length	DAY	1,032.00	
5812	Crane Mechanical, 50 Ton Lift, 40' Boom Length	WK	4,350.00	
5813	Crane Mechanical, 50 Ton Lift, 40' Boom Length	MD	16,380.00	
5814	Crane Mechanical, 90 Ton Lift, 50' Boom Length	DAY	1,210.00	
5815	Crane Mechanical, 90 Ton Lift, 50' Boom Length	WK	5,150.00	
5816	Crane Mechanical, 90 Ton Lift, 50' Boom Length	MD	19,430.00	
5817	Crane Mechanical, 125 Ton Lift, 50' Boom Length	DAY	1,315.00	
5818	Crane Mechanical, 125 Ton Lift, 50' Boom Length	WK	5,610.00	
5819	Crane Mechanical, 125 Ton Lift, 50' Boom Length	MD	21,365.00	
5821	Crane Mechanical, 150 Ton Lift, 50' Boom Length	DAY	1,610.00	
5822	Crane Mechanical, 150 Ton Lift, 50' Boom Length	WK	6,860.00	
5823	Crane Mechanical, 150 Ton Lift, 50' Boom Length	MD	25,850.00	
5824	Crane Mechanical, 300 Ton Lift, 70' Boom Length	DAY	3,200.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5825	Crane Mechanical, 300 Ton Lift, 70' Boom Length	WK	13,555.00	
5826	Crane Mechanical, 300 Ton Lift, 70' Boom Length	MD	51,030.00	
01641 5900	Move On Costs For Mechanical Cranes Within A 30			
5911	Mbve On Cost, Mechanical Crane, 50 Ton	HR	600.00	
5912	Mbve On Cost, Mechanical Crane, 90 Ton	HR	900.00	
5913	Mbve On Cost, Mechanical Crane, 125 Ton	HR	1,500.00	
5914	Mbve On Cost, Mechanical Crane, 150 Ton	HR	3,000.00	
5915	Mbve On Cost, Mechanical Crane, 300 Ton	HR	4,000.00	
01641 6000	Pecco Personnel & Material Hoists Ph 5000 Sf 480			
6011	Hoist, Up To 70 Feet	MD	2,565.00	
6012	Hoist, 100 Feet	MD	2,765.00	
6013	Hoist, 150 Feet	MD	3,110.00	
6014	Hoist, 200 Feet	MD	3,445.00	
6015	Hoist, 300 Feet	MD	4,145.00	
01641 6100	Pecco Personnel & Material Hoists Ph 5000 Sf D 2			
6111	Hoist, Up To 70 Feet	MD	4,542.00	
6112	Hoist, 100 Feet	MD	4,841.00	
6113	Hoist, 150 Feet	MD	5,368.00	
6114	Hoist, 200 Feet	MD	5,894.00	
6115	Hoist, 300 Feet	MD	6,947.00	
01641 6200	Cranes Tower, Pc 1400Sk, W18' Jib Ht 22,000# Mx			
6211	Cranes Tower, Pc 1400Sk, 4 Mb	MD	4,200.00	
6212	Cranes Tower, Pc 1400Sk, 5 Mb	MD	4,200.00	
6213	Cranes Tower, Pc 1400Sk, 6 Mb	MD	3,800.00	
6214	Cranes Tower, Pc 1400Sk, 7 Mb	MD	3,800.00	
6215	Cranes Tower, Pc 1400Sk, 8 Mb	MD	3,800.00	
6216	Cranes Tower, Pc 1400Sk, 9 Mb	MD	3,800.00	
6217	Cranes Tower, Pc 1400Sk, 10 Mb	MD	3,500.00	
6218	Cranes Tower, Pc 1400Sk, 11 Mb	MD	3,500.00	
6219	Cranes Tower, Pc 1400Sk, 12 Mb	MD	3,500.00	
6221	Cranes Tower, Pc 1400Sk, Over 12 Mb	MD	3,300.00	
6222	Cranes Tower, Sk 160 O.T. Sections	FT	23.00	
01641 6300	Cranes Tower, Sk 135 W18' Jib Ht 17,600# Mx. C			
6311	Cranes Tower, Sk 135, 4 Mb	MD	7,600.00	
6312	Cranes Tower, Sk 135, 5 Mb	MD	7,600.00	
6313	Cranes Tower, Sk 135, 6 Mb	MD	6,900.00	
6314	Cranes Tower, Sk 135, 7 Mb	MD	6,900.00	
6315	Cranes Tower, Sk 135, 8 Mb	MD	6,900.00	
6316	Cranes Tower, Sk 135, 9 Mb	MD	6,900.00	
6317	Cranes Tower, Sk 135, 10 Mb	MD	6,600.00	
6318	Cranes Tower, Sk 135, 11 Mb	MD	6,600.00	
6319	Cranes Tower, Sk 135, 12 Mb	MD	6,600.00	
6321	Cranes Tower, Sk 135, Over 12	MD	6,300.00	
6322	Cranes Tower, Sk 135 O.T. Sections	FT	23.00	
6323	Crane, Top Climbing Unit	MD	1,300.00	
01641 6400	Cranes Tower, Skk 140 W18' Jib Ht 28,000# Mx.			
6411	Cranes Tower, Sk 140, 4 Mb	MD	8,100.00	
6412	Cranes Tower, Sk 140, 5 Mb	MD	8,100.00	
6413	Cranes Tower, Sk 140, 6 Mb	MD	7,300.00	
6414	Cranes Tower, Sk 140, 7 Mb	MD	7,300.00	
6415	Cranes Tower, Sk 140, 8 Mb	MD	7,300.00	
6416	Cranes Tower, Sk 140, 9 Mb	MD	7,300.00	
6417	Cranes Tower, Sk 140, 10 Mb	MD	7,000.00	
6418	Cranes Tower, Sk 140, 11 Mb	MD	7,000.00	
6419	Cranes Tower, Sk 140, 12 Mb	MD	7,000.00	
6421	Cranes Tower, Sk 140, Over 12	MD	6,700.00	
6422	Cranes Tower, Sk 160 O.T. Sections	FT	23.00	
6423	Crane, Top Climbing Unit	MD	1,300.00	
01641 6500	Cranes Tower, Sn 141 Wb/Tower 17,600# Mx. Capac			
6511	Cranes Tower, Sn 141, 4 Mb	MD	12,400.00	
6512	Cranes Tower, Sn 141, 5 Mb	MD	12,400.00	
6513	Cranes Tower, Sn 141, 6 Mb	MD	10,800.00	
6514	Cranes Tower, Sn 141, 7 Mb	MD	10,800.00	
6515	Cranes Tower, Sn 141, 8 Mb	MD	10,800.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6516	Cranes Tower, Sn 141, 9 Mb	MD	10,800.00	
6517	Cranes Tower, Sn 141, 10 Mb	MD	10,300.00	
6518	Cranes Tower, Sn 141, 11 Mb	MD	10,300.00	
6519	Cranes Tower, Sn 141, 12 Mb	MD	10,300.00	
6521	Cranes Tower, Sn 141, Over 12	MD	9,600.00	
6522	Cranes Tower, Sk 160 O.T. Sectio ns	FT	23.00	
6523	Crane, Top Climbing Unit	MD	1,300.00	
01641 6600	Cranes Tower, Sn 160 Wb/Tower 28,000# Mx. Capac			
6611	Cranes Tower, Sn 160, 4 Mb	MD	13,700.00	
6612	Cranes Tower, Sn 160, 5 Mb	MD	13,700.00	
6613	Cranes Tower, Sn 160, 6 Mb	MD	12,000.00	
6614	Cranes Tower, Sn 160, 7 Mb	MD	12,000.00	
6615	Cranes Tower, Sn 160, 8 Mb	MD	12,000.00	
6616	Cranes Tower, Sn 160, 9 Mb	MD	12,000.00	
6617	Cranes Tower, Sn 160, 10 Mb	MD	11,400.00	
6618	Cranes Tower, Sn 160, 11 Mb	MD	11,400.00	
6619	Cranes Tower, Sn 160, 12 Mb	MD	11,400.00	
6621	Cranes Tower, Sn 160, Over 12	MD	10,600.00	
6622	Cranes Tower, Sk 160 O.T. Sectio ns	FT	23.00	
6623	Crane, Top Climbing Unit	MD	1,300.00	
01641 6700	Cranes Tower, Sk 180 W21' Jib Ht 27,600# Mx. C			
6711	Cranes Tower, Sk 180, 4 Mb	MD	10,100.00	
6712	Cranes Tower, Sk 180, 5 Mb	MD	10,100.00	
6713	Cranes Tower, Sk 180, 6 Mb	MD	9,200.00	
6714	Cranes Tower, Sk 180, 7 Mb	MD	9,200.00	
6715	Cranes Tower, Sk 180, 8 Mb	MD	9,200.00	
6716	Cranes Tower, Sk 180, 9 Mb	MD	9,200.00	
6717	Cranes Tower, Sk 180, 10 Mb	MD	8,700.00	
6718	Cranes Tower, Sk 180, 11 Mb	MD	8,700.00	
6719	Cranes Tower, Sk 180, 12 Mb	MD	8,700.00	
6721	Cranes Tower, Sk 180, Over 12	MD	8,300.00	
6722	Cranes Tower, Sk 160 O.T. Sectio ns	FT	23.00	
6723	Crane, Top Climbing Unit	MD	1,300.00	
01641 6800	Cranes Tower, Sk 225 W103' Jib Ht 44,000# Mx.			
6811	Cranes Tower, Sk 225, 4 Mb	MD	12,900.00	
6812	Cranes Tower, Sk 225, 5 Mb	MD	12,900.00	
6813	Cranes Tower, Sk 225, 6 Mb	MD	11,600.00	
6814	Cranes Tower, Sk 225, 7 Mb	MD	11,600.00	
6815	Cranes Tower, Sk 225, 8 Mb	MD	11,600.00	
6816	Cranes Tower, Sk 225, 9 Mb	MD	11,000.00	
6817	Cranes Tower, Sk 225, 10 Mb	MD	11,000.00	
6818	Cranes Tower, Sk 225, 11 Mb	MD	11,000.00	
6819	Cranes Tower, Sk 225, 12 Mb	MD	11,000.00	
6821	Cranes Tower, Sk 225, Over 12	MD	10,500.00	
6822	Cranes Tower, Sk 225 O.T. Sectio ns	FT	23.00	
6823	Crane, Top Climbing Unit	MD	2,300.00	
01641 6900	Cranes Tower, Sk 280 W103' Jib Ht 35,200# Mx.			
6911	Cranes Tower, Sk 280, 4 Mb	MD	13,600.00	
6912	Cranes Tower, Sk 280, 5 Mb	MD	13,600.00	
6913	Cranes Tower, Sk 280, 6 Mb	MD	12,200.00	
6914	Cranes Tower, Sk 280, 7 Mb	MD	12,200.00	
6915	Cranes Tower, Sk 280, 8 Mb	MD	12,200.00	
6916	Cranes Tower, Sk 280, 9 Mb	MD	12,200.00	
6917	Cranes Tower, Sk 280, 10 Mb	MD	11,600.00	
6918	Cranes Tower, Sk 280, 11 Mb	MD	11,600.00	
6919	Cranes Tower, Sk 280, 12 Mb	MD	11,600.00	
6921	Cranes Tower, Sk 280, Over 12	MD	11,000.00	
6922	Cranes Tower, Sk 225 O.T. Sectio ns	FT	23.00	
6923	Crane, Top Climbing Unit	MD	2,300.00	
01641 7000	Cranes Tower, Sk 355 W105' Jib Ht 55,200# Mx.			
7011	Cranes Tower, Sk 355, 4 Mb	MD	15,900.00	
7012	Cranes Tower, Sk 355, 5 Mb	MD	15,900.00	
7013	Cranes Tower, Sk 355, 6 Mb	MD	14,300.00	
7014	Cranes Tower, Sk 355, 7 Mb	MD	14,300.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7015	Cranes Tower, Sk 355, 8 Mb	MD	14,300.00	
7016	Cranes Tower, Sk 355, 9 Mb	MD	14,300.00	
7017	Cranes Tower, Sk 355, 10 Mb	MD	13,700.00	
7018	Cranes Tower, Sk 355, 11 Mb	MD	13,700.00	
7019	Cranes Tower, Sk 355, 12 Mb	MD	13,700.00	
7021	Cranes Tower, Sk 355, Over 12	MD	13,000.00	
7022	Cranes Tower, Sk 355 O.T. Sections	FT	27.00	
7023	Crane, Top Climbing Unit	MD	2,500.00	
01641 7100	Cranes Tower, Sn 355 Wb/Tower 35,200# Mx. Capac			
7111	Cranes Tower, Sn 355, 4 Mb	MD	22,400.00	
7112	Cranes Tower, Sn 355, 5 Mb	MD	22,400.00	
7113	Cranes Tower, Sn 355, 6 Mb	MD	19,900.00	
7114	Cranes Tower, Sn 355, 7 Mb	MD	19,900.00	
7115	Cranes Tower, Sn 355, 8 Mb	MD	19,900.00	
7116	Cranes Tower, Sn 355, 9 Mb	MD	19,900.00	
7117	Cranes Tower, Sn 355, 10 Mb	MD	18,700.00	
7118	Cranes Tower, Sn 355, 11 Mb	MD	18,700.00	
7119	Cranes Tower, Sn 355, 12 Mb	MD	18,700.00	
7121	Cranes Tower, Sn 355, Over 12	MD	17,500.00	
7122	Cranes Tower, Sk 355 O.T. Sections	FT	27.00	
7123	Crane, Top Climbing Unit	MD	3,000.00	
01641 7200	Cranes Tower, Sk 400 W105' Jib Ht 44,000# Mx.			
7211	Cranes Tower, Sk 400, 4 Mb	MD	16,700.00	
7212	Cranes Tower, Sk 400, 5 Mb	MD	16,700.00	
7213	Cranes Tower, Sk 400, 6 Mb	MD	15,100.00	
7214	Cranes Tower, Sk 400, 7 Mb	MD	15,100.00	
7215	Cranes Tower, Sk 400, 8 Mb	MD	15,100.00	
7216	Cranes Tower, Sk 400, 9 Mb	MD	15,100.00	
7217	Cranes Tower, Sk 400, 10 Mb	MD	14,400.00	
7218	Cranes Tower, Sk 400, 11 Mb	MD	14,400.00	
7219	Cranes Tower, Sk 400, 12 Mb	MD	14,400.00	
7221	Cranes Tower, Sk 400, Over 12	MD	13,700.00	
7222	Cranes Tower, O.T. Sections	FT	27.00	
7223	Crane, Top Climbing Unit	MD	2,500.00	
01641 7300	Cranes Tower, Sk 560 W133' Jib Ht 70,600# Mx.			
7311	Cranes Tower, Sk 560, 4 Mb	MD	21,400.00	
7312	Cranes Tower, Sk 560, 5 Mb	MD	21,400.00	
7313	Cranes Tower, Sk 560, 6 Mb	MD	19,000.00	
7314	Cranes Tower, Sk 560, 7 Mb	MD	19,000.00	
7315	Cranes Tower, Sk 560, 8 Mb	MD	19,000.00	
7316	Cranes Tower, Sk 560, 9 Mb	MD	19,000.00	
7317	Cranes Tower, Sk 560, 10 Mb	MD	17,800.00	
7318	Cranes Tower, Sk 560, 11 Mb	MD	17,800.00	
7319	Cranes Tower, Sk 560, 12 Mb	MD	17,800.00	
7321	Cranes Tower, Sk 560, Over 12	MD	16,700.00	
7322	Cranes Tower, O.T. Sections	FT	30.00	
7323	Crane, Top Climbing Unit	MD	2,700.00	
01641 7400	Forklifts			
7401	4000 To 5999 LB Forklift	DAY	50.00	
7402	4000 To 5999 LB Forklift	WK	160.00	
7403	4000 To 5999 LB Forklift	MD	465.00	
7404	6000 To 6999 LB Forklift	DAY	55.00	
7405	6000 To 6999 LB Forklift	WK	175.00	
7406	6000 To 6999 LB Forklift	MD	510.00	
7407	7000 To 8999 LB Forklift	DAY	3.46	
7408	7000 To 8999 LB Forklift	WK	230.00	
7409	7000 To 8999 LB Forklift	MD	690.00	
7411	9000 To 12000 LB Forklift	DAY	115.00	
7412	9000 To 12000 LB Forklift	WK	285.00	
7413	9000 To 12000 LB Forklift	MD	875.00	
01641 7500	Excavators - Hydraulic (Backhoes), Crawler Dies			
7511	Excavator, 3/8 CY	DAY	90.00	
7512	Excavator, 3/8 CY	WK	260.00	
7513	Excavator, 3/8 CY	MD	755.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7514	Excavator, 1/2 CY	DAY	105.00	
7515	Excavator, 1/2 CY	WK	333.00	
7516	Excavator, 1/2 CY	MD	945.00	
7517	Excavator, 5/8 CY	DAY	115.00	
7518	Excavator, 5/8 CY	WK	465.00	
7519	Excavator, 5/8 CY	MD	1,075.00	
7521	Excavator, 3/4 CY	DAY	125.00	
7522	Excavator, 3/4 CY	WK	395.00	
7523	Excavator, 3/4 CY	MD	1,130.00	
7524	Excavator, 7/8 To 1 CY	DAY	135.00	
7525	Excavator, 7/8 To 1 CY	WK	425.00	
7526	Excavator, 7/8 To 1 CY	MD	1,245.00	
7527	Excavator, 1-1/8 To 1-1/4 CY	DAY	145.00	
7528	Excavator, 1-1/8 To 1-1/4 CY	WK	475.00	
7529	Excavator, 1-1/8 To 1-1/4 CY	MD	1,380.00	
7531	Excavator, 1-1/2 To 1-3/8 CY	DAY	175.00	
7532	Excavator, 1-1/2 To 1-3/8 CY	WK	545.00	
7533	Excavator, 1-1/2 To 1-3/8 CY	MD	1,560.00	
7534	Excavator, 1-5/8 To 1-7/8 CY	DAY	185.00	
7535	Excavator, 1-5/8 To 1-7/8 CY	WK	595.00	
7536	Excavator, 1-5/8 To 1-7/8 CY	MD	1,740.00	
7537	Excavator, 2 To 2-3/8 CY	DAY	240.00	
7538	Excavator, 2 To 2-3/8 CY	WK	780.00	
7539	Excavator, 2 To 2-3/8 CY	MD	2,225.00	
7541	Excavator, 2-1/2 To 2-7/8 CY	DAY	290.00	
7542	Excavator, 2-1/2 To 2-7/8 CY	WK	1,015.00	
7543	Excavator, 2-1/2 To 2-7/8 CY	MD	2,890.00	
7544	Excavator, 3 To 3-3/4 CY	DAY	350.00	
7545	Excavator, 3 To 3-3/4 CY	WK	1,110.00	
7546	Excavator, 3 To 3-3/4 CY	MD	3,333.00	
7547	Excavator, 4 To 5-3/4 CY	DAY	495.00	
7548	Excavator, 4 To 5-3/4 CY	WK	1,345.00	
7549	Excavator, 4 To 5-3/4 CY	MD	5,645.00	
7551	Excavator, 6 To 11 CY	DAY	650.00	
7552	Excavator, 6 To 11 CY	WK	1,755.00	
7553	Excavator, 6 To 11 CY	MD	5,140.00	
01641 7600	Miscellaneous Items			
7601	Extension Ladder, 24'	DAY	5.00	
7602	Extension Ladder, 24'	WK	15.00	
7603	Extension Ladder, 24'	MD	30.00	
7604	Extension Ladder, 32'	DAY	7.00	
7605	Extension Ladder, 32'	WK	17.50	
7606	Extension Ladder, 32'	MD	35.00	
7607	Extension Ladder, 40'	DAY	8.25	
7608	Extension Ladder, 40'	WK	25.00	
7609	Extension Ladder, 40'	MD	50.00	
7611	Laser, Interior Beam Type	DAY	20.00	
7612	Laser, Interior Beam Type	WK	60.00	
7613	Laser, Interior Beam Type	MD	165.00	
7614	Laser, Pipe & Sewer Type/Leveling	DAY	30.00	
7615	Laser, Pipe & Sewer Type/Leveling	WK	90.00	
7616	Laser, Pipe & Sewer Type/Leveling	MD	255.00	
7617	Laser, Rotating Beam Type	DAY	17.50	
7618	Laser, Rotating Beam Type	WK	55.00	
7619	Laser, Rotating Beam Type	MD	160.00	
7621	Electronic Levels	DAY	9.00	
7622	Electronic Levels	WK	25.00	
7623	Electronic Levels	MD	75.00	
7631	Transit W Tripod	DAY	9.00	
7632	Steel Roadway Plates 8"x12" Set up & Remove	DAY	14.00	
7633	Steel Roadway Plates 12"x12" Set -up & Remove	DAY	18.00	
01641 7700	Drills-Rock, Air Or Hydraulic Powered			
7701	Crawler Mounted Drill, Track	DAY	550.00	
7702	Crawler Mounted Drill, Track	WK	1,650.00	
7703	Crawler Mounted Drill, Track	MD	4,585.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
01641 7800 Trench Plates				
Note: 5 Day Minimum				
7801	1"x4' x8' Trench Plate	DAY	2.25	
7802	1"x4' x10' Trench Plate	DAY	2.50	
7803	1"x5' x10' Trench Plate	DAY	2.75	
7804	1"x6' x8' Trench Plate	DAY	3.00	
7805	1"x6' x10' Trench Plate	DAY	3.50	
7806	1"x6' x12' Trench Plate	DAY	4.00	
7807	1"x8' x10' Trench Plate	DAY	5.50	
7808	1"x8' x12' Trench Plate	DAY	6.00	
7809	1"x8' x16' Trench Plate	DAY	8.00	
7811	1"x8' x10' Jumbo Shoring Plate	DAY	10.00	
7812	1-1/2"x8' x15' Jumbo Shoring Plate	DAY	13.00	
01641 7900 Trench Shields				
Note: 7 Day Minimum				
7901	4' x10' Trench Shield	WK	100.00	
7902	4' x10' Trench Shield	MD	300.00	
7903	6' x10' Trench Shield	WK	150.00	
7904	6' x10' Trench Shield	MD	450.00	
7905	8' x10' Trench Shield	WK	200.00	
7906	8' x10' Trench Shield	MD	600.00	
7907	4' x12' Trench Shield	WK	150.00	
7908	4' x12' Trench Shield	MD	450.00	
7909	8' x12' Trench Shield	WK	300.00	
7911	8' x12' Trench Shield	MD	900.00	
7912	4' x16' Trench Shield	WK	175.00	
7913	4' x16' Trench Shield	MD	525.00	
7914	6' x16' Trench Shield	WK	270.00	
7915	6' x16' Trench Shield	MD	810.00	
7916	8' x16' Trench Shield	WK	350.00	
7917	8' x16' Trench Shield	MD	1,050.00	
7918	4' x20' Trench Shield	WK	200.00	
7919	4' x20' Trench Shield	MD	600.00	
7921	6' x20' Trench Shield	WK	300.00	
7922	6' x20' Trench Shield	MD	900.00	
7923	8' x20' Trench Shield	WK	400.00	
7924	8' x20' Trench Shield	MD	1,200.00	
7925	10' x20' Trench Shield	WK	500.00	
7926	10' x20' Trench Shield	MD	1,500.00	
7927	4' x24' Trench Shield	WK	300.00	
7928	4' x24' Trench Shield	MD	900.00	
7929	6' x24' Trench Shield	WK	450.00	
7931	6' x24' Trench Shield	MD	1,350.00	
7932	8' x24' Trench Shield	WK	600.00	
7933	8' x24' Trench Shield	MD	1,800.00	
7934	8' x4' Manhole Box	WK	175.00	
7935	8' x4' Manhole Box	MD	525.00	
7936	8' x8' Manhole Box	WK	250.00	
7937	8' x8' Manhole Box	MD	750.00	
01641 8100 Aluminum Hydraulic Shoring				
01641 8110 Aluminum Hydraulic Shoring 3-1/2', 5' Or 7' Rail				
8111	17"-27", 22"-36", 25"-42", 28"-46" Hydraulic Shoring	DAY	3.00	
8112	17"-27", 22"-36", 25"-42", 28"-46" Hydraulic Shoring	WK	20.00	
8113	17"-27", 22"-36", 25"-42", 28"-46" Hydraulic Shoring	MD	54.00	
8114	34"-55", 40"-64" Hydraulic Shoring	DAY	4.00	
8115	34"-55", 40"-64" Hydraulic Shoring	WK	24.00	
8116	34"-55", 40"-64" Hydraulic Shoring	MD	63.00	
8117	46"-82", 52"-88" Hydraulic Shoring	DAY	5.00	
8118	46"-82", 52"-88" Hydraulic Shoring	WK	28.00	
8119	46"-82", 52"-88" Hydraulic Shoring	MD	75.00	
01641 8120 Aluminum Hydraulic Shoring All Trench Widths Fro				
8121	Hydraulic Shoring In 2' Rails	DAY	3.00	
8122	Hydraulic Shoring In 2' Rails	WK	14.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8123	Hydraulic Shoring In 2' Rails	MD	42.00	
8124	Hydraulic Shoring, 9' & 12' Rails	DAY	12.00	
8125	Hydraulic Shoring, 9' & 12' Rails	WK	56.00	
8126	Hydraulic Shoring, 9' & 12' Rails	MD	150.00	
8127	Hydraulic Shoring In 16' Rails	DAY	14.00	
8128	Hydraulic Shoring In 16' Rails	WK	56.00	
8129	Hydraulic Shoring In 16' Rails	MD	200.00	
01641 8130 Extensions				
8131	Extensions, 5" & 9"	DAY	1.00	
8132	Extensions, 5" & 9"	WK	5.00	
8133	Extensions, 5" & 9"	MD	15.00	
8134	Extensions, 18", 27" & 36"	DAY	3.00	
8135	Extensions, 18", 27" & 36"	WK	8.75	
8136	Extensions, 18", 27" & 36"	MD	25.50	
8137	Extensions, 48", 54" & 63"	DAY	4.50	
8138	Extensions, 48", 54" & 63"	WK	11.00	
8139	Extensions, 48", 54" & 63"	MD	33.00	
01641 8140 Shoring Tools				
8141	5 Gal Pump W/ 1 Qt Fluid	DAY	2.00	
8142	5 Gal Pump W/ 1 Qt Fluid	WK	8.00	
8143	5 Gal Pump W/ 1 Qt Fluid	MD	24.00	
8144	Release Tool	DAY	0.50	
8145	Release Tool	WK	2.00	
8146	Release Tool	MD	8.00	
8147	Release Hook	DAY	0.50	
8148	Release Hook	WK	2.00	
8149	Release Hook	MD	8.00	
8151	Shoring Fluid	QT	3.71	
8152	Shoring Fluid, Per Case	EA	39.54	
8153	Screw Jacks	WK	5.00	
8154	Screw Jacks	MD	15.00	

01642 Operators For Equipment Rentals

01642 1000 Power Equipment Operators - Building

1001	Heavy Equipment Operator (Crane)	HR	45.42	
1002	Medium Equipment Operator	HR	44.38	
1003	Light Equipment Operator (Front End Loader)	HR	41.65	
1004	Oiler & Greaser	HR	44.85	

01642 2000 Power Equipment Operators & Laborers - Heavy

2001	Heavy Equipment Operator (Crane)	HR	45.42	
2002	Medium Equipment Operator	HR	44.38	
2003	Light Equip. Operator (Bulldozer, Front End Loader & motor grade)	HR	41.65	
2004	Oiler/greaser & pump	HR	44.85	
2005	Laborer #1 (Buggy rollers, Conveyor Operators,...)	HR	43.32	

01650 Crane Rental And Operator

01650 2300 Crane Rental - 90 TON, Truck Mounted (4HR MN)

2310	Similar to Dover Md 305FA w/Power Platform Arms, & 2 Call Sta		20,030.15	
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01660 3100 Concrete Testing

3111	Compression, 6 X 12 Cylinder Astm C39	EA	18.53	
3112	Cylinder Molds 6 X 12, Single Use, Plastic, Astm C470	EA	2.47	
3113	Cylinder Stored & Cured, Not Tested	EA	14.82	
3114	Compression Test, Cores Astm	EA	24.71	
3115	Flexural Test, 6 X 6 X 18, Astm Astm C78	EA	37.06	
3116	Unit Weight, Concrete Cylinders	EA	24.71	
3117	Modules Of Elasticity, Astm	EA	105.02	
3118	Concrete Mix Designs	EA	111.20	
3119	Conc. Mix Design Revision Or Review	EA	80.31	
3121	Laboratory Trial Batch, Astm C19 2	EA	370.66	
3122	Drying Shrinkage, Astm C157	EA	308.88	
3123	Splitting Strength Test, Astm C49 6	EA	37.06	

01660 3200 Cement Testing

3211	Grab Sample Sealing & Storing	EA	18.53	
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01660 3300 Aggregate Testing

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3311	Sieve Analysis, Course Aggregate , Astm C136	EA	43.24	
3312	Sieve Analysis, Fine Aggregate, Astm C136	EA	55.59	
3313	Sieve Analysis, Pit Run, Astm C1 36	EA	80.31	
3314	Special Gravity, Course, Astm C1 27	EA	43.24	
3315	Special Gravity, Fine, Astm	EA	58.69	
3316	Cleanliness Value, California Test Method 227	EA	67.96	
3317	Sand Equivalent, Astm C2419	EA	61.78	
3318	Durability Test, California Test Method 229	EA	123.55	
3319	Sodium And Magnesium Soundness, Asym C88	EA	172.98	
3321	Los Angeles Rattler, Astm C131	EA	148.26	
3322	Unit Weight Of Aggregates, Astm C29	EA	30.89	
3323	Organic Impurities In Sand, Astm C40	EA	37.06	
3324	Crushed Particle, Astm California Test Method	EA	37.06	
3325	Clay Lump And Friable Particles, Astm C142	EA	74.13	
3326	Mortar Making Properties Of Fine Aggregates, Astm C87	EA	222.39	
01660 3400 Asphaltic Concrete Testing				
3411	Stability Tests, Premixed, Astm D1559	EA	74.13	
3412	Stability Tests, Lab. Mixed, Astm D1559	EA	86.49	
3413	Swell Test, California Test Method 305	EA	74.13	
3414	Extraction % Asphalt, Including Gradation	EA	123.55	
3415	Maximum Theoretical Unit Weight, Astm C2041	EA	80.31	
3416	Unit Weight Sample Requiring Compaction, California Test	EA	61.78	
3417	Unit Weight Compacted Sample Or Core, California Method 308	EA	49.43	
3418	Nuclear Field Density Testing, 4 Hour Minimum	HR	55.59	
3419	Film Stripping	EA	55.59	
01660 3500 Special Testing				
3511	Universal Testing Machine And Operator (400,000 Lbs Cap.)	HR	185.33	
3512	Universal Testing Machine And Operator (120,000 Lbs Cap.)	HR	154.45	
3513	Each Additional Technician For 1 Or 2	HR	55.59	
3514	Hydraulic Jack, Pump & Operator, (Rebar And Bolt Pullout Test)	HR	92.67	
3515	Concrete And Masonry Sawing, (In Laboratory)	HR	86.49	
3516	Asphalt Roofing Cut-Out Samples, Unit Weight	EA	61.78	
3517	Complete Analysis, Astm D2829 Or D3617	EA	370.66	
3518	Compression Test, All Type Material, 2" X 2" Cube	EA	24.71	
01660 3600 Welding Qualification And Welding Procedure				
3611	Aws, Limited Thickness Plate Per Position, (Awd1.1-81)	EA	154.45	
3612	Aws, Unlimited Thickness Plate, Per Position, (Awd1.1-81)	EA	185.33	
3613	Aws, Pipe, Per Position, (Awd1.1-81)	EA	185.33	
3614	Aws, Bar Sizes #3 Thru #9, (Awd 1.4-79)	EA	135.90	
3615	Aws, Bar Sizes #10 And #11, (Awd 1.4-79)	EA	148.26	
3616	Aws, Bar Sizes #14 And #18, (Awd 1.4-79)	EA	185.33	
3617	Asme Plate Or Pipe	EA	185.33	
3618	Office Of State Architect Circular #6 (Osa), Light Gage	EA	166.80	
01660 3700 Masonry Testing				
3711	Compression Test, Mortar 2 X 4 Cylinder Ubc	EA	14.82	
3712	Compression Test, Grout Ubc	EA	18.53	
3713	Mortar And Grout Samples Stored And Cured	EA	12.35	
3714	Compression Test, Cores	EA	24.71	
3715	Compression Test, Masonry Prism Astm E447	EA	105.02	
3716	Shear Test, Cores	EA	55.59	
01660 3800 Block Testing (Astm C140 Or Cma Per Specimen)				
3811	Compression Test, To 8 X 8 X 16	EA	30.89	
3812	Compression Test, Larger Than 8 X 8 X 16	EA	37.06	
3813	Absorption Test, Moisture Content And Unit Weight	EA	37.06	
3814	Linear Shrinkage, (Cma Rapid Method)	EA	98.84	
3815	Tensile Test, (Cma Method)	EA	98.84	
3816	Moisture Condition By Relative Humidity, Astm C427, First Unit	EA	172.98	
3817	Moisture Condition By Relative Humidity, Astm C427, Additional	EA	86.49	
3818	Efflorescence, Block Only	EA	37.06	
3819	Efflorescence, Block And Mortar	EA	49.43	
01660 3900 Brick Testing (Astm C67 Per Specimen)				
3911	Modulus Of Rupture	EA	24.71	
3912	Compression Test	EA	24.71	
3913	Absorption Test	EA	21.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3914	Saturation Test	EA	30.89	
3915	Efflorescence	EA	24.71	
01660 4100	Roof Tile Testing			
4111	Crushing Test	EA	21.00	
4112	Absrption Test	EA	21.00	
01660 4200	Steel, Aluminum And Plastic Testing			
4211	Reinforcing Steel, Tensile Tests , #11 Bar Or Smaller	EA	30.89	
4212	Reinforcing Steel, Tensile Tests , #14 Bar Or Larger	EA	61.78	
4213	Reinforcing Steel, Bend Tests, # 11 Bar Or Smaller	EA	24.71	
4214	Welded Specimens, Tensile Tests #11 Bars And Smaller	EA	34.59	
4215	Prestress Cable, 7 Wire, Astm A4 16	EA	86.49	
4216	Prestress Wire, 1/2" Max Astm A4 21	EA	49.43	
4217	Structural Steel, Tensile Test, Up To 200000#	EA	37.06	
4218	Structural Steel, Bend Test	EA	24.71	
4219	Structural Steel, Pipe Flattenin g Test	EA	22.24	
4221	Mechanical Tests, Mbdulus Of Ela sticity	HR	92.67	
4222	Mechanical Tests, Nick Break Tes t Re-Bar Only	EA	37.06	
4223	Mechanical Tests, Hardness Test	EA	30.89	
01660 4300	Soils Testing			
4311	Plasticity Index, Astm D424, Liq uid Limit	EA	98.84	
4312	Laboratory Compaction Test, Astm D1557	EA	117.37	
4313	"R" Resistance Value Minimum 3 P ts., Calif. Test Method 301	EA	172.98	
4314	Bearing Ratio, Static, Astm C188 3	EA	172.98	
4315	Bearing Ratio, Astm D1883 Or Cor ps Of Engineers	EA	463.33	
4316	Cement Treated Base Laboratory D esign, Soil Cement	SET	494.21	
4317	Mixture Content	EA	18.53	
4318	U. B. C. Or Swell Test	EA	92.67	
4319	Proctor Compaction 4" Std Mld	EA	123.55	
4321	Proctor Compaction 6" Std Mld	EA	154.45	
4322	Density & Classification Test	EA	49.43	
01660 4400	Testing For Signage			
4401	Burn Rate Test & Certification F or Fiberglass Sign	EA	24.71	
01660 4500	Granite Density Test			
4501	Granite Density Test	EA	30.89	
01660 4600	General Materal Testing			
4601	General Material Testing	EA	18.53	
01660 4700	Tank Tightness Testing			
4701	Tank Volumetric Tightness Testin g <= 12,000 Gallons	EA	684.80	
4702	Tank Volumetric Tightness Testin g 12,001 - 29,999 Gallons	EA	836.71	
4703	Tank Volumetric Tightness Testin g >= 30,000 Gallons	EA	1,063.20	
4705	Hydrostatic Pressure Testing of Air Receiving Tanks Up To 20 Gal	GAL	5.70	
4706	Hydrostatic Pressure Testing of Air Receiving Tanks, 21 To 120Gal	GAL	5.49	

01700 Contract Closeout

01710 Final Cleaning

01714 0009 Clean up

Note: Installed Flooring Includes Being Cleaned, Sealed, And Polished. Cleanup Items To Be Used For Pre-existing Debris At A Work Site Or Pre-existing Clean-up Requirements (Prior to The Task Order)

0090	Existing Debris Removal & Disposal	CSF	3.72	
0100	Cleanup, floor area, final	CSF	5.21	
0120	Cleanup, clean & polish floors	CSF	2.30	

01800 General Maintenance

01808 Door & Window

JOC Note: To Be Used For Pre-existing Conditions or Pre-existing Clean-up Requirements (Prior To The Delivery Order). Items to be Used Only When Directed By The Scope Of Work.

01808 0010 Door & Window Facilities Mintenance

2120	Washing windows, by window area, average productivity	CSF	9.03	
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01900 Professional Services

01905 Surveying

01905 1100 Conventional Topographic Survey

Note: 1. Buildin Note: 1. Building Footprints Are Not To Be Considered As Part Of The Acerage. 2. This Survey Includes Locations Of Structures, Walks, Drives, Parking, Significant Vegetation, Utilities, Boundry Lines, Etc. 3. Drafting And Certification Is Included In

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
Cost.				
1101	Survey Clear Area With Few To No Obstacles	ACR	72.25	
1102	Survey Clear Area W Medium Hgt Vegetation, Few Trees (<5% Bldg)	ACR	172.92	
1103	Survey Clear Area W/Few Structures, &/Or Wooded (5-25% Bldgs)	ACR	245.14	
1104	Survey Developed Areas W/Several Structures (25-65% Bldgs)	ACR	385.43	
1105	Survey Highly Developed Areas, Sidewalks, Etc. (>65% Bldgs)	ACR	495.02	
01905 1200 Survey Of Property Lines				
1201	Survey Property Lines On Cleared Land	LF	0.37	
1202	Survey Property Lines On Slightly Wooded Land	LF	0.43	
1203	Survey Property Lines On Wooded Land	LF	0.50	
1204	Surveyor Stakes 2x2, 24 Inch Length (With Labor For	EA	1.43	
01905 1300 Aerial Survey & Photography				
Note: Cost Per Single Location, 15 to 20 Shoots, Up to 6 Proofs Developed, Pictures 8"x10" Or 8-1/2"x11", By Helicopter, Blimp Or Plane.				
1301	Aerial Photography, 1 Site Within City, 15-20 Shoots, 6 Proofs	EA	432.43	
01910 Architectural/Engineering Services				
Note: For Surveying: All rates include, equipment, crew, mobilization/de-mobilization, all cost for travel, subsistence and per diem reports (6 sets), design analyses (6 sets), drawings (6 sets), computer media (2 sets), digital photographs, management oversight, quality assurance, CADD/drafting support, clerical support, office, equipment, supplies, postage and handling; All design deliverables shall conform to the requirements of the U. S. Corps of Engineers, Ft. Worth District AEIM).				
01910 0010 Architectural/Engineering Services				
Note: All rates include all costs for travel, subsistence and per diem For site visits, labor shall be used for time conducting business at site only; to be used in conjunction with each discipline required at site;				
01910 1000 A/E Personnel				
1001	Architect	HR	62.50	
1002	Civil Engineer	HR	62.50	
1003	Mechanical Engineer	HR	62.50	
1004	Electrical Engineer	HR	62.50	
1005	Geotechnical Engineer	HR	62.50	
1006	Structural Engineer	HR	62.50	
1007	Traffic Engineer	HR	62.50	
1008	Landscape Architect	HR	62.50	
01910 2000 Msc Engineering Personnel				
2001	Surveyor	HR	62.50	
2002	Draftsmen	HR	30.83	
2003	Estimator/Scheduler	HR	40.00	
2004	Clerical	HR	30.83	
2005	Survey Crew (3 Person)	HR	91.67	
2006	Resident Project Representative	HR	45.83	
01915 Misc Services				
01915 1000 Soil Boring With Logs				
Note: Rate based on linear feet of hole to be drilled; includes, drilling rig, crew, mobilization/de-mobilization, including all cost for travel, subsistence and per diem reports (6 sets), design analyses (6 sets), drawings (6 sets), computer media (2 sets), digital photographs, management oversight, quality assurance, CADD/drafting support, clerical support, office, equipment, supplies, postage and handling; All design deliverables shall conform to the requirements of the U. S. Corps of Engineers, Ft. Worth District AEIM				
1001	Soil Borings With Logs	CLF	1,000.00	
01915 1100 Additional Copies of Drawings				
1102	Additional Copies of Drawings (i.e. A size, B size, C size)	SHT	0.35	
1103	Additional Copies of Drawings (i.e. D size, E size, F size)	SHT	0.85	
1104	Additional Copies of 8.5" x 11" Reproducible Bond Documents	SHT	0.03	
1105	Additional Copies of 8.5" x 14" Reproducible Bond Documents	SHT	0.05	
1106	Additional Copies of 11" x 17" Reproducible Bond Documents	SHT	0.08	
1107	Vellum Drawings (i.e. A size, B size, C size)	SHT	0.55	
1108	Vellum Drawings (i.e. D size, E size, F size)	SHT	1.30	
1109	Mylar Drawings (i.e. A size, B size, C size)	SHT	0.70	
1110	Mylar Drawings (i.e. D size, E size, F size)	SHT	1.70	
01920 Work Plans				
Note: All rates include all cost for travel, subsistence and per diem reports (6 sets), design analyses (6 sets), drawings (6 sets), computer media (2 sets), digital photographs, management oversight, quality assurance, CADD/drafting support, clerical support, office, equipment, supplies, postage and handling; All design deliverables shall conform to the requirements of the U. S. Corps of Engineers, Ft. Worth District AEIM Rates do not include Soils Boring Logs (See 01915-1000) or Surveying (See 01905-1000); Each Stage stands alone as a complete deliverable from 0% Design, however, adjustments to prices shall be made accordingly if previous stage(s)/task(s) have already been performed by deducting the				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
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applicable line item(s), at no additional cost to the government (i.e. these adjustments are not regarded as "Crashed Schedules" as described above); Quantity to apply to items with units of measure designated "CSF" shall be based on building foot print for work on new building, or floor space measuring from center lines of walls for work on interior spaces (i.e. area being supported by work in each discipline); If the COR requires a Crashed Delivery Schedule (Shortened Schedule Durations), the percent of total stage duration shortened, divided by 2, shall be applied to stage/task quantity(s) affected as a fair and equitable adjustment to the Contractor; Work Plans at any stage may be regarded as execution documents and used as a basis to negotiate and awarded for construction, if deemed by the Contracting Officer, that it is sufficient for use to negotiate and construct; Unless otherwise specified in each task order, to the extent required by the AEIM for that stage or provided in the contractor's coefficient, the execution documents shall include, but not be limited to, the following basic components, AT NO ADDITIONAL COST TO THE GOVERNMENT, each separately endorsed by the Facility Manager's signature: a. Site Visit Memorandum b. Project Phasing Data Sheets c. Photographs of Existing Conditions d. Engineering Analysis and Calculations (per AEIM at applicable stage) e. Detailed written Scope of Work f. Drawings (per AEIM at applicable stage) g. Detailed Cost Proposal (Using MEDJOC UPB) h. Specifications (from contract for pre-priced items, from other sources for non-pre-priced items, and for pre-priced items where specifications are not included in the contract) i. Catalog Cuts j. Detailed Construction Schedule (submittals, NTP, long lead items, phases, trades, etc.) k. Phasing Plan l. ENG FORM 4288 (RMS) Submittal Register j. DA Form 1354 (RMS) Transfer and Acceptance of Military Real Property

01920 1000 STAGE 1 - Schematic Design Submittal (5% Starting from 0% Design) (Army)

01920 1100 General

Note: These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements. Line item 1104 Narrative (For Planning: Materials of construction per AEIM; For Execution: Detailed Written Scope). Line Item 1105 Cost Estimate (For Planning: Budgetary Type -- Aggregate by Project Type; For Execution: Detailed using MEDJOC UPB)

1101	Cover Sheet & Index Of Documents	NTE		
1102	Small Scale Site Plan	NTE		
1103	Sketch Elevations	NTE		
1104	Narrative	NTE		
1105	Cost Estimate	NTE		
1106	Site/Visit & Conference Notes	NTE		

01920 1199 Discipline

Note: Line item 1700 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)

1200	Civil	CSF	4.50	
1300	Architectural	CSF	4.50	
1400	Structural	CSF	4.50	
1500	Mechanical	CSF	4.50	
1600	Electrical	CSF	4.50	
1700	Site Visit	DAY	500.00	

01920 2000 STAGE 2 - Pre-Concept Control Data Submittal (10% Starting from 0% Design) (Army)

01920 2100 General

Note: These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements. Line Item 2105 Narrative (For Planning: Brochure per AEIM; For Execution: Detailed Written Scope). Line Item 2106 Cost Estimate (For Planning: Budgetary Type -- Aggregate by Discipline; For Execution: Detailed using MEDJOC UPB)

2101	Cover Sheet & Index Of Documents	NTE		
2102	Single Line Floor Plans Upto 3	NTE		
2103	Site Plan	NTE		
2104	Sketch Elevations	NTE		
2105	Narrative	NTE		
2106	Cost Estimate	NTE		
2107	Site/Visit & Conference Notes	NTE		

01920 2199 Discipline

Note: Line Item 2700 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)

2200	Civil	CSF	9.00	
2300	Architectural	CSF	9.00	
2400	Structural	CSF	9.00	
2500	Mechanical	CSF	9.00	
2600	Electrical	CSF	9.00	
2700	Site Visit	DAY	500.00	

01920 3000 STAGE 3 - Project Engineering Brochure Submittal (15% Starting from 0% Design) (Army)

01920 3100 General

Note: These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements. Line Item 3102 Narrative (For Planning: Brochure per AEIM; For Execution: Detailed Written

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
Scope). Line Item 3104 Cost Estimate (For Planning: Budgetary Type -- Aggregate by Discipline & Major Feature; For Execution: Detailed using MEDJOC UPB).				
3101	Cover Sheet & Index Of Documents	NTE		
3102	Narrative	NTE		
3103	Single Line Sketches/Drawings /Elevations/Details/Catalog Cuts	NTE		
3104	Cost Estimate	NTE		
3105	Site/Visit & Conference Notes	NTE		
01920 3199 Discipline				
Note: Line Item 3700 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
3200	Civil	CSF	13.50	
3300	Architectural	CSF	13.50	
3400	Structural	CSF	13.50	
3500	Mechanical	CSF	13.50	
3600	Electrical	CSF	13.50	
3700	Site Visit	DAY	500.00	
01920 4000 STAGE 4 - Concept Design Submittal (35% Design Starting from 0% Design) (Army)				
01920 4100 General				
Note: (These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements) Line Item 4103 Narrative (For Planning: Brochure per AEIM; For Execution: Detailed Written Scope). Line Item 4105 Cost Estimate (For Design: Tri-Service Breakdown Structure for Assembly Category Level per AEIM; For Execution: Detailed using MEDJOC UPB).				
4101	Cover Sheet & Index Of Documents	NTE		
4102	Location and Vicinity Map (Including haul routes)	NTE		
4103	Narrative	NTE		
4104	Design Analysis	NTE		
4105	Cost Estimate	NTE		
4106	Site/Visit & Conference Notes	NTE		
01920 4199 Discipline				
01920 4200 Civil				
Note: Line Item 4205 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
4201	Site Demolition	CSF	4.73	
4202	Site Plan/Details	CSF	7.88	
4203	Grading Plan	CSF	9.45	
4204	Utility Plan/Profiles/Details	CSF	9.45	
4205	Site Visit	DAY	500.00	
01920 4300 Architectural				
Note: Line Item 4311 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
4301	Demolition Plan	CSF	3.15	
4302	Floor Plan(s)	CSF	9.45	
4303	Building Elevation	CSF	4.73	
4304	Building Selections	CSF	7.88	
4305	Typical Wall Sections	CSF	3.15	
4306	Room Finish Schedule	CSF	1.58	
4307	Fire Protection Plan	CSF	1.58	
4310	Furniture Plan	CSF	6.30	
4311	Site Visit	DAY	500.00	
01920 4400 Structural				
Note: Line Item 4405 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
4401	Preliminary Foundation Plan	CSF	11.03	
4403	Framing Plans	CSF	11.03	
4404	Preliminary Foundation & Roof Sections/Details	CSF	9.45	
4405	Site Visit	DAY	500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
01920 4500 Mechanical				
Note: Line Item 4506 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
4501	Demolition Plan	CSF	4.73	
4502	Plumbing Fixture/Drain Location Plan	CSF	4.73	
4503	HVAC Equipment Location/Duct Work Layout Plan/Schedules	CSF	17.33	
4505	Fire Protection Systems Plan	CSF	4.73	
4506	Site Visit	DAY	500.00	
01920 4600 Electrical				
Note: Line Item 4606 Communication Plan (i.e. telephone, local area network, television, etc. each). Line Item 4611 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
4601	Demolition Plan	CSF	4.73	
4602	Site Plan	CSF	1.58	
4603	Lighting Plan	CSF	7.88	
4604	Power Plan	CSF	7.88	
4606	Communication Plan (Telephone, LAN, TV, ETC, each)	CSF	1.58	
4607	Intrusion Detection Plan	CSF	1.58	
4608	Cathodic Protection Plan	CSF	0.95	
4609	Lightning Protection Plan	CSF	0.95	
4610	TEMPEST Plan	CSF	1.26	
4611	Site Visit	DAY	500.00	
01920 5000 STAGE 5 - Preliminary Design Submittal (65% Design Starting from 0% Design)				
01920 5100 General				
Note: These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements				
5101	Cover Sheet & Index Of Drawings	NTE		
5102	Location and Vicinity Map (Including haul routes)	NTE		
5103	Narrative	NTE		
5104	Design Analysis	NTE		
5105	Cost Estimate (Detailed Using MEDJOC UPB)	NTE		
5106	Site/Visit & Conference Notes	NTE		
01920 5199 Discipline				
01920 5200 Civil				
Note: Line Item 5206 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
5201	Site Demolition	CSF	8.78	
5202	Site Plan/Details	CSF	14.63	
5203	Grading Plan	CSF	14.63	
5204	Utility Plan/Profiles/Details	CSF	14.63	
5205	Pavement Plan Details	CSF	5.85	
5206	Site Visit	DAY	500.00	
01920 5300 Architectural				
Note: Line Item 5311 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
5301	Demolition Plan	CSF	5.85	
5302	Floor Plan(s)	CSF	17.55	
5303	Building Elevations	CSF	5.85	
5304	Interior And Exterior Wall Sections	CSF	14.63	
5305	Reflected Ceiling Plan	CSF	2.93	
5306	Room Finish And Color Schedules	CSF	2.93	
5307	Door & Window Schedules	CSF	2.93	
5308	Perspective Drawing	CSF	2.93	
5309	Life Safety Plan	CSF	2.93	
5310	Furniture Plan	CSF	11.70	
5311	Site Visit	DAY	500.00	
01920 5400 Structural				
Note: Line Item 5406 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5401	Foundation Plan(s) And Partial Details	CSF	14.63	
5402	Footing, Grade Beam or Rib Schedule(s)	CSF	5.85	
5403	Roof Framing Plans and Partial Details	CSF	14.63	
5404	Intermediate Framing Plan(s)	CSF	11.70	
5405	Sections And Partial Details	CSF	11.70	
5406	Site Visit	DAY	500.00	
01920 5500 Mechanical				
Note: Line Item 5508 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
5501	Demolition Plan	CSF	8.78	
5502	Equipment Schedules/Locations	CSF	8.78	
5503	Plumbing Plan Risers and Details	CSF	11.70	
5504	Mechanical Room Plan with Equipment Clearances	CSF	2.93	
5505	Fire Protection Systems Plan	CSF	8.78	
5506	HVAC Plan and Mjor Details	CSF	11.70	
5507	Sequence of Control and Control Schematics	CSF	5.85	
5508	Site Visit	DAY	500.00	
01920 5600 Electrical				
Note: Line Item 5611 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
5601	Demolition Plan	CSF	5.85	
5602	Site Plan	CSF	2.93	
5603	Lighting Plan And Fixture Schedules	CSF	11.70	
5604	Power Plan And Equipment Layout	CSF	11.70	
5605	Outline Riser Diagrams (power, communications, fire alarm, etc)	CSF	2.93	
5606	Communication Plan (Telephone, LAN, TV, ETC, each)	CSF	2.93	
5607	Intrusion Detection Plan	CSF	2.93	
5608	Cathodic Protection Plan	CSF	1.76	
5609	Lightning Protection Plan	CSF	1.76	
5610	TEMPEST Plan	CSF	2.34	
5611	Site Visit	DAY	500.00	
01920 6000 STAGE 6 - Final Design Submittal (100% Design Starting from 0% Design)				
01920 6100 General				
Note: These items are included in the rates and shall be provided at no additional cost to the government -- See Contract, AEIM and UPB Note at 01920 Work Plans for Complete Requirements.				
6101	Cover Sheet & Index Of Drawings	NTE		
6102	Location and Vicinity Map (Including haul routes)	NTE		
6103	Narrative (Detailed Written Scope)	NTE		
6104	Design Analysis	NTE		
6105	Cost Estimate (Detailed Using MEDJOC UPB)	NTE		
6106	Site Visit & Conference Notes	NTE		
01920 6199 Discipline				
01920 6200 Civil				
Note: Line Item 6206 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
6201	Site Demolition Plan	CSF	13.50	
6202	Site Plan/Details	CSF	22.50	
6203	Grading Plan	CSF	22.50	
6204	Utility Plan/Profiles/Details	CSF	22.50	
6205	Pavement Plan Details	CSF	9.00	
6206	Site Visit	DAY	500.00	
01920 6300 Architectural				
Note: Line Item 6311 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
6301	Demolition Plan(s)	CSF	9.00	
6302	Floor Plan(s)	CSF	27.00	
6303	Building Elevations	CSF	9.00	
6304	Interior And Exterior Wall Sections	CSF	22.50	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6305	Reflected Ceiling Plan	CSF	4.50	
6306	Room Finish And Color Schedules	CSF	4.50	
6307	Door & Window Schedules	CSF	4.50	
6308	Perspective Drawing	CSF	4.50	
6309	Life Safety Plan	CSF	4.50	
6310	Furniture Plan	CSF	18.00	
6311	Site Visit	DAY	500.00	
01920 6400 Structural				
Note: Line Item 6406 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
6401	Foundation Plan(s) And Partial Details	CSF	22.50	
6402	Footing, Grade Beam or Rib Schedule(s)	CSF	9.00	
6403	Roof Framing Plans and Partial Details	CSF	22.50	
6404	Intermediate Framing Plan(s)	CSF	18.00	
6405	Sections And Partial Details (Superstructure & Walls)	CSF	18.00	
6406	Site Visit	DAY	500.00	
01920 6500 Mechanical				
Note: Line Item 6508 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
6501	Demolition Plan	CSF	13.50	
6502	Equipment Schedules/Locations	CSF	13.50	
6503	Plumbing Plan Risers and Details	CSF	18.00	
6504	Mechanical Room Plan with Equipment Clearances	CSF	4.50	
6505	Fire Protection Systems Plan	CSF	13.50	
6506	HVAC Plan and Major Details	CSF	18.00	
6507	Sequence of Control and Control Schematics	CSF	9.00	
6508	Site Visit	DAY	500.00	
01920 6600 Electrical				
Note: Line Item 6611 Site Visit (Labor for time conducting business at site only; to be used in conjunction with each discipline required at site; not to be used for time spent during travel, lodging or meals, unless the government orders the contractor to use personnel outside of a 100 mile radius of the site)				
6601	Demolition Plan	CSF	9.00	
6602	Site Plan	CSF	4.50	
6603	Lighting Plan And Fixture Schedules	CSF	18.00	
6604	Power Plan And Equipment Layout	CSF	18.00	
6605	Outline Riser Diagrams (power, communications, fire alarm, etc)	CSF	4.50	
6606	Communication Plan (Telephone, LAN, TV, ETC, each)	CSF	4.50	
6607	Intrusion Detection Plan	CSF	4.50	
6608	Cathodic Protection Plan	CSF	2.70	
6609	Lightning Protection Plan	CSF	2.70	
6610	TEMPEST Plan	CSF	3.60	
6611	Site Visit	DAY	500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02001 Subsurface Investigation & Demolition & HTRW				
02009 Standard Penetration Tests				
02011 0015 Core Drilling, Conc Slab, w/Bit, Layout, Setup Core Disposal, Cleanup.				
Note: Unreinforced Concrete Standard				
02011 3999 4" Slab				
4000	Drilling, core, 4" thk concrete slab, 3" dia core	EA	25.82	
4001	For Reinforced Concrete ADD		4.47	
4002	For Horizontal Drilling ADD		6.70	
4010	Drilling, core, 4" thk concrete slab, 4" dia core	EA	29.85	
4001	For Reinforced Concrete ADD		5.05	
4002	For Horizontal Drilling ADD		7.57	
4020	Drilling, core, 4" thk concrete slab, 6" dia core	EA	33.64	
4001	For Reinforced Concrete ADD		5.59	
4002	For Horizontal Drilling ADD		8.38	
4031	Drilling, core, 4" thk concrete slab, 8" dia core	EA	46.85	
4001	For Reinforced Concrete ADD		7.82	
4002	For Horizontal Drilling ADD		11.73	
4034	Drilling, core, 4" thk concrete slab, 1" dia core	EA	11.85	
4001	For Reinforced Concrete ADD		2.37	
4002	For Horizontal Drilling ADD		3.56	
4036	Drilling, core, 4" thk concrete slab, 1.5" dia core	EA	17.38	
4001	For Reinforced Concrete ADD		3.48	
4002	For Horizontal Drilling ADD		5.21	
4038	Drilling, core, 4" thk concrete slab, 2" dia core	EA	17.38	
4001	For Reinforced Concrete ADD		3.48	
4002	For Horizontal Drilling ADD		5.21	
02011 4099 6" Slab				
4100	Drilling, core, 6" thk concrete slab, 3" dia core	EA	32.16	
4001	For Reinforced Concrete ADD		5.39	
4002	For Horizontal Drilling ADD		8.09	
4110	Drilling, core, 6" thk concrete slab, 4" dia core	EA	40.64	
4001	For Reinforced Concrete ADD		6.74	
4002	For Horizontal Drilling ADD		10.11	
4120	Drilling, core, 6" thk concrete slab, 6" dia core	EA	53.48	
4001	For Reinforced Concrete ADD		8.99	
4002	For Horizontal Drilling ADD		13.49	
4130	Drilling, core, 6" thk concrete slab, 8" dia core	EA	67.52	
4001	For Reinforced Concrete ADD		11.17	
4002	For Horizontal Drilling ADD		16.76	
4132	Drilling, core, 6" thk concrete slab, 1" dia core	EA	15.64	
4001	For Reinforced Concrete ADD		3.13	
4002	For Horizontal Drilling ADD		4.69	
4134	Drilling, core, 6" thk concrete slab, 1.5" dia core	EA	24.44	
4001	For Reinforced Concrete ADD		4.89	
4002	For Horizontal Drilling ADD		7.33	
4136	Drilling, core, 6" thk concrete slab, 2" dia core	EA	21.72	
4001	For Reinforced Concrete ADD		4.34	
4002	For Horizontal Drilling ADD		6.52	
02011 4199 8" Slab				
4200	Drilling, core, 8" thk concrete slab, 3" dia core	EA	34.89	
4001	For Reinforced Concrete ADD		5.59	
4002	For Horizontal Drilling ADD		8.38	
4210	Drilling, core, 8" thk concrete slab, 4" dia core	EA	46.46	
4001	For Reinforced Concrete ADD		7.45	
4002	For Horizontal Drilling ADD		11.17	
4220	Drilling, core, 8" thk concrete slab, 6" dia core	EA	54.83	
4001	For Reinforced Concrete ADD		8.69	
4002	For Horizontal Drilling ADD		13.04	
4230	Drilling, core, 8" thk concrete slab, 8" dia core	EA	72.42	
4001	For Reinforced Concrete ADD		11.17	
4002	For Horizontal Drilling ADD		16.76	
4232	Drilling, core, 8" thk concrete slab, 1" dia core	EA	21.13	
4001	For Reinforced Concrete ADD		4.23	
4002	For Horizontal Drilling ADD		6.34	
4234	Drilling, core, 8" thk concrete slab, 1.5" dia core	EA	26.97	
4001	For Reinforced Concrete ADD		5.39	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4002	For Horizontal Drilling ADD		8.09	
4236	Drilling, core, 8" thk concrete slab, 2" dia core	EA	27.93	
4001	For Reinforced Concrete ADD		5.59	
4002	For Horizontal Drilling ADD		8.38	
02011 4299	10" Slab			
4300	Drilling, core, 10" thk concrete slab, 3" dia core	EA	39.99	
4001	For Reinforced Concrete ADD		6.26	
4002	For Horizontal Drilling ADD		9.39	
4310	Drilling, core, 10" thk concrete slab, 4" dia core	EA	50.62	
4001	For Reinforced Concrete ADD		7.82	
4002	For Horizontal Drilling ADD		11.73	
4320	Drilling, core, 10" thk concrete slab, 6" dia core	EA	60.24	
4001	For Reinforced Concrete ADD		9.20	
4002	For Horizontal Drilling ADD		13.80	
4330	Drilling, core, 10" thk concrete slab, 8" dia core	EA	80.09	
4001	For Reinforced Concrete ADD		12.03	
4002	For Horizontal Drilling ADD		18.05	
4332	Drilling, core, 10" thk concrete slab, 1" dia core	EA	24.83	
4001	For Reinforced Concrete ADD		4.97	
4002	For Horizontal Drilling ADD		7.45	
4334	Drilling, core, 10" thk concrete slab, 1.5" dia core	EA	27.93	
4001	For Reinforced Concrete ADD		5.59	
4002	For Horizontal Drilling ADD		8.38	
4336	Drilling, core, 10" thk concrete slab, 2" dia core	EA	31.29	
4001	For Reinforced Concrete ADD		6.26	
4002	For Horizontal Drilling ADD		9.39	
02011 4399	12" Slab			
4400	Drilling, core, 12" thk concrete slab, 3" dia core	EA	43.02	
4001	For Reinforced Concrete ADD		6.52	
4002	For Horizontal Drilling ADD		9.77	
4410	Drilling, core, 12" thk concrete slab, 4" dia core	EA	57.29	
4001	For Reinforced Concrete ADD		8.69	
4002	For Horizontal Drilling ADD		13.04	
4420	Drilling, core, 12" thk concrete slab, 6" dia core	EA	69.22	
4001	For Reinforced Concrete ADD		10.43	
4002	For Horizontal Drilling ADD		15.64	
4430	Drilling, core, 12" thk concrete slab, 8" dia core	EA	101.53	
4001	For Reinforced Concrete ADD		15.64	
4002	For Horizontal Drilling ADD		23.46	
4432	Drilling, core, 12" thk concrete slab, 1" dia core	EA	28.96	
4001	For Reinforced Concrete ADD		5.79	
4002	For Horizontal Drilling ADD		8.69	
4434	Drilling, core, 12" thk concrete slab, 1.5" dia core	EA	31.29	
4001	For Reinforced Concrete ADD		6.26	
4002	For Horizontal Drilling ADD		9.39	
4436	Drilling, core, 12" thk concrete slab, 2" dia core	EA	33.28	
4001	For Reinforced Concrete ADD		6.66	
4002	For Horizontal Drilling ADD		9.98	
02011 7060	Asphalt 2" Thick and 3" Thick			
7061	Drill 3" Dia Core in 2" Asphalt	EA	14.44	
7062	Drill 4" Dia Core in 2" Asphalt	EA	19.42	
7063	Drill 6" Dia Core in 2" Asphalt	EA	21.66	
7064	Drill 8" Dia Core in 2" Asphalt	EA	35.20	
7065	Drill 3" Dia Core in 3" Asphalt	EA	23.47	
7066	Drill 4" Dia Core in 3" Asphalt	EA	31.29	
7067	Drill 6" Dia Core in 3" Asphalt	EA	35.20	
7068	Drill 8" Dia Core in 3" Asphalt	EA	56.32	
02011 7070	Asphalt 4" Thick and 6" Thick			
7071	Drill 3" Dia Core in 4" Asphalt	EA	24.49	
7072	Drill 4" Dia Core in 4" Asphalt	EA	28.17	
7073	Drill 6" Dia Core in 4" Asphalt	EA	37.55	
7074	Drill 8" Dia Core in 4" Asphalt	EA	70.41	
7076	Drill 4" Dia Core in 6" Asphalt	EA	43.33	
7077	Drill 6" Dia Core in 6" Asphalt	EA	57.77	
7078	Drill 8" Dia Core in 6" Asphalt	EA	86.65	
02011 7080	Manholes			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7081	Drill 4" Dia Core in 6" Brick Manhole	EA	56.32	
7082	Drill 4" Dia Core in 8" Cone Manhole	EA	64.37	
7083	Drill 5" Dia Core in 6" Brick Manhole	EA	64.37	
7084	Drill 5" Dia Core in 8" Cone Manhole	EA	75.10	
7085	Drill 6" Dia Core in 6" Brick Manhole	EA	75.10	
7086	Drill 6" Dia Core in 8" Cone Manhole	EA	90.12	
7087	Drill 8" Dia Core in 6" Brick Manhole	EA	112.65	
7088	Drill 8" Dia Core in 8" Cone Manhole	EA	150.19	
7089	Drill 2" Dia Core in 8" Cone Manhole	EA	65.71	
02011 7090 Block Walls				
7091	Drill 6" Dia Core in 8" Block Wall	EA	75.10	
7092	Drill 6" Dia Core in 12" Block Wall	EA	75.10	
02012 0009 Test pits				
02012 0010 Hand Digging				
0010	Test pits, hand digging, light soil	CY	50.17	
0100	Test pits, hand digging, heavy soil	CY	90.30	
02012 0119 Loader-Backhoe				
0120	Test pits, loader-backhoe, light soil	CY	23.42	
0125	Test pits, loader-backhoe, medium soil	CY	28.50	
0130	Test pits, loader-backhoe, heavy soil	CY	32.77	
02044 Existing Debris Removal				
02044 1000 Existing Debris Removal & Disposal				
1001	Existing Debris Removal & Dispos al	CSF	7.00	
02045 Site Demolition				
JOC NOTE: No Hauling				
02046 0009 Site Demolition, No Hauling				
02046 1709 Pavement Removal				
1710	Site dml, bituminous, pavement removal, roads, 3" thick	SY	2.79	
1775	Pavement removal, sidewalk conc & bituminous, plain, 4" thk	SY	1.07	
02046 1779 Pulverize Bituminous Driveways & Pavement				
1800	Site dml, bituminous driveways	SY	3.01	
02046 1899 Concrete To 6" Thick				
1900	Site dml, conc to 6" thick, mesh reinforced	SY	7.55	
2000	Site dml, conc to 6" thick, rod reinforced	SY	9.63	
02046 2099 Concrete 7" To 24" Thick				
2100	Site dml, conc, 7" to 24" thick, plain	CY	58.37	
2115	Site dml, conc, 7" to 24" thick, reinf, w/backhoe	CY	97.90	
02046 3499 Railroad Track Removal				
3500	Site Dml, ties & track, RR renval	LF	7.01	
3600	Site Dml, ties & track, Ballast, RR removal	CY	3.02	
3700	Site Dml, w/new fastners, removal & re-install, RR removal	CY	30.15	
02048 Building Demolition				
Note: Demolition Costs In This Unit Price Book Include Cost For Removal, Handling Of Debris And Placement Into Truck or Approved Trash Containers. Demolition Includes All Attached Appurtenances, i.e. Demolishing A Door Includes The Hardware, etc.				
02049 6000 Building Demolition				
02049 6300 Rubbish Handling (Mtl Vol) Applicable Only For Selective Demolition Items.				
6303	Rubbish Hdlg, Load, Over 100' Haul, Chute Dump. Add Per 100'	CY	20.50	
02049 6600 Wood Frame Building Demolition/Removal				
Note: Includes The Demolition And Removal Of Building Foundation And Stack. It Does Not Include The Removal Of Structural Steel Members Or Asbestos Roofing.				
6601	Building Up To 3000 Sf	SF	6.11	
1000	For Multi Story Building Add		0.67	
6602	Building 3000 Sf And Over	SF	3.67	
1000	For Multi Story Building Add		0.40	
02049 7999 Single Level Building				
8000	Building dml, single level bldg, steel	CY	0.11	
8010	Building dml, single level bldg, conc	CY	0.14	
8020	Building dml, single level bldg, masonry	CY	0.11	
8030	Building dml, single level bldg, wood	CY	0.11	
02049 8109 Multi-Level Building				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8110	Building dml, multi-level bldg, steel	CY	0.10	
8120	Building dml, multi-level bldg, conc	CY	0.15	
8130	Building dml, multi-level bldg, masonry or wood	CY	0.11	
02053 0010	Rubbish Handling			
	Note: Add to Demolition Prices Where Appropriate.			
02053 1199	Handling in Elevator			
02053 1999	Load, Haul to Chute & Dumping Into Chute			
2000	Rubbish handling, haul to chute & dumping into chute, 50' haul,	CF	0.70	
2040	Rubbish handling, haul to chute & dumping into chute, 100' haul,	CF	1.01	
02053 2999	Loading & Trucking, Including 2 Mle Haul			
02053 2999	Chute Loaded			
3000	Rubbish handling, chute loaded, loading & trucking, incl 2 mile	CY	23.08	
3141	For Each Additional 1 Mle, ADD		1.90	
3142	For Each Additional 5 Mles, ADD		9.52	
3143	For Each Additional 10 Mles, ADD		19.04	
3144	For Each Additional 15 Mles, ADD		28.45	
3145	For Each Additional 20 Mles, ADD		35.77	
02053 3039	Hand Loading Truck			
3040	Rubbish handling, 50' haul, loading & trucking, hand loading	CY	26.93	
3141	For Each Additional 1 Mle, ADD		2.22	
3142	For Each Additional 5 Mles, ADD		11.11	
3143	For Each Additional 10 Mles, ADD		22.22	
3144	For Each Additional 15 Mles, ADD		33.19	
3145	For Each Additional 20 Mles, ADD		41.74	
02053 3079	Machine Loading Truck			
3080	Rubbish handling, 2 mile haul, loading & trucking, machine	CY	11.96	
3141	For Each Additional 1 Mle, ADD		0.99	
3142	For Each Additional 5 Mles, ADD		4.93	
3143	For Each Additional 10 Mles, ADD		9.87	
3144	For Each Additional 15 Mles, ADD		14.74	
3145	For Each Additional 20 Mles, ADD		18.54	
02053 3089	Ramp Loading Truck			
3090	Rubbish handling, ramp loaded, loading & trucking, incl 2 mile	CY	32.31	
3141	For Each Additional 1 Mle, ADD		2.67	
3142	For Each Additional 5 Mles, ADD		13.33	
3143	For Each Additional 10 Mles, ADD		26.66	
3144	For Each Additional 15 Mles, ADD		39.82	
3145	For Each Additional 20 Mles, ADD		50.08	
02054	Selective Demolition			
	Miscellaneous Removals Note: All Items Listed Below Are Priced To Include Machine Break-Up And Loading. Demolition Items In This Section Are Assembly Type Of Removal.			
02055 0010	Ceiling Demolition			
	Note: For Open Area Ceiling Work. Areas Greater Than 100Sf.			
02055 0199	Drywall			
0200	Ceiling dml, drywall, furred and nailed	SF	0.56	
0210	Ceiling dml, drywall, nailed on wood frame	SF	0.45	
02055 0999	Plaster			
1000	Ceiling dml, plaster, incl lath, lime & horse hair, on wood lath	SF	0.65	
1020	Ceiling dml, plaster, incl lath, lime & horse hair, on metal lath	SF	0.79	
02055 1499	Tile, Wood Fiber			
1500	Ceiling dml, tile, wood fiber, 12" x 12", glued	SF	0.50	
1562	Ceiling dml, tile, wood fiber, 12" x 12", adhesive fastened	SF	0.30	
1564	Ceiling dml, tile, wood fiber, 12" x 12", furred & glued	SF	0.30	
02061 0010	Cutting, Building Interior			
02061 0500	Residential Building			
0570	Cutting, Building Interior, Incl Disposal, Residential Building	SF	3.40	
02061 0900	Commercial Building			
1010	Cutting, Building Interior, Incl Disposal, Commercial Bldg.	SF	4.31	
02069 0009	Saw Cutting			
02069 0009	Asphalt			
02069 0010	Saw Cutting			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0010	Saw cutting, asphalt, up to 3" deep	LF	1.36	
0020	Saw cutting, asphalt > 1000 LF, each addl inch of depth	LF	0.60	
02069 0399	Concrete Slabs			
0400	Saw cutting, conc slabs, per inch of depth, mesh reinforcing	LF	1.58	
0420	Saw cutting, conc slabs, rod reinforcing, per inch of depth	LF	2.54	
02069 0799	Concrete Walls			
0805	Saw cutting, conc walls, plain, per inch of depth	LF	4.06	
0825	Saw cutting, conc walls, rod reinforcing, per inch of depth	LF	5.25	
02069 1199	Masonry and Block Walls			
1210	Saw cutting, masonry walls, brick, per inch of depth	LF	4.08	
1225	Saw cutting, masonry block walls, solid, per inch of depth	LF	3.39	
02070 0009	Torch Cutting			
02070 0009	Steel			
0010	Torch cutting steel, 1" thick plate	LF	7.06	
02075	Well Construction			
02075	Wells			
02075 1510	Develop Well			
1511	Develop Well		250.87	
02075 1600	Pump Test			
1611	Pump Test Well		274.78	
02075 1700	Standby			
1711	Standby Well		267.38	
02075 3000	Test Pump Installation And Removal			
3111	Well Test Pump, Install & Remove		3,103.06	
02075 4000	Sterilization Of Well			
4111	Well Sterilization, Chlorine		680.71	
02080	Hazardous And Toxic Waste			
Note: For Asbestos and LBP abatement, Special Project Procedures Note 19 does not apply.				
02082	Landfill Gas and Leachate Control Systems			
02082 0010	Landfill Gas and Leachate Control Systems			
02082 1000	Active and Passive Trench			
1311	LGLCS, active & passive trench, 2 to 3 rows of slots, 2" dia,	LF	3.75	
1312	LGLCS, active & passive trench, 2 to 4 rows of slots, 4" dia,	LF	6.30	
1313	LGLCS, active & passive trench, 2 to 6 rows of slots, 6" dia,	LF	11.09	
1314	LGLCS, active & passive trench, 2 to 6 rows of slots, 6" dia,	LF	10.40	
1315	LGLCS, active & passive trench, 2 to 6 rows of slots, 8" dia,	LF	17.45	
1316	LGLCS, active & passive trench, 2 to 6 rows of slots, 8" dia,	LF	15.70	
1317	LGLCS, active & passive trench, 2 to 8 rows of slots, 10" dia,	LF	30.45	
1318	LGLCS, active & passive trench, 2 to 8 rows of slots, 10" dia,	LF	10.59	
1319	LGLCS, active & passive trench, 2 to 10 rows of slots, 12" dia,	LF	17.01	
1321	LGLCS, active & passive trench, 2 to 10 rows of slots, 12" dia,	LF	15.40	
02082 1400	Leachate and Gas Transfer Pipe			
1411	LGLCS, active & passive trench, 3" dia, SDR 13.5, transfer pipe,	LF	3.32	
1412	LGLCS, active & passive trench, 3" dia, SDR 21, transfer pipe,	LF	2.90	
1413	LGLCS, active & passive trench, 3" dia, SDR 26, transfer pipe,	LF	2.90	
1414	LGLCS, active & passive trench, 4" dia, SDR 13.5, transfer pipe,	LF	4.20	
1415	LGLCS, active & passive trench, 4" dia, SDR 21, transfer pipe,	LF	3.95	
1416	LGLCS, active & passive trench, 4" dia, SDR 26, transfer pipe,	LF	4.38	
1417	LGLCS, active & passive trench, 6" dia, SDR 13.5, transfer pipe,	LF	6.91	
1418	LGLCS, active & passive trench, 6" dia, SDR 21, transfer pipe,	LF	5.48	
1419	LGLCS, active & passive trench, 6" dia, SDR 26, transfer pipe,	LF	4.75	
1421	LGLCS, active & passive trench, 8" dia, SDR 13.5, transfer pipe,	LF	10.25	
1422	LGLCS, active & passive trench, 8" dia, SDR 21, transfer pipe,	LF	7.65	
1423	LGLCS, active & passive trench, 8" dia, SDR 26, transfer pipe,	LF	6.41	
1424	LGLCS, active & passive trench, 10" dia, SDR 13.5, transfer	LF	15.09	
1425	LGLCS, active & passive trench, 10" dia, SDR 21, transfer pipe,	LF	10.76	
1426	LGLCS, active & passive trench, 10" dia, SDR 26, transfer pipe,	LF	8.81	
1427	LGLCS, active & passive trench, 12" dia, SDR 13.5, transfer	LF	20.52	
1428	LGLCS, active & passive trench, 12" dia, SDR 21, transfer pipe,	LF	14.38	
1429	LGLCS, active & passive trench, 12" dia, SDR 26, transfer pipe,	LF	11.67	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1431	LGLCS, active & passive trench, 14" dia, SDR 13.5, transfer	LF	25.10	
1432	LGLCS, active & passive trench, 14" dia, SDR 21, transfer pipe,	LF	17.41	
1433	LGLCS, active & passive trench, 14" dia, SDR 26, transfer pipe,	LF	14.13	
1434	LGLCS, active & passive trench, 16" dia, SDR 13.5, transfer	LF	33.37	
1435	LGLCS, active & passive trench, 16" dia, SDR 21, transfer pipe,	LF	22.63	
1436	LGLCS, active & passive trench, 16" dia, SDR 26, transfer pipe,	LF	19.63	
1437	LGLCS, active & passive trench, 18" dia, SDR 13.5, transfer	LF	42.09	
1438	LGLCS, active & passive trench, 18" dia, SDR 21, transfer pipe,	LF	29.46	
1439	LGLCS, active & passive trench, 18" dia, SDR 26, transfer pipe,	LF	24.05	
1441	LGLCS, active & passive trench, 24" dia, SDR 13.5, transfer	LF	70.13	
1442	LGLCS, active & passive trench, 24" dia, SDR 21, transfer pipe,	LF	47.97	
1443	LGLCS, active & passive trench, 24" dia, SDR 26, transfer pipe,	LF	38.29	
1451	LGLCS,ativ & psiv trench,3" dia, SDR 13.5, xfr pipe, HDPE, 90 de	EA	44.51	
1452	LGLCS,ativ & psiv trench,3" dia, SDR 21, xfr pipe, HDPE, 90 deg	EA	44.51	
1453	LGLCS,ativ & psiv trench,3" dia, SDR 26, xfr pipe, HDPE, 90 deg	EA	44.51	
1454	LGLCS,ativ & psiv trench,4" dia, SDR 13.5, xfr pipe, HDPE, 90 de	EA	58.14	
1455	LGLCS,ativ & psiv trench,4" dia, SDR 21, xfr pipe, HDPE, 90 deg	EA	56.54	
1456	LGLCS,ativ & psiv trench,4" dia, SDR 26, xfr pipe, HDPE, 90 deg	EA	59.96	
1457	LGLCS,ativ & psiv trench,6" dia, SDR 13.5, xfr pipe, HDPE, 90 de	EA	100.53	
1458	LGLCS,ativ & psiv trench,6" dia, SDR 21, xfr pipe, HDPE, 90 deg	EA	105.64	
1459	LGLCS,ativ & psiv trench,6" dia, SDR 26, xfr pipe, HDPE, 90 deg	EA	107.03	
1461	LGLCS,ativ & psiv trench,8" dia, SDR 13.5, xfr pipe, HDPE, 90 de	EA	194.45	
1462	LGLCS,ativ & psiv trench,8" dia, SDR 21, xfr pipe, HDPE, 90 deg	EA	194.45	
1463	LGLCS,ativ & psiv trench,8" dia, SDR 26, xfr pipe, HDPE, 90 deg	EA	201.40	
1464	LGLCS,ativ & psiv trench,10" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	310.95	
1465	LGLCS,ativ & psiv trench,10" dia,SDR 21, xfr pipe, HDPE, 90	EA	316.35	
1466	LGLCS,ativ & psiv trench,10" dia,SDR 26, xfr pipe, HDPE, 90	EA	281.27	
1467	LGLCS,ativ & psiv trench,12" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	455.36	
1468	LGLCS,ativ & psiv trench,12" dia,SDR 21, xfr pipe, HDPE, 90	EA	510.90	
1469	LGLCS,ativ & psiv trench,12" dia,SDR 26, xfr pipe, HDPE, 90	EA	510.90	
1471	LGLCS,ativ & psiv trench,14" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	596.94	
1472	LGLCS,ativ & psiv trench,14" dia,SDR 21, xfr pipe, HDPE, 90	EA	569.30	
1473	LGLCS,ativ & psiv trench,14" dia,SDR 26, xfr pipe, HDPE, 90	EA	536.77	
1474	LGLCS,ativ & psiv trench,16" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	761.30	
1475	LGLCS,ativ & psiv trench,16" dia,SDR 21, xfr pipe, HDPE, 90	EA	727.95	
1476	LGLCS,ativ & psiv trench,16" dia,SDR 26, xfr pipe, HDPE, 90	EA	762.08	
1477	LGLCS,ativ & psiv trench,18" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	1,029.84	
1478	LGLCS,ativ & psiv trench,18" dia,SDR 21, xfr pipe, HDPE, 90	EA	980.23	
1479	LGLCS,ativ & psiv trench,18" dia,SDR 26, xfr pipe, HDPE, 90	EA	917.21	
1481	LGLCS,ativ & psiv trench,24" dia,SDR 13.5, xfr pipe, HDPE, 90	EA	1,926.99	
1482	LGLCS,ativ & psiv trench,24" dia,SDR 21, xfr pipe, HDPE, 90	EA	1,838.75	
1483	LGLCS,ativ & psiv trench,24" dia,SDR 26, xfr pipe, HDPE, 90	EA	1,689.52	
1491	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 3"	EA	47.71	
1492	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 3"	EA	47.71	
1493	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 4"	EA	59.11	
1494	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 4"	EA	62.52	
1495	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 6"	EA	104.50	
1496	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 6"	EA	117.48	
1497	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 8"	EA	227.27	
1498	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 8"	EA	260.63	
1499	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 12"	EA	453.09	
1501	LGLCS,ativ & psiv trench,SDR 21/26, xfr pipe, HDPE, tee, 12"	EA	466.96	
1502	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 18"	EA	1,171.49	
1503	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 18"	EA	1,122.89	
1504	LGLCS,ativ & psiv trench, SDR 13.5, xfr pipe, HDPE, tee, 24"	EA	2,096.62	
1505	LGLCS,ativ & psiv trench, SDR 21/26, xfr pipe, HDPE, tee, 24"	EA	2,014.07	
02082 1600 Chemical Resistant Sump & Mnhole				
1611	LGLCS, chem res HDPE MH, lid sst handle, 27" dia, conc filled	EA	112.49	
1612	LGLCS, chem res HDPE MH, 2' high riser section, 4' dia	EA	179.97	
1613	LGLCS, chem res HDPE MH, 3.25' high upper unit, 4' dia	EA	271.85	
1614	LGLCS, chem res HDPE MH, 4.25' high upper unit, 4' dia	EA	316.11	
1615	LGLCS, chem res HDPE MH, no outlets, 3' high x 4' dia	EA	271.45	
1616	LGLCS, chem res HDPE MH, 12" inlet/outlet, factory attached	EA	102.93	
1617	LGLCS, chem res HDPE MH, 15" inlet/outlet, factory attached	EA	125.20	
1618	LGLCS, chem res HDPE MH, 18" inlet/outlet, factory attached	EA	138.61	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1619	LGLCS, chem res HDPE MH, 24" inlet/outlet, factory attached	EA	163.51	
1621	LGLCS, chem res HDPE MH, 30" inlet/outlet, factory attached	EA	190.58	
1622	LGLCS, chem res HDPE MH, 36" inlet/outlet, factory attached	EA	223.57	
1623	LGLCS, chem res HDPE MH, for leachate transport pipe, 4"	EA	5.68	
1624	LGLCS, chem res HDPE MH, for leachate transport pipe, 6"	EA	6.68	
1625	LGLCS, chem res HDPE MH, for leachate transport pipe, 8"	EA	8.67	
1626	LGLCS, chem res HDPE MH, for leachate transport pipe, 10"	EA	12.45	
1627	LGLCS, chem res HDPE MH, for leachate transport pipe, 12"	EA	15.66	
1628	LGLCS, chem res HDPE MH, additional penetrations into	EA	165.45	
1631	LGLCS, chem res HDPE, 42" riser sump w/22.5" or 30" dia neck	EA	834.87	
1632	LGLCS, chem res HDPE, 2" riser sump ext, 22.5" or 30" dia	EA	302.82	
1633	LGLCS, chem res HDPE, 48" sump base	EA	238.27	
1634	LGLCS, chem res HDPE, 30" sump cover	EA	182.75	
1635	LGLCS, chem res HDPE, 22" sump cover	EA	147.19	
1636	LGLCS, chem res HDPE, riser sump to base seal	EA	147.19	
1637	LGLCS, chem res HDPE, riser sump to extension seal	EA	110.06	
1638	LGLCS, chem res HDPE sump, 2" conduit grommet, box of 6	EA	191.09	
1639	LGLCS, chem res HDPE sump, 4" conduit grommet, box of 6	EA	232.47	
1641	LGLCS, chem res HDPE sump, 6" conduit grommet, box of 6	EA	308.16	
02082 2000 Sheet Drainage Systems				
02082 2100 Drainage Nets and Composites				
2111	LGLCS, sheet drain sys, 1/4" thick HDPE, polthn, drainage net	SF	0.19	
2112	LGLCS, sheet drain sys, net w/geotextile fab heat bonded 1	SF	0.36	
2113	LGLCS, sheet drain sys, net w/geotextile fab heat bonded 2	SF	0.42	
02082 6000 Gas Interception Networks				
02082 6200 Gas Treatment				
6221	LGLCS, GIN, 2.25 million BTU/hr landfill flare, gas treatment	EA	39,071.11	
6222	LGLCS, GIN, 7.5 million BTU/hr landfill flare, gas treatment	EA	53,153.97	
6223	LGLCS, GIN, 10.5 million BTU/hr landfill flare, gas treatment	EA	64,921.93	
6224	LGLCS, GIN, 22.5 million BTU/hr landfill flare, gas treatment	EA	94,348.54	
6225	LGLCS, GIN, gas treatment, 30 million BTU/hr landfill flare	EA	92,692.46	
6226	LGLCS, GIN, gas treatment, 36 million BTU/hr landfill flare	EA	120,970.40	
6227	LGLCS, GIN, gas treatment, 60 million BTU/hr landfill flare	EA	221,166.90	
6228	LGLCS, GIN, 120 million BTU/hr landfill flare, gas treatment	EA	411,615.65	
02082 6300 Gas Scrubber				
6311	LGLCS, GIN, 1500 CFM fluidized bed gas scrubber, single stage	EA	41,719.69	
6312	LGLCS, GIN, 3000 CFM fluidized bed gas scrubber, single stage	EA	58,184.86	
6313	LGLCS, GIN, 4400 CFM fluidized bed gas scrubber, single stage	EA	92,371.46	
6314	LGLCS, GIN, 5800 CFM fluidized bed gas scrubber, single stage	EA	80,963.56	
6315	LGLCS, GIN, 7700 CFM fluidized bed gas scrubber, single stage	EA	102,482.18	
6316	LGLCS, GIN, 9600 CFM fluidized bed gas scrubber, single stage	EA	115,790.57	
6317	LGLCS, GIN, 12,000 CFM fluidized bed gas scrubber,	EA	129,314.22	
6318	LGLCS, GIN, 17,000 CFM fluidized bed gas scrubber,	EA	154,527.92	
6319	LGLCS, GIN, 23,600 CFM fluidized bed gas scrubber,	EA	180,668.37	
6321	LGLCS, GIN, 30,200 CFM fluidized bed gas scrubber,	EA	203,496.09	
6322	LGLCS, GIN, 38,700 CFM fluidized bed gas scrubber,	EA	242,728.97	
6323	LGLCS, GIN, 47,200 CFM fluidized bed gas scrubber,	EA	266,014.39	
6324	LGLCS, GIN, 58,000 CFM fluidized bed gas scrubber,	EA	297,650.93	
6325	LGLCS, GIN, 79,700 CFM fluidized bed gas scrubber,	EA	348,225.96	
6326	LGLCS, GIN, 90,900 CFM fluidized bed gas scrubber,	EA	373,851.01	
6327	LGLCS, GIN, 113,300 CFM fluidized bed gas scrubber,	EA	508,922.08	
02082 6400 Gas Collection				
6451	LGLCS, GIN, 4.9 max HP, 48 CFM gas collect, vac blower, pos	EA	1,544.89	
6452	LGLCS, GIN, 5.6 max HP, 111 CFM gas collect, vac blower, pos	EA	1,694.41	
6453	LGLCS, GIN, 12.2 max HP, 143 CFM gas collect, vac blower, pos	EA	1,805.04	
6454	LGLCS, GIN, 11.8 max HP, 271 CFM gas collect, vac blower, pos	EA	1,937.82	
6455	LGLCS, GIN, 134 CFM gas collect, vac blower, pos displ,	EA	2,118.14	
6456	LGLCS, GIN, 19.7 max HP, 278 CFM gas collect, vac blower, pos	EA	2,139.36	
6457	LGLCS, GIN, 18.3 max HP, 399 CFM gas collect, vac blower, pos	EA	2,395.43	
6458	LGLCS, GIN, 25.4 max HP, 247 CFM gas collect, vac blower, pos	EA	2,830.33	
6459	LGLCS, GIN, 28.3 max HP, 427 CFM gas collect, vac blower, pos	EA	2,931.10	
6461	LGLCS, GIN, 665 CFM gas collect, vac blower, pos displ,	EA	3,069.00	
6462	LGLCS, GIN, 38.8 max HP, 393 CFM gas collect, vac blower, pos	EA	4,039.16	
6463	LGLCS, GIN, 49.6 max HP, 615 CFM gas collect, vac blower, pos	EA	4,208.87	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6464	LGLCS, GIN, 46.5 max HP,1248CFM gas collect, vac blower, pos	EA	5,395.15	
6465	LGLCS, GIN, 574 CFM gas collect, vac blower, pos displ,	EA	6,020.98	
6466	LGLCS, GIN, 67.1 max HP,1071CFM gas collect, vac blower, pos	EA	6,428.96	
6467	LGLCS, GIN, 65.5 max HP,1878CFM gas collect, vac blower, pos	EA	7,280.40	
02082 7000 Fugitive Dust, Vapor and Gas Emissions Control				
02082 7000 Fugitive Dust, Vapor and Gas Emissions Control				
02082 7100 Sprayed Dust Suppressants				
7101	LGLCS, fugitive dust, overall dust suppr, sprayed suppr,	SY	1.74	
7102	LGLCS, fugitive dust, erosion control for landfill cap,	SY	1.98	
7103	LGLCS, fugitive dust, stockpile suppr, sprayed suppr, treesap	SY	1.82	
7104	LGLCS, fugitive dust, per maint appl, sprayed suppr, treesap	SY	1.59	
7105	LGLCS, fugitive dust, overall dust suppr, sprayed suppr,	SY	1.74	
7106	LGLCS, fugitive dust, for landfill cap, sprayed suppr,	SY	1.98	
7107	LGLCS, fugitive dust, stockpile suppr, sprayed suppr, chloride	SY	1.82	
7108	LGLCS, fugitive dust, per maint appl, sprayed suppr, chloride	SY	1.59	
7109	LGLCS, fugitive dust, overall dust suppr, sprayed suppr, oil	SY	1.74	
7111	LGLCS, fugitive dust, for landfill cap, sprayed suppr, oil	SY	1.98	
7112	LGLCS, fugitive dust, stockpile sprt, sprayed suppr, oil	SY	1.82	
7113	LGLCS, fugitive dust, per maint appl, sprayed suppr, oil	SY	1.59	
7114	LGLCS, fugitive dust, overall dust, sprayed suppr, asphalt	SY	1.91	
7115	LGLCS, fugitive dust, for landfill cap, sprayed suppr,	SY	2.15	
7116	LGLCS, fugitive dust, stockpile suppr, sprayed suppr, asphalt	SY	1.99	
7117	LGLCS, fugitive dust, per maint appl, sprayed suppr, asphalt	SY	1.76	
7118	LGLCS, fugitive dust, overall dust, sprayed suppr,	SY	1.74	
7119	LGLCS, fugitive dust, for landfill cap, sprayed suppr,	SY	1.98	
7121	LGLCS, fugitive dust, stockpile dust, sprayed suppr,	SY	1.82	
7122	LGLCS, fugitive dust, per maint appl, sprayed suppr,	SY	1.59	
02082 7200 Synthetic Covers Over Waste Piles				
7211	LGLCS, fugitive dust, 130 lb tear str, synth cov waste pile,	SF	0.14	
7212	LGLCS, fugitive dust, 135 lb tear str, synth cov waste pile,	SF	0.20	
7213	LGLCS, fugitive dust, 185 lb tear str, synth cov waste pile,	SF	0.31	
7214	LGLCS, fugitive dust, 250 lb tear str, synth cov waste pile,	SF	0.42	
7215	LGLCS, fugitive dust, add for cover drawstring, synth cov	LF	0.35	
7216	LGLCS, fugitive dust, add for metal grommets, synth cov waste	EA	0.66	
02085 Underground Storage Tank Removal				
02085 1000 Remove Tank Contents				
02085 1100 Transfer Reusable Fuel				
1101	Transfer Reusable Fuel Includes the removal and	GAL	0.21	
02085 1200 Pump Liquids and Rinsate				
1201	Remove Pump Liquids & Rinsate Includes removal and handling	GAL	0.28	
1202	Transport Pump Liquids & Rinsate (OBTAIN QUOTE) Transport from	GAL		
1203	Pump Liq & Rinsate Disposal Fee (OBTAIN QUOTE) Cost is for the	GAL		
02085 1300 Sludge				
02085 1310 Hazardous Sludge				
1311	Hzds Sludge Scraping & Coll Includes scraping the interior	GAL	0.33	
1312	Hzds Sludge Removal & Storage Includes removing the sludge	GAL	0.94	
1313	Hzds Sludge Transportation 55 Gal Drums	EA		
1314	Hzds Sludge Disposal Fee 55 Gal Drums	EA		
02085 1320 Nonhazardous Sludge				
1321	Nonhzds Sludge Scraping & Coll Includes scraping the interior	GAL	0.33	
1322	Nonhzds Sludge Removal & Stor Includes removing the sludge	GAL	0.94	
1323	Nonhzds Sludge Transportation 55 Gal Drums	EA		
1324	Nonhzds Sludge Disposal Fee 55 Gal Drums	EA		
02085 3000 Purge Tank				
3001	Purge Tank using Dry Ice Use approximately 3.0 lbs of	LB	1.39	
02085 4000 Tank Removal				
02085 4100 Dem Petroleum Piping				
4101	Dem Petroleum Piping below 4" Costs do not include	LF	6.57	
4102	Dem Petroleum Piping 4" to 8" Costs do not include	LF	8.76	
02085 4200 Remove Tank				
4201	Remove 1-2000 gal tank Cut straps, extract tank from	EA	427.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4202	Remove 2001 - 5000 gal tank Cut straps, extract tank from	EA	427.33	
4203	Remove 5001 - 10000 gal tank Cut straps, extract tank from	EA	854.66	
4204	Remove 10001 - 20000 gal tank Cut straps, extract tank from	EA	1,068.33	
4205	Remove 20001 - 30000 gal tank Cut straps, extract tank from	EA	1,279.43	
4206	Remove 30001 - 40000 gal tank Cut straps, extract tank from	EA	1,504.69	
4207	Remove 40001 - 50000 gal tank Cut straps, extract tank from	EA	1,709.32	
02085 4300 Clean & Rinse Tank				
02085 4310 Clean & Rinse Tank Interior				
4311	Clean 1 - 2000 Gal tank int High pressure water wash and	EA	274.49	
4312	Clean 2001 - 5000 Gal tank int High pressure water wash and	EA	548.99	
4313	Clean 5001 - 10000 Gal tank int High pressure water wash and	EA	821.83	
4314	Clean 10001 - 20000 Gal tank int High pressure water wash and	EA	1,236.45	
4315	Clean 20001 - 30000 Gal tank int High pressure water wash and	EA	1,653.58	
4316	Clean 30001 - 40000 Gal tank int High pressure water wash and	EA	2,048.46	
4317	Clean 40001 - 50000 Gal tank int High pressure water wash and	EA	2,744.93	
02085 4320 Clean Tank Exterior				
4321	Clean 1-2000 gal tank ext Scrape clean the exterior	EA	321.62	
4322	Clean 2001 - 5000 gal tank ext Scrape clean the exterior	EA	321.62	
4323	Clean 5001 - 10000 gal tank ext Scrape clean the exterior	EA	643.24	
4324	Clean 10001 - 20000 gal tank ext Scrape clean the exterior	EA	1,286.48	
4325	Clean 20001 - 30000 gal tank ext Scrape clean the exterior	EA	1,608.10	
4326	Clean 30001 - 40000 gal tank ext Scrape clean the exterior	EA	2,088.44	
4327	Clean 40001 - 50000 gal tank ext Scrape clean the exterior	EA	2,871.60	
02085 4400 Cut Tank for Disposal				
4401	Cut 1 - 2000 gal tank Cut tank into sections that can	EA	252.26	
4402	Cut 2001 - 5000 gal tank Cut tank into sections that	EA	504.52	
4403	Cut 5001 - 10000 gal tank Cut tank into sections that	EA	757.53	
4404	Cut 10001 - 20000 gal tank Cut tank into sections that	EA	1,009.04	
4405	Cut 20001 - 30000 gal tank Cut tank into sections that can	EA	1,261.30	
4406	Cut 30001 - 40000 gal tank Cut tank into sections that	EA	1,510.54	
4407	Cut 40001 - 50000 gal tank Cut tank into sections that	EA	2,018.08	
02085 4500 Transport Tank to Disposal Facility				
4501	Transport 1 - 2000 gal tank Load and haul tank to the	EA	226.73	
4502	Transport 2001 - 5000 gal tank Load and haul tank to the	EA	226.73	
4503	Transport 5001 - 10000 gal tank Load and haul tank to the	EA	453.47	
4504	Transport 10001 - 20000 gal tank Load and haul tank to the	EA	453.47	
4505	Transport 20001 - 30000 gal tank Load and haul tank to the	EA	680.88	
4506	Transport 30001 - 40000 gal tank Load and haul tank to the	EA	680.88	
4507	Transport 40001 - 50000 gal tank Load and haul tank to the	EA	906.93	
02085 4600 Tank Salvage				
4601	Tank Salvage Cost (PROVIDE COST) The cost for tank salvage is	TON		
02085 5000 Petroleum Contam Soil Disposal				
02085 5500 Transport Petroleum Contam Soil				
5501	Transport Petroleum Contam Soil (PROVIDE QUOTE) Transport	TON		
02085 5600 Landfarm Petroleum Contam Soil				
5601	Landfarm Fee (PROVIDE QUOTE) The ability to landfarm	TON		
02085 6000 Catch Basin, Mnholes, or Vaults				
6001	Dem Concrete Vault 5' Deep X 5' Wide X 12' Long	EA	594.79	
02085 7000 Excavation of Contaminated Soil				
02085 7100 Petroleum Contaminated Soil				
02085 7110 Excavate Petroleum Contaminated Soil				
7111	Excavate Petroleum Contam Soil Includes excavation, making a	CY	5.25	
02085 7120 Petroleum Contaminated Soil Stockpile				
Note: Costs are for the material used in the building of the petroleumcontaminated stockpile and have been calculated for the amount of materialneeded to contain one ton of soil.				
7171	30 mil base liner for stockpile Calculated to be 9.93 sf of	TON	4.66	
7172	10 mil base liner for stockpile Calculated to be 9.93 sf of	TON	3.37	
7173	Sandbags for Stockpile: SEE NOTE	TON	0.94	
7174	Berm Soil for Stockpile SEE NOTE	TON	0.47	

02086 Monitoring Wells

02086 0010 Mnitoring well construction

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02086 5100 Drilling				
02086 5110 Hollow stem auger				
5111	Mnitor well, drilling, split spoon, HS auger, 2.25" ID x 6"	LF	14.18	
5112	Mnitor well, drilling, 2" or less, HS auger, 4.25" ID x 8" OD	LF	18.02	
5113	Mnitor well, drilling, 4" or less, HS auger, 6.625" ID x 11"	LF	22.03	
5114	Mnitor well, drilling, 6" or less, HS auger, 8.25" ID x	LF	28.31	
5115	Mnitor well, drilling, 8" or less, HS auger, 10.25" ID x 16"	LF	32.81	
5116	Mnitor well, drilling, 2" x 24", HS auger, split spoon	EA	46.67	
02086 5120 Mud drilling				
5121	Mnitor well, mud drilling, borehole, 4" dia	LF	22.80	
5122	Mnitor well, mud drilling, borehole, 6" dia	LF	25.08	
5123	Mnitor well, mud drilling, borehole, 8" dia	LF	27.36	
5124	Mnitor well, mud drilling, borehole, 10" dia	LF	31.16	
5125	Mnitor well, mud drilling, borehole, 12" dia	LF	34.96	
5126	Mnitor well, mud drilling, borehole, 15" dia	LF	42.56	
5131	Mnitor well, mud dr, 6" dia, borehole, air rotary in	LF	22.80	
5132	Mnitor well, mud dr, 8" dia, borehole, air rotary in	LF	37.99	
5133	Mnitor well, mud dr, 10" dia, borehole, air rotary in	LF	68.40	
5134	Mnitor well, mud dr, 12" dia, borehole, air rotary in	LF	91.20	
5135	Mnitor well, mud dr, 16" dia, borehole, air rotary in	LF	121.59	
5136	Mnitor well, mud dr, 18" dia, borehole, air rotary in	LF	141.86	
5137	Mnitor well, mud dr, 22" dia, borehole, air rotary in	LF	170.23	
5141	Mnitor well, mud dr, 6" dia, borehole, air rotary in	LF	18.24	
5142	Mnitor well, mud dr, 8" dia, borehole, air rotary in	LF	45.59	
5143	Mnitor well, mud dr, 10" dia, borehole, air rotary in	LF	91.20	
5144	Mnitor well, mud dr, 12" dia, borehole, air rotary in	LF	190.08	
02086 5200 Furnish and install casing				
02086 5210 PVC schedule 40, flush threaded				
5211	Mnitor well, casing, 1/2" dia, 10' L, PVC sched 40, flush	LF	2.91	
5212	Mnitor well, casing, 3/4" dia, 10' L, PVC sched 40, flush	LF	2.98	
5213	Mnitor well, casing, 1" dia, 10' L, PVC sched 40, flush	LF	2.88	
5214	Mnitor well, casing, 1.25" dia, 10' L, PVC sched 40, flush	LF	2.86	
5215	Mnitor well, casing, 1.5" dia, 10' L, PVC sched 40, flush	LF	2.89	
5216	Mnitor well, casing, 2" dia, 10' L, PVC sched 40, flush	LF	4.31	
5217	Mnitor well, casing, 2.5" dia, 10' L, PVC sched 40, flush	LF	5.33	
5218	Mnitor well, casing, 3" dia, 10' L, PVC sched 40, flush	LF	6.12	
5219	Mnitor well, casing, 4" dia, 10' L, PVC sched 40, flush	LF	7.33	
5221	Mnitor well, casing, 4.5" dia, 10' L, PVC sched 40, flush	LF	9.60	
5222	Mnitor well, casing, 5" dia, 10' L, PVC sched 40, flush	LF	11.30	
5223	Mnitor well, casing, 6" dia, 10' L, PVC sched 40, flush	LF	13.79	
5224	Mnitor well, casing, 8" dia, 10' L, PVC sched 40, flush	LF	20.34	
5225	Mnitor well, casing, 10" dia, 10' L, PVC sched 40, flush	LF	22.68	
5226	Mnitor well, casing, 12" dia, 10' L, PVC sched 40, flush	LF	24.64	
02086 5230 PVC schedule 80, flush threaded				
5231	Mnitor well, casing, 1/2" dia, 10' L, PVC sched 80, flush	LF	2.96	
5232	Mnitor well, casing, 3/4" dia, 10' L, PVC sched 80, flush	LF	2.97	
5233	Mnitor well, casing, 1" dia, 10' L, PVC sched 80, flush	LF	3.03	
5234	Mnitor well, casing, 1.25" dia, 10' L, PVC sched 80, flush	LF	3.03	
5235	Mnitor well, casing, 1.5" dia, 10' L, PVC sched 80, flush	LF	3.15	
5236	Mnitor well, casing, 2" dia, 10' L, PVC sched 80, flush	LF	4.66	
5237	Mnitor well, casing, 2.5" dia, 10' L, PVC sched 80, flush	LF	6.17	
5238	Mnitor well, casing, 3" dia, 10' L, PVC sched 80, flush	LF	7.01	
5239	Mnitor well, casing, 4" dia, 10' L, PVC sched 80, flush	LF	8.99	
5241	Mnitor well, casing, 5" dia, 10' L, PVC sched 80, flush	LF	12.58	
5242	Mnitor well, casing, 6" dia, 10' L, PVC sched 80, flush	LF	16.34	
5243	Mnitor well, casing, 8" dia, 10' L, PVC sched 80, flush	LF	23.18	
5244	Mnitor well, casing, 10" dia, 10' L, PVC sched 80, flush	LF	26.64	
5245	Mnitor well, casing, 12" dia, 10' L, PVC sched 80, flush	LF	30.19	
02086 5250 Teflon, flush threaded				
5251	Mnitor well, casing, 5' L, Teflon, flush threaded, 1.25"	LF	4.06	
5252	Mnitor well, casing, 5' L, Teflon, flush threaded, 1.5" dia	LF	4.30	
5253	Mnitor well, casing, Teflon, flush threaded, 2" dia, 5' L	LF	5.10	
5254	Mnitor well, casing, Teflon, flush threaded, 3" dia, 5' L	LF	6.67	
5255	Mnitor well, casing, Teflon, flush threaded, 4" dia, 5' L	LF	8.20	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02086 5270 Stainless steel, flush threaded				
5271	Mnitor well, casing, #304, sst, flush threaded, 2" dia casing	LF	14.34	
5272	Mnitor well, casing, #304, sst, flush threaded, 4" dia casing	LF	29.26	
02086 5300 Furnish and install well casing				
02086 5300 Stainless steel, flush threaded				
5301	Mnitor well, sst well casing, 6" dia, flush threaded, 5'	LF	57.39	
5302	Mnitor well, sst well casing, 8" dia, flush threaded, 5'	LF	138.43	
5303	Mnitor well, sst well casing, 10" dia, flush threaded, 5'	LF	146.10	
5304	Mnitor well, sst well casing, 12" dia, flush threaded, 5'	LF	175.71	
5311	Mnitor well, sst well casing, 10' section, 6" dia, flush	LF	33.84	
5312	Mnitor well, sst well casing, 10' section, 8" dia, flush	LF	87.09	
5313	Mnitor well, sst well casing, 10' section, 10" dia, flush	LF	124.00	
5314	Mnitor well, sst well casing, 10' section, 12" dia, flush	LF	146.28	
02086 5320 Stainless steel, welded ring				
5321	Mnitor well, sst well casing, 10" dia, welded ring, 5' section	LF	91.32	
5322	Mnitor well, sst well casing, 12" dia, welded ring, 5' section	LF	131.49	
5331	Mnitor well, sst well casing, 10" dia, welded ring, 10'	LF	67.40	
5332	Mnitor well, sst well casing, 12" dia, welded ring, 10'	LF	94.27	
02086 5400 Furnish and install well monitoring screens				
02086 5410 PVC schedule 40, flush threaded				
5411	Mnitor well, M-screens, 1/2" dia, 10' L, PVC sched 40, flush	LF	3.48	
5412	Mnitor well, M-screens, 3/4" dia, 10' L, PVC sched 40, flush	LF	3.57	
5413	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 1" dia	LF	3.66	
5414	Mnitor well, M-screens, 1.25" dia, 10' L, PVC sched 40, flush	LF	3.75	
5415	Mnitor well, M-screens, 1.5" dia, 10' L, PVC sched 40, flush	LF	3.88	
5416	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 2" dia	LF	5.10	
5417	Mnitor well, M-screens, 2.5" dia, 10' L, PVC sched 40, flush	LF	6.57	
5418	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 3" dia	LF	7.73	
5419	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 4" dia	LF	8.92	
5421	Mnitor well, M-screens, 4.5" dia, 10' L, PVC sched 40, flush	LF	12.18	
5422	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 5" dia	LF	14.27	
5423	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 6" dia	LF	15.93	
5424	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 8" dia	LF	23.21	
5425	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 10" dia	LF	29.41	
5426	Mnitor well, M-screens, 10' L, PVC sched 40, flush thd, 12" dia	LF	32.64	
02086 5430 PVC schedule 80, flush threaded				
5431	Mnitor well, M-screens, 1/2" dia, 10' L, PVC sched 80, flush	LF	3.38	
5432	Mnitor well, M-screens, 3/4" dia, 10' L, PVC sched 80, flush	LF	3.46	
5433	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 1" dia	LF	3.70	
5434	Mnitor well, M-screens, 1.25" dia, 10' L, PVC sched 80, flush	LF	3.96	
5435	Mnitor well, M-screens, 1.5" dia, 10' L, PVC sched 80, flush	LF	4.12	
5436	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 2" dia	LF	5.63	
5437	Mnitor well, M-screens, 2.5" dia, 10' L, PVC sched 80, flush	LF	7.31	
5438	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 3" dia	LF	8.43	
5439	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 4" dia	LF	10.54	
5441	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 5" dia	LF	15.47	
5442	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 6" dia	LF	18.68	
5443	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 8" dia	LF	27.34	
5444	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 10" dia	LF	35.61	
5445	Mnitor well, M-screens, 10' L, PVC sched 80, flush thd, 12" dia	LF	39.54	
02086 5450 Teflon, flush threaded				
5451	Mnitor well, M-screens, 1.25" dia, 5' L, teflon, flush	LF	3.71	
5452	Mnitor well, M-screens, 5' L, teflon, flush threaded, 1.5" dia	LF	3.85	
5453	Mnitor well, M-screens, 5' L, teflon, flush threaded, 2" dia	LF	5.87	
5454	Mnitor well, M-screens, 5' L, teflon, flush threaded, 3" dia	LF	7.03	
5455	Mnitor well, M-screens, 5' L, teflon, flush threaded, 4" dia	LF	8.97	
02086 5460 Wire wound stainless steel, flush threaded				
5461	Mnitor well, M-screens, 2" dia, #304, wire wound sst, flush	LF	22.69	
5462	Mnitor well, M-screens, 4" dia, #304, wire wound sst, flush	LF	35.23	
02086 5470 Integral sand packed				
5471	Mnitor well, M-screens, 1.25" ID x 2.4" OD, integral sand	EA	203.38	
5472	Mnitor well, M-screens, 2" ID x 3.5" OD, integral sand packed	EA	179.45	
5473	Mnitor well, M-screens, 2.5" ID x 4" OD, integral sand packed	EA	227.62	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5474	Mnitor well, M-screens, 3" ID x 4.5" OD, integral sand packed	EA	293.27	
5475	Mnitor well, M-screens, 4" ID x 5.75" OD, integral sand packed	EA	349.26	
5476	Mnitor well, M-screens, 5" ID x 7" OD, integral sand packed	EA	468.80	
5477	Mnitor well, M-screens, 6" ID x 8.25" OD, integral sand packed	EA	439.26	
02086 5480 Filter wrap				
5481	Mnitor well, M-screens, filter wrap, 2" dia filter sock	LF	1.47	
5482	Mnitor well, M-screens, filter wrap, 4" dia filter sock	LF	1.65	
5483	Mnitor well, M-screens, filter wrap, 6" dia filter sock	LF	1.79	
5484	Mnitor well, M-screens, filter wrap, 8" dia filter sock	LF	2.48	
02086 5500 Stainless steel well screen				
02086 5500 Flush threaded				
5501	Mnitor well, M-screens, 6" dia, sst, flush threaded, 5' section	LF	115.90	
5502	Mnitor well, M-screens, 8" dia, sst, flush threaded, 5' section	LF	149.70	
5503	Mnitor well, M-screens, 10" dia, sst, flush threaded, 5'	LF	185.63	
5504	Mnitor well, M-screens, 12" dia, sst, flush threaded, 5'	LF	210.10	
5511	Mnitor well, M-screens, 6" dia, sst, flush threaded, 10' sectio	LF	105.20	
5512	Mnitor well, M-screens, 8" dia, sst, flush threaded, 10' sectio	LF	136.01	
5513	Mnitor well, M-screens, 10" dia, sst, flush threaded, 10'	LF	163.76	
5514	Mnitor well, M-screens, 12" dia, sst, flush threaded, 10'	LF	180.18	
02086 5520 Welded ring				
5521	Mnitor well, M-screens, 10" dia, sst, welded ring, 5'	LF	173.99	
5522	Mnitor well, M-screens, 12" dia, sst, welded ring, 5'	LF	197.00	
5531	Mnitor well, M-screens, 10" dia, sst, welded ring, 5'	LF	153.05	
5532	Mnitor well, M-screens, 12" dia, sst, welded ring, 5'	LF	173.65	
02086 5600 Mnitoring well fittings				
02086 5610 Solid plugs, flush threaded				
5611	Mnitor well, plugs, teflon, flush threaded, 1.25" solid plug	EA	39.19	
5612	Mnitor well, plugs, teflon, flush threaded, 1.5" solid plug	EA	42.53	
5613	Mnitor well, plugs, flush threaded, 2" solid plug, teflon	EA	57.96	
5614	Mnitor well, plugs, flush threaded, 3" solid plug, teflon	EA	95.72	
5615	Mnitor well, plugs, flush threaded, 4" solid plug, teflon	EA	19.16	
5616	Mnitor well, plugs, flush threaded, 1/2" solid plug, PVC	EA	18.94	
5617	Mnitor well, plugs, flush threaded, 3/4" solid plug, PVC	EA	17.26	
5618	Mnitor well, plugs, flush threaded, 1" solid plug, PVC	EA	16.97	
5619	Mnitor well, plugs, flush threaded, 1.25" solid plug, PVC	EA	18.10	
5621	Mnitor well, plugs, flush threaded, 1.5" solid plug, PVC	EA	19.82	
5622	Mnitor well, plugs, flush threaded, 2" solid plug, PVC	EA	19.72	
5623	Mnitor well, plugs, flush threaded, 2.5" solid plug, PVC	EA	26.06	
5624	Mnitor well, plugs, flush threaded, 3" solid plug, PVC	EA	20.53	
5625	Mnitor well, plugs, flush threaded, 4" solid plug, PVC	EA	42.13	
5626	Mnitor well, plugs, flush threaded, 4.5" solid plug, PVC	EA	41.47	
5627	Mnitor well, plugs, flush threaded, 5" solid plug, PVC	EA	55.16	
5628	Mnitor well, plugs, flush threaded, 6" solid plug, PVC	EA	78.17	
5629	Mnitor well, plugs, flush threaded, 8" solid plug, PVC	EA	68.03	
5631	Mnitor well, plugs, flush threaded, 10" solid plug, PVC	EA	94.84	
5632	Mnitor well, plugs, flush threaded, 12" solid plug, PVC	EA	124.74	
5633	Mnitor well, plugs, #304 sst, flush threaded, 2" solid plug	EA	45.72	
5634	Mnitor well, plugs, #304 sst, flush threaded, 4" solid plug	EA	71.75	
5635	Mnitor well, plugs, flush threaded, 2" locking test plug	EA	28.29	
5636	Mnitor well, plugs, flush threaded, 4" locking test plug	EA	34.96	
5637	Mnitor well, plugs, flush threaded, 6" locking test plug	EA	49.97	
5638	Mnitor well, plugs, flush threaded, 6" sst plug	EA	182.08	
5639	Mnitor well, plugs, flush threaded, 8" sst plug	EA	258.65	
5640	Mnitor well, plugs, flush threaded, 10" sst plug	EA	377.63	
5641	Mnitor well, plugs, purchase only, flush threaded, 4" HDPE	EA	74.93	
5642	Mnitor well, plugs, purchase only, flush threaded, 6" HDPE	EA	91.31	
5643	Mnitor well, plugs, flush threaded, 12" sst plug	EA	422.51	
02086 5650 Points, flush threaded				
5651	Mnitor well, points, flush threaded, 1/2" solid point, PVC	EA	18.76	
5652	Mnitor well, points, flush threaded, 3/4" solid point, PVC	EA	17.94	
5653	Mnitor well, points, flush threaded, 1" solid point, PVC	EA	17.43	
5654	Mnitor well, points, PVC, flush threaded, 1.25" solid point	EA	18.02	
5655	Mnitor well, points, flush threaded, 1.5" solid point, PVC	EA	19.28	
5656	Mnitor well, points, flush threaded, 2" solid point, PVC	EA	16.20	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5657	Mnitor well, points, flush threaded, 2.5" solid point, PVC	EA	29.71	
5658	Mnitor well, points, flush threaded, 3" solid point, PVC	EA	18.61	
5659	Mnitor well, points, flush threaded, 4" solid point, PVC	EA	21.73	
02086 5660	Vented caps, flush threaded			
5661	Mnitor well, vented caps, flush threaded, 1/2" dia, PVC	EA	13.82	
5662	Mnitor well, vented caps, flush threaded, 3/4" dia, PVC	EA	13.95	
5663	Mnitor well, vented caps, flush threaded, 1" dia, PVC	EA	14.69	
5664	Mnitor well, vented caps, flush threaded, 1.25" dia, PVC	EA	15.27	
5665	Mnitor well, vented caps, flush threaded, 1.5" dia, PVC	EA	15.28	
5666	Mnitor well, vented caps, flush threaded, 2" dia, PVC	EA	15.63	
5667	Mnitor well, vented caps, flush threaded, 2.5" dia, PVC	EA	15.89	
5668	Mnitor well, vented caps, flush threaded, 3" dia, PVC	EA	18.36	
5669	Mnitor well, vented caps, flush threaded, 4" dia, PVC	EA	19.68	
5671	Mnitor well, vented caps, flush threaded, 4.5" dia, PVC	EA	21.85	
5672	Mnitor well, vented caps, flush threaded, 5" dia, PVC	EA	42.95	
5673	Mnitor well, vented caps, flush threaded, 6" dia, PVC	EA	45.55	
5674	Mnitor well, vented caps, flush threaded, 8" dia, PVC	EA	84.58	
5675	Mnitor well, vented caps, flush threaded, 10" dia, PVC	EA	103.61	
5676	Mnitor well, vented caps, flush threaded, 12" dia, PVC	EA	145.14	
5681	Mnitor well, vented caps, teflon, flush threaded, 1.25"	EA	30.49	
5682	Mnitor well, vented caps, flush threaded, 1.5" dia, teflon	EA	35.27	
5683	Mnitor well, vented caps, flush threaded, 2" dia, teflon	EA	36.82	
5684	Mnitor well, vented caps, flush threaded, 3" dia, teflon	EA	90.94	
5685	Mnitor well, vented caps, flush threaded, 4" dia, teflon	EA	100.04	
02086 5700	Protective caps and enclosures			
02086 5710	Locking caps			
5711	Mnitor well, locking cap, waterproof w/grout depth cntrl	EA	44.60	
5712	Mnitor well, locking cap, waterproof w/grout depth cntrl	EA	53.70	
5713	Mnitor well, locking cap, not water tight, 2" aluminum slip	EA	41.11	
5714	Mnitor well, locking cap, not water tight, 4" aluminum slip	EA	47.92	
5715	Mnitor well, locking cap, not water tight, 5" aluminum slip	EA	54.60	
5716	Mnitor well, locking cap, not water tight, 6" aluminum slip	EA	62.63	
5717	Mnitor well, locking cap, not water tight, 7" aluminum slip	EA	67.16	
5718	Mnitor well, locking cap, not water tight, 8" aluminum slip	EA	79.29	
5719	Mnitor well, locking cap, not water tight, 10" aluminum slip	EA	77.96	
5721	Mnitor well, locking cap, not water tight, 12" aluminum slip	EA	98.01	
5722	Mnitor well, locking cap, female NP threaded, 2" aluminum	EA	38.80	
5723	Mnitor well, locking cap, female NP threaded, 3" aluminum	EA	44.27	
5724	Mnitor well, locking cap, female NP threaded, 4" aluminum	EA	53.82	
5725	Mnitor well, locking cap, 2" expandable, w/sst bolt	EA	43.04	
5726	Mnitor well, locking cap, 4" expandable, w/sst bolt	EA	51.05	
5727	Mnitor well, locking cap, watertight, 2" test well, self	EA	45.14	
5728	Mnitor well, locking cap, watertight, 4" test well, self	EA	55.80	
5729	Mnitor well, locking cap, 6" self tapping, watertight	EA	77.85	
5731	Mnitor well, locking cap, warning labels for caps	EA	0.27	
5732	Mnitor well, locking cap, 4" x 4" x 5' standup cover	EA	152.28	
5733	Mnitor well, locking cap, lockable, 4" x 4" x 5' stl prot	EA	146.98	
5734	Mnitor well, locking cap, 6" x 6" x 5' stl protective cover,	EA	169.24	
5735	Mnitor well, locking cap, 8" x 8" x 5' stl protective cover,	EA	232.32	
02086 5740	Manhole covers			
5741	Mnitor well, manhole cover, 8" x 7.5", non-locking	EA	97.94	
5742	Mnitor well, manhole cover, 10" x 7.5", non-locking	EA	113.23	
5743	Mnitor well, manhole cover, 12" x 7.5", non-locking	EA	151.12	
5744	Mnitor well, manhole cover, locking & watertight, 8" x 7.5"	EA	100.42	
5745	Mnitor well, manhole cover, locking & watertight, 12" x 7.5"	EA	132.68	
02086 5750	Protective enclosures			
5751	Mnitor well, protective encl, hinged lid, lockable, 4" x 3',	EA	126.61	
5752	Mnitor well, protective encl, hinged lid, lockable, 4" x 4',	EA	145.77	
5753	Mnitor well, protective encl, hinged lid, lockable, 4" x 5',	EA	176.67	
5754	Mnitor well, protective encl, hinged lid, lockable, 4" x 6',	EA	212.85	
5755	Mnitor well, protective encl, hinged lid, lockable, 5" x 3',	EA	144.91	
5756	Mnitor well, protective encl, hinged lid, lockable, 5" x 4',	EA	174.47	
5757	Mnitor well, protective encl, hinged lid, lockable, 5" x 5',	EA	199.84	
5758	Mnitor well, protective encl, hinged lid, lockable, 5" x 6',	EA	233.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5759	Mnitor well, protective encl, hinged lid, lockable, 6" x 3',	EA	162.68	
5761	Mnitor well, protective encl, hinged lid, lockable, 6" x 4',	EA	198.15	
5762	Mnitor well, protective encl, hinged lid, lockable, 6" x 5',	EA	197.16	
5763	Mnitor well, protective encl, hinged lid, lockable, 6" x 6',	EA	221.95	
5764	Mnitor well, protective encl, hinged lid, lockable, 8" x 3',	EA	192.30	
5765	Mnitor well, protective encl, hinged lid, lockable, 8" x 4',	EA	224.79	
5766	Mnitor well, protective encl, hinged lid, lockable, 8" x 5',	EA	221.16	
5767	Mnitor well, protective encl, hinged lid, lockable, 8" x 6',	EA	289.81	
02086 5770 Extraction well vault door				
5771	Mnitor well, extrct well vault dr, 48"x48" stl trough fr ped ldg	EA	1,472.38	
5772	Mnitor well, extrct well vault dr, 48"x48" stl angle fr HD dbl	EA	1,477.40	
02086 5800 Casing centralizers				
02086 5810 Stainless steel				
5811	Mnitor well, casing centralizers, adj boreholes to	EA	25.34	
5812	Mnitor well, casing centralizers, adj boreholes to	EA	22.83	
5813	Mnitor well, casing centralizers, adj boreholes to	EA	25.29	
5814	Mnitor well, casing centralizers, adj boreholes to	EA	28.61	
5815	Mnitor well, casing centralizers, adj boreholes to	EA	31.41	
5816	Mnitor well, casing centralizers, adj boreholes to	EA	35.17	
5817	Mnitor well, casing centralizers, adj boreholes to	EA	39.59	
5818	Mnitor well, casing centralizers, adj boreholes to	EA	44.69	
02086 5820 PVC				
5821	Mnitor well, casing centralizers, 1.5" casing,	EA	26.17	
5822	Mnitor well, casing centralizers, 2" casing,	EA	27.01	
5823	Mnitor well, casing centralizers, 3" casing,	EA	30.17	
5824	Mnitor well, casing centralizers, 4" casing,	EA	32.63	
5825	Mnitor well, casing centralizers, 6" casing,	EA	38.29	
5826	Mnitor well, casing centralizers, 8" casing,	EA	41.90	
5827	Mnitor well, casing centralizers, 12" casing,	EA	92.32	
5828	Mnitor well, casing cent, 1" - 2", 3/set, PVC, 1/2 moon, sol weld	EA	23.48	
5829	Mnitor well, casing cent, 2" - 4", 2/set, PVC, 1/2 moon, sol	EA	28.47	
5831	Mnitor well, casing cent, 4" - 6", PVC, 1/2 moon, sol weld large	EA	28.50	
02086 5840 Teflon				
5841	Mnitor well, casing centralizers, 4" borehole,	EA	30.64	
5842	Mnitor well, casing centralizers, 5" borehole,	EA	36.05	
5843	Mnitor well, casing centralizers, 6" borehole,	EA	45.57	
5844	Mnitor well, casing centralizers, 7" borehole,	EA	57.67	
5845	Mnitor well, casing centralizers, 8" borehole,	EA	70.02	
02086 5900 Mscellaneous accessories				
02086 5910 Wash down valves				
5911	Mnitor well, miscellaneous accessories, 1.25" dia, wash	EA	15.59	
5912	Mnitor well, miscellaneous accessories, 1.5" dia, wash down	EA	19.09	
5913	Mnitor well, miscellaneous accessories, 2" dia, wash down	EA	21.67	
5914	Mnitor well, miscellaneous accessories, 3" dia, wash down	EA	38.91	
5915	Mnitor well, miscellaneous accessories, 4" dia, wash down	EA	49.79	
5921	Mnitor well, miscellaneous accessories, K packer, 2" x 4"	EA	40.95	
5922	Mnitor well, miscellaneous accessories, K packer, 3" x 6"	EA	59.80	
5923	Mnitor well, miscellaneous accessories, K packer, 4" x 6"	EA	76.01	
5924	Mnitor well, miscellaneous accessories, K packer, 6" x 8"	EA	107.55	
02086 5930 Well material cleaning/packaging				
5931	Mnitor well, steam clean & bag 1/2" to 1" pipe or screen	LF	2.50	
5932	Mnitor well, steam clean & bag 1.25" to 2.5" pipe or screen	LF	3.00	
5933	Mnitor well, steam clean & bag 3" to 4" pipe or screen	LF	3.50	
5934	Mnitor well, steam clean & bag 5" to 6" pipe or screen	LF	5.50	
02086 5940 Fill boxes				
5941	Mnitor well, fill boxe, 2", w/ key female NP	EA	92.47	
5942	Mnitor well, fill boxe, 4", w/ key female NP	EA	162.70	
02086 6100 Gravel packing & annular sealant				
02086 6110 Filter sand				
6111	Mnitor well, filter sand, contaminant free, #2 mrie	TON	319.16	
02086 6120 Bentonite				
6121	Mnitor well, bentonite, 1/2" tablets, 10.16 #/gal	CF	78.95	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6122	Mnitor well, bentonite, 3/8" tablets, 10.62 #/gal	CF	79.19	
6123	Mnitor well, bentonite, 1/4" tablets, 10.80 #/gal	CF	84.14	
6124	Mnitor well, bentonite cylinder, seals 2" well, 6"	EA	174.88	
6125	Mnitor well, bentonite, 50 #/gal, drilling mud, chem	CF	8.22	
6126	Mnitor well, bentonite, 50# bags chemically untreated,	EA	14.30	
6127	Mnitor well, bentonite, 10.5#/gal, chips, medium 1/4" to	CF	56.76	
6128	Mnitor well, bentonite grout, 3.04#/gal, 50# yields 2.2 CF	CF	57.08	
6129	Mnitor well, bentonite grout, 50# bags	EA	7.65	
02086 6130 Bentonite test equipment				
6131	Mnitor well, bentonite test eqpt, mud balance	EA	141.34	
6132	Mnitor well, bentonite test eqpt, marsh funnel & cap	EA	27.05	
6133	Mnitor well, bentonite test eqpt, sand content kit	EA	51.18	
02086 6140 Portland cement				
6141	Mnitor well, portland cement, 94# bag, portland cement grout	CF	4.87	
6142	Mnitor well, portland cement, purchase portland cement grout	CF	16.44	
02096 Asbestos Abatement				
02096 4000 Preparatory, Abatement And Post-Abatement Gen Req				
02096 4010 Mbilization And Fees				
4011	Asb Abatement Notification Fees		1,237.76	
4012	Asb Decon of Trucks & Equipment Mbilization Fees		1,856.64	
02096 4020 Removal & Return Of Office Furniture & Equipment				
4021	Rem and Return Office Furniture General, (SF of Office Floor)		0.29	
4022	Rem and Return Lighting Fixtures		18.41	
02096 4030 Pre-Cleaning				
4031	HEPA Vac & Wet Clean, 6-11' Ceil SF of Floor, Wall, Ceiling		0.13	
4032	HEPA Vac & Wet Clean 12-15' Ceil		0.15	
4033	HEPA Vac and Wet Clean >15' Ceil		0.24	
4034	Protect Carpeted Area, 2 Layers 6 Ml Poly		1.15	
4035	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side, 8' High		2.94	
4036	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side 12' High		3.32	
4037	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side, 16' High		4.53	
4038	Personnel Decontamination Chambe r		3.79	
4039	Waste Decontamination Chamber		3.72	
02096 4040 Isolating Wrk Area (Set Up Neg-Air Wrk Area)				
4041	Isolate Asb Wrk Area Floors Flo or Area x 2 Layers 6 Ml Poly		0.46	
4042	Isolate Asb Wrk Area Wall/Ceil Wall Area x 2 Layers 4 Ml Poly		0.51	
4043	Wrap-Up General Office Furniture and Equipment w/1 Sheeting Laye		12.92	
4044	Wrap-Up Large/Complex Equipment 2 Layers of 6mm Sheeting		3.42	
4045	Set Up Port Asb Decon Facility C ost Amortized Over 10 Jobs		684.77	
4046	Set Up Int Custom Asb Decon Fac Interior Areas		320.10	
4047	Set Up Ext Custom Asb Decon Fac Weatherized		1,880.64	
4048	Set Up Neg Air Machine f/Asb Rem 1-2K CFM Unit/25 KCF Room Volum		368.34	
4049	Set Up Containmt Barr f/Asb Rem Wood Frame Wall w/Visqueen Layer		2.90	
02096 4050 Air Monitoring & Bulk Sampling				
4051	Asb Air Mnitor, 4 - 6 Hours/Day Bulk Sampling Tech Time Only		247.55	
4052	Rent 5 Pump Asb Air Mnitor Set		123.78	
4053	Post Asb Abatement Air Testing		37.14	
4054	Bulk Sampling and PLM Analysis S uspect Asbestos Materials		37.14	
4055	PCM Air Sample Analysis for Asb		37.14	
4056	TEM Air Sample Analysis for Asb 24 to 48 Hour Turn-Around Cost		618.88	
4057	Asbestos Removal Certified Air M onitoring (8 Mh/Day)		440.64	
4058	Clean Area Sampling		32.13	
4059	Industrial Hygienist		350.00	
02096 4060 Personnel Protection Equipment				
Note: Ea = No. Of Workers Times Number of Days. Cost of paper and type C respirator systems are amortized over a 10 job period.				
4061	Personnel Equipment, Worker/Day Coveralls, Respirator, Gloves		28.84	
4062	Paper Equipment, Worker/Day Pape r Respirator, Pump, Battery		19.50	
4063	Type-C Equip, Worker/Day 1/2 Fac e Respirator, Hoses, Air Pump		51.39	
4064	Install Ground Fault Interrupter		61.88	
02096 4070 Clean-Up After Abatement(Sf=Surface Area Of Rn)				
4071	Final Asb Abatement Clean-Up		0.31	
4072	Post Abatement Visual Inspection		216.61	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4073	Reclean for Failed Clearance HEP A Vacuuming or Wet Cleaning		0.12	
4074	Final Clean-Up, HEPA Vacuuming Remove Final Sheeting Layer		0.13	
4075	Remove Custom Decon Facility Post Abatement Clean Up		172.14	
4076	Remove Portable Decon Facility Post Abatement Clean Up		129.77	
4077	HEPA Vacuum Glove-Bag Work Areas Clean-Up of Non-Isolated Areas		0.13	
02096 4080	Disposal Of Ac			
4081	Handling of Asb Disposal Bags From Site to Truck Or Dumpster		1.29	
4082	Asbestos Landfill Disposal/Ton		216.61	
4083	Asbestos Landfill Disposal/CY		43.32	
4084	Collect & Bag Bulk Material, 3 Cf, Bags, By Hand		9.10	
4085	Collect & Bag Bulk Material, Large Production Vacuum Loader		5.25	
4086	Double Bag & Contaminate		4.27	
4087	Containerize Bagged Material, Per Bag		6.83	
02096 4090	Miscellaneous Costs			
4091	Caution Labels, 3"x5"		0.15	
4092	Caution Labels, 11"x17"		0.19	
4093	Glove Bag, 7 Ml, 50"x64"		5.94	
4094	Glove Bag, 10 Ml, 44"x60"		6.18	
4095	Disposable Polyethylene Bags, 6 Ml, 3 Cf		0.60	
02096 4100	Cover Surfaces			
Note: With Polyethylene Sheeting Including glue and tape.				
4101	Floors, Each Layer, 6 Ml		0.32	
4102	Floors, Each Layer, 4 Ml		0.30	
4103	Walls, Each Layer, 6 Ml		0.52	
4104	Walls, Each Layer, 4 Ml		0.44	
4105	Seal Wall Penetrations W/Foam Frestop To 36 Square Inches		5.88	
4106	Seal Wall Penetrations W/Foam Frestop To 36 To 72 Sq. Inches		9.37	
4107	Seal Wall Penetrations W/Foam Frestop To 72 To 144 Sq Inches		15.86	
4108	Caulk Seams With Latex		2.79	
02096 4200	Decontamination Containment Area Demolition			
4201	Spray Exposed Substrate With Surfactant, Flat Surfaces		0.91	
4202	Spray Exposed Substrate With Surfactant, Irregular Surfaces		1.24	
4203	Spray Exposed Substrate With Surfactant; Pipes, Beams, Columns		2.30	
4204	Spray Encapsulant Polyethylene Sheeting		0.68	
4205	Roll Down Polyethylene Sheeting		0.42	
4206	Bag Polyethylene Sheeting		9.10	
4207	Fine Clean Exposed Substrate, With Nylon Brush		1.37	
4208	Fine Clean Exposed Substrate, Wet Pipe Substrate		0.68	
4209	Fine Clean Exposed Substrate, Vacuum Surfaces, Fine Brush		0.51	
4211	Structural Demolition, Wood Stud Walls		1.19	
4212	Structural Demolition, Window Manifolds, Not Incl Window Replacement		0.80	
4213	Structural Demolition, Plywood Carpet Protection		1.65	
4214	HEPA Vacuum & Shampoo Carpeting		0.71	
02096 5000	Abatement In Isolated Work Area			
02096 5010	Pipe Insulation Removal, Mag-Block Type			
5011	Rem 1/2" to 4" D Asb Pipe Insul Mag Block Type, Isolated Area		1.96	
5012	Rem 4" to 6" Dia Asb Pipe Insul Mag Block Type, Isolated Area		2.47	
5013	Rem 7" to 12" D Asb Pipe Insul Mag Block Type, Isolated Area		3.30	
02096 5020	Pipe Insulation Removal, Air-Cell Type			
5021	Rem 1/2" to 4" Asb Pipe Insul Air-Cell Type, Isolated Area		1.24	
5022	Rem 4" to 6" Dia Asb Pipe Insul Air-Cell Type, Isolated Area		1.56	
5023	Rem 7" to 12" Dia Asb Pipe Insul Air-Cell Type, Isolated Area		2.10	
02096 5030	Hand Packed Plaster Fittings			
5031	Rem 1/2" to 4" D Asb Pipe Insul Hand Pkd Plastic Ftngs, Isolated		11.35	
5032	Rem 4" to 6" Dia Asb Pipe Insul Hand Pkd Plastic Ftng, Isolated		21.42	
5033	Rem 7" to 12" D Asb Pipe Insul Hand Pkd Plastic Ftng, Isolated		38.55	
02096 5040	Boiler Insulation Removal			
5041	Remove Up to 3-1/2" Boiler Insul		6.88	
5042	Remove Hot Boiler Insulation Remove when Boiler is Hot		19.22	
5043	Remove Boiler Gaskets		1.88	
02096 5050	Acoustical/Fire Proofing, Spray-On Removal			
5051	Rem Acous/Fire Proof, Ceil/Wall Scrape Plaster, Flat Ceiling/Wall		0.62	
5052	Rem Acous/Fire Proof, Flat Ceil Scrape, Drywall/Concrete		0.35	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5053	Rem Acous/Fire Proof, M1 Beams Scrape, Metal Beams		0.79	
5054	Rem Acous/Fire Proof, M1 Ducts Scrape, Metal Ductwork		0.68	
5055	Rem Acous/Fire Proof, w/Brush Final Scrape, by Hand w/Brush		0.62	
5056	Rem Acous/Fire Proof, Press Wash Final Scrape, Pressure Wash		0.32	
02096 5060	Miscellaneous Removal			
5061	Remove Hard Coat Plaster From Ductwork or Machines		4.73	
5062	Rem Int Asbestos Plaster Walls		7.74	
5063	Rem Ext Asbestos Plaster Walls		4.71	
5064	Remove Vinyl Asbestos Flooring		0.99	
5065	Rem Sht/Paper Backed Vinyl Floor		0.67	
5066	Remove Asbestos Paper Backing		0.42	
02096 6000	Abatement In Semi-Isolated Area			
02096 6010	Pipe Insulation Removal, Air-Cell, Glove Bag			
6011	Rem 1/2" to 4" D Asb Pipe Insul Air-Cell Glove, Semi-Isolated		6.53	
6012	Rem 4" to 6" Dia Asb Pipe Insul Air-Cell Glove, Semi-Isolated		6.78	
6013	Rem 7" to 12" Dia Asb Pipe Insul Air-Cell Glove, Semi-Isolated		9.27	
02096 6020	Pipe Insulation Removal, Mag-Block, Glove Bag			
6021	Rem 1/2" to 4" D Asb Pipe Insul Mag-Block Glove, Semi-Isolated		8.22	
6022	Rem 4" to 6" Dia Asb Pipe Insul Mag-Block Glove, Semi-Isolated		8.98	
6023	Rem 7" to 12" Dia Asb Pipe Insul Mag-Block Glove, Semi-Isolated		13.81	
02096 6030	Hand Packed Plaster Fitting Insul. By Glove Bag			
6031	Rem 1/2" to 4" D Asb Pipe Insul By Glove Bag, Semi-Isolated		39.93	
6032	Rem 4" to 6" Dia Asb Pipe Insul By Glove Bag, Semi-Isolated		41.92	
6033	Rem 7" to 12" Dia Asb Pipe Insul By Glove Bag, Semi-Isolated		62.87	
02096 6040	Asbestos Insulated Pipe And Ductwork Demolition			
6041	Rem > 6" D Asb Insulated Piping		3.24	
6042	Rem =< 12" Asb Insul Metal Duct < 3' x 1'		3.76	
02096 7000	Miscellaneous & Exterior Removal			
02096 7010	Miscellaneous Removal			
7011	Rem Cement-Asb Transite Board		0.50	
7012	Remove Transite Shingle Siding		1.86	
7013	Remove Asbestos Shingle Roofing		0.65	
7014	Remove Asbestos Millboard		0.61	
7015	Remove Floor Mastic		2.31	
7016	Remove Contaminated Soil/Crawl Space		9.07	
02096 7100	Bulk Asbestos Removal			
7101	Resilient Tile Removal		3.35	
7102	Sheet Carpet, Commercial Grade		2.79	
7103	Carpet Tile, Tufted, 18"x18" Or 24"x24"		6.21	
7104	Light Fixtures, Up To 2' x4'		45.49	
7105	Light Fixtures, Over To 2' x4'		62.03	
7106	Scrap Foam Fireproofing From Flat Surface		1.34	
7107	Scrap Foam Fireproofing From Irregular Surface		2.55	
7108	Remove Cementitious Material From Flat Surface		4.20	
7109	Remove Cementitious Material From Irregular Surface		8.40	
7111	Scrap Acoustical Coating From Ceiling		1.05	
7112	Spray-On Popcorn, Up To 1/2" Thk		3.33	
7113	Spray-On Popcorn, 1/2" To 1" Thk		4.23	
7114	Spray-On Popcorn, 1" To 2" Thk		6.17	
7115	Spray-On Popcorn, 2" To 4" Thk		6.97	
7116	Over Spray Removal		4.33	
7117	Radiator Backing, Not Including Radiator Removal		2.71	
7118	Siding Up To 12' High		5.35	
7119	Siding Over 12' High		6.66	
7121	Asbestos Fibered Roof Flashing		5.93	
02096 9000	Asbestos Removal			
Note: Includes removal, enclosure, protection, cleanup, transportation and disposal. Do not use line items 02096-4000 through 7999 in conjunction with these items.				
02096 9100	Pipe Fittings			
9101	4" & Under		34.69	
9102	Over 4", Up To 8"		45.88	
9103	Over 8"		55.79	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02096 9200	Pipe Insulation			
02096 9210	Less Than 100'			
9211	3" And Under		19.73	
9212	Over 3", Up To 6"		21.80	
9213	Over 6"		25.56	
02096 9220	100' And Over			
9221	3" And Under		17.40	
9222	Over 3", Up To 6"		19.15	
9223	Over 6"		22.65	
02096 9300	Duct Insulation			
9301	All Sizes, Duct		18.14	
02096 9400	Floor Tile & Linoleum			
9401	250 Sf Or Less		7.96	
9402	Over 250 Sf, Up To 800 Sf		5.68	
9403	Over 800 Sf		4.08	
9404	Loose		2.76	
02096 9500	Floor Mastic			
9501	Mastic Removal In Conjunction W Floor Tile Or Linoleum		2.17	
9502	Mastic Removal 250 Sf Or Less		2.23	
9503	Mastic Removal Over 250 Sf, Up T o 800 Sf		2.02	
9504	Mastic Removal Over 800 Sf		1.91	
02096 9600	Cement Asbestos Board (CAB)			
9601	Removal Of CAB		3.29	
02096 9700	Roofing			
9701	Removal Of All Asbestos Containi ng Roofing Material		2.86	
02096 9800	Ceiling, Walls And Columns			
9801	Total Area Under 1000 Sf		14.53	
9802	Total Area 1000 Sf And Over		11.62	
02097 1100	Preparatory Abatement And Post Abatement General Requirements			
02097 1110	Equipment And Materials			
1111	Chemical Suits		135.06	
1112	Chemical Gloves		13.50	
1113	Chemical Boots		22.51	
1114	Face Guard		22.51	
1115	Respirators, 1/2 Face		14.40	
1117	Respirators, Papr Full Face		405.18	
1119	Supplied Air Full Face, Includin g Air Line		382.67	
1122	Personnel Sampling Pump		472.72	
1124	Worker Protection, Whole Body, F oot And Head Cover, Gloves		9.91	
1125	Respirators, Single Use		10.81	
1126	Cartridge For Respirator		2.70	
1127	Chemical Stripper Paste And Pape r		13.50	
1128	Drums, 55 Gallon		67.53	
1129	Sink And Filter		450.21	
1131	Polyethylene, 6-Mil, 20' X 100'		45.02	
1132	Tape, 2" Presurre Sensitive		4.05	
1133	Decontamination Pool		90.05	
1134	Chemical Stripper Neutralizer		31.51	
1135	Adhesive Sprayer Neutralizer		4.50	
1136	Air Sampling Pump		522.23	
1138	Airless Sprayer Unit, 2 Gun		3,961.79	
1139	Light Stand, 500 Watt		262.91	
1141	Power Panel, 20 Unit, Including GFI		1,575.71	
1142	Supplied Air System (Type C)		9,454.27	
1143	HEPA Vacuum Cleaner, 16 Gallon, Stainless Steel Wet/Dry		1,305.59	
1144	HEPA Vacuum Cleaner, 55 Gallon, Stainless Steel Wet/Dry		2,138.47	
1145	Vacuum Loader, 9-18 Ton Per Hour		79,235.75	
1146	Glove Bag, 7 Ml, 50" X 64"		5.94	
1147	Glove Bag,10 Ml, 44" X 60"		6.22	
1148	Disposable Polyethylene Bags, 6 Ml, 3 C.F.		0.59	
1149	Pressure Sensitive Caution Label s, 3" X 5"		0.12	
1151	Pressure Sensitive Caution Label s, 11" X 17"		0.15	
02097 1200	Air Monitoring & Bulk Sampling/ Testing			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1201	XRP Testing Including Technician And XRP Instrument		54.02	
1202	Lab Technician		200.00	
1203	On-Site Industrial Hygienist		350.00	
1204	TCLP Test (5 Day Turn- Around)		135.06	
1205	TCLP Test (24 Hour Turn -Around)		270.13	
1206	Lead Air Samples (24 Hour Turn - Around)		18.01	
1207	Lead Air Samples (Less Than 24 H our Turn -Around)		36.01	
1208	Wipe Samples (24 Hour Turn - Aro und)		45.02	
1209	Wipe Samples (Less Than 24 Hour Turn -Around)		90.05	
1211	Wipe Samples (Less Than 5-Day Tu rn -Around)		72.03	
1212	Blood Tests		81.04	
1213	Training 3-Day		270.13	
1214	Training 4-Day		360.16	
1215	Medical Exams		135.06	
1216	Disposal (Including Drums)		450.21	
1217	Rental Vacuum Blaster 250 CFM		1,125.00	
1218	Rental Vacuum Blaster 300 CFM		1,350.00	
1401	HEPA Vac & Wet Clean, 6-11' Ceil (Flr, Wall, CIng) Tri-Sodium Ph		0.16	
1402	HEPA Vac & Wet Clean 12-15' Ceil		0.18	
1403	HEPA Vac and Wet Clean >15' Ceil		0.25	
1404	Protect Carpeted Area, 2 Layers 6 Mil Poly		1.15	
1405	Separation Barrier,2"X 4" @ 16", 1/2" Plywood Each Side,8' High		2.94	
1406	Separation Barrier,2"X 4" @ 16", 1/2" Plywood Each Side 12' High		3.32	
1407	Separation Barrier,2"X 4" @ 16", 1/2" Plywood Each Side, 16' High		4.53	
1408	Personnel Decontamination Chambe r		3.79	
1409	Waste Decontamination Chamber		3.72	
02097 1410 Cover Surfaces				
1411	Floors, Each Layer, 6 Mil		0.32	
1412	Floors, Each Layer, 4 Mil		0.30	
1413	Walls, Each Layer, 6 Mil		0.52	
1414	Walls, Each Layer, 4 Mil		0.44	
1415	Seal Wall Penetrations W/Foam Fi restop To 36 Square Inches		5.88	
1416	Seal Wall Penetrations W/Foam Fi restop To 36 To 72 Sq. Inches		9.37	
1417	Seal Wall Penetrations W/Foam Fi restop To 72 To 144 Sq Inches		15.86	
1418	Caulk Seams With Latex		2.79	
02097 1500 Encapsulation				
1501	Balustrades		3.16	
1502	Baseboard To 6" Wide		3.95	
1503	Baseboard To 6" To 12" Wide		5.25	
1504	Brick, Block, Concrete (Spray)		1.90	
1505	Cabinets, Ornate		4.74	
1506	Cabinets, Simple Design		3.79	
1507	Ceilings, Drywall		1.05	
1508	Ceilings, Wood		1.36	
1509	Columns		2.37	
1511	Doors		5.63	
1512	Electrical Conduit Up To 2"		2.12	
1513	Fence, Picket (Brush)		1.26	
1514	Floors, Wood (Roller)		0.99	
1515	Grilles, Vents		3.43	
1516	Gutters And Downspouts		3.16	
1517	Hangers		29.54	
1518	Pipes To 4" Diameter (Brush)		1.90	
1519	Pipes To 8" Diameter (Brush)		2.53	
1521	Pipes To 12" Diameter (Brush)		3.79	
1522	Pipes To 16" Diameter (Brush)		5.57	
1523	Radiators		117.65	
1524	Shutters Up To 6'		117.65	
1525	Siding		1.58	
1526	Soffit, Up To 12"		2.37	
1527	Steel, Flat Surfaces And Tanks U p To 12'		1.90	
1528	Steel Beams (Brush)		2.59	
1529	Trusses		2.59	
1531	Walls, (Roller)		0.95	
1532	Walls, Wood		1.18	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1533	Windows, Double Hung		100.35	
1534	Windows, Colonial		117.65	
1601	Collect And Bag Bulk Material, 3 C.F. Bags, By Hand		9.10	
1602	Collect And Bag Bulk Material, Large Production Vacuum Loader		4.27	
1603	Double Bag And Decontaminate		6.83	
1604	Containerize Bagged Material, Per Bag		6.83	
1605	Cart Bags To Dumpster		1.29	
1609	Handling of Asb Disposal Bags From Site to Truck Or Dumpster		1.29	
02100 Site Preparation & Excavation Support				
02108 Site Clearing				
02109 0009 Clear and grub				
02109 0009 Cut and chip and stump removal				
0010	Clear & grub, cut & chip light trees to 6" dia	ACR	2,191.34	
0152	Clear & grub, cut & chip medium trees, 10" dia	ACR	3,652.23	
0154	Clear & grub, cut & chip heavy trees, 16" dia	ACR	4,382.67	
0155	Clear & grub, cut light stumps to 6" dia	ACR	1,021.94	
0156	Clear & grub, cut medium stumps to 10" dia	ACR	1,703.23	
0158	Clear & grub, cut heavy stumps to 16" dia	ACR	1,703.23	
02109 0374 Grub & stack, track loader				
0380	Clear & grub, grub & stack,	CY	3.31	
02109 0500 Stump Grinding				
0510	Stump Grinding 12" Tree	ACR	661.92	
0515	Stump Grinding 15" Tree	ACR	851.01	
0520	Stump Grinding 18" Tree	ACR	1,191.29	
0525	Stump Grinding 21" Tree	EA	17.74	
0530	Stump Grinding 24" Tree	EA	18.76	
0535	Stump Grinding 27" Tree	EA	20.52	
0540	Stump Grinding 30" Tree	EA	36.60	
0545	Stump Grinding 33" Tree	EA	40.67	
0550	Stump Grinding 36" Tree	EA	43.92	
0555	Stump Grinding 42" Tree	EA	49.91	
0560	Stump Grinding 48" Tree	EA	54.90	
02109 0699 Remove stumps				
0740	Clear & grub, rem stumps, norm condtn, to 6" dia	EA	51.09	
0750	Clear & grub, rem stumps, norm condtn, 6" - 12" diameter	EA	63.88	
0760	Clear & grub, rem stumps, norm condtn, 12" - 24" diameter	EA	85.16	
0770	Clear & grub, rem stumps, norm condtn, 24" - 36" diameter	EA	85.16	
02109 2999 Chipping stumps				
3000	Clear & grub, chipping stumps, to 18" deep, to 12" Dia	EA	53.88	
3010	Clear & grub, chipping stumps, To 18" Deep, >12 to 24" Dia.	EA	94.27	
3020	Clear & grub, chipping stumps, to 18" Deep, >24 to 23" Dia.	EA	143.29	
02109 7000 Tree removal				
7300	Clear & grub, tree rmv, cutting & chipping, to 6" dia	EA	91.31	
7310	Clear & grub, tree rmv, cutting & chipping, 6" - 12" dia	EA	136.96	
7320	Clear & grub, tree rmv, cutting & chipping, 12" - 24" dia	EA	182.61	
7330	Clear & grub, tree rmv, cutting & chipping, 24" - 36" dia	EA	273.92	
02110 0009 Clearing				
02110 1059 Clearing				
1065	Clearing, avg grub & trees	ACR	525.67	
02110 1999 Load spoils				
2000	Clearing, machine load spoils, 2 mi haul to dump	CY	16.32	
2101	For Each Additional Haul Mile, ADD		0.90	
2102	For Each Additional 5 Haul Miles, ADD		4.21	
2103	For Each Additional 10 Haul Miles, ADD		8.17	
2010	Clearing, chute load spoils, 2 mi haul to dump	CY	26.93	
2101	For Each Additional Haul Mile, ADD		0.90	
2102	For Each Additional 5 Haul Miles, ADD		4.21	
2103	For Each Additional 10 Haul Miles, ADD		8.17	
2020	Clearing, hand load spoils, 2 mi haul to dump	CY	32.31	
2101	For Each Additional Haul Mile, ADD		0.90	
2102	For Each Additional 5 Haul Miles, ADD		4.21	
2103	For Each Additional 10 Haul Miles, ADD		8.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2030	Clearing, wheel & ramp load spoils, 2 mi haul to dump	CY	40.39	
2101	For Each Additional Haul Mile, ADD		0.90	
2102	For Each Additional 5 Haul Miles, ADD		4.21	
2103	For Each Additional 10 Haul Miles, ADD		8.17	
02110 3000	Chipping, brush			
3010	Felling trees & piling, chipping, light brush	ACR	973.75	
3020	Felling trees & piling, chipping, medium brush	ACR	1,251.90	
3030	Felling trees & piling, chipping, heavy brush	ACR	2,434.82	

02112 Selective Demolition & Lead Abatement Removal

02112 Selective Demolition

02112 1000 Miscellaneous Removals

Note: All Items Listed Below Are Priced To Include Machine Break-Up And Loading. Demolition Items In This Section Are Assembly Type Of Removal.

02112 1520 Remove And Dispose Of

1521	Remove and Dispose Of Brick Flooring	SF	1.02	
1522	Remove Ceramic/Quarry Tile Floor And Dispose	SF	0.86	
1523	Remove Terrazzo Flooring And Dispose	SF	1.19	
1524	Remove Hvy Wood Flooring	SF	0.70	
1525	Remove Residential Wood Flooring	SF	0.27	
1526	Rem Resilient/Linoleum Flooring	SF	0.27	
1724	Dem Roof Tiles/Shingles, Wood Frame Roof , 2 Layers	SF	0.38	
1725	Dem Roof Tiles/Shingles, Wood Frame Roof , 3 Layers	SF	0.57	
1726	Dem Roof Tiles/Shingles, Wood Frame Roof , 4 Layers	SF	0.68	
1727	Dem Roof Tiles/Shingles, Wood Frame Roof , 5 Layers	SF	0.85	
1728	Dem Roof Tiles/Shingles, Wood Frame Roof , 6 Layers	SF	0.97	

02112 1730 Concrete Deck

1731	Dem Concrete Plank Roofing	SQ	76.45	
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02112 2100 Building Foundations

Note: Price Based On Cubic Yards Of Material

2101	Dem Brick/Stone/Conc Block Bldg Foundation	CF	2.55	
2102	Dem Plain Conc Bldg Foundations	CF	2.58	
2103	Dem Reinf Conc Bldg Foundation	CF	3.40	

02112 2200 Catch Basins Or Manhole

2201	Dem Catch Basin or Manhole Masonry or Concrete, Abandon	EA	135.95	
2202	Dem Masonry Catch Basin/Manhole 5' (1.5M) Deep by 4' (1.2M) Dia	EA	237.91	
2203	Dem Conc Catch Basin or Manhole 5' (1.5M) Deep by 4' (1.2M) Dia	EA	237.91	

02112 2300 Fence Removals - Chain Link

2301	Remove & Reuse Chain Link Fence	LF	1.83	
2302	Remove & Reset Chain Link Fence	LF	11.37	
2303	Dem 3 Strand Barbed Wire Fence	LF	1.43	
2304	Dem 5 Strand Barbed Wire Fence	LF	2.05	
2305	Dem Guardrail	LF	7.17	
2306	Remove and Reset Guardrail	LF	14.34	
2307	Dem of Guardrail Guardposts Only	EA	18.51	

02112 2400 Railroad Trackage

2401	Dem Railroad Track and Ties	LF	5.21	
2402	Remove & Re-Install Tie & Track With New Bolts and Spikes	LF	31.57	
2403	Remove Railroad Track Ballast	CY	3.16	
2404	Remove Railroad Track Turnouts Re-Install w/New Bolts & Spikes	EA	1,578.50	

02112 3100 Concrete Block Partitions

3101	Dem 4" Concrete Block Partition (10cm) Thick	SF	1.29	
3102	Dem 8" Concrete Block Partition (20cm) Thick	SF	1.58	
3103	Dem 12" Conc Block Partition (31cm) Thick	SF	1.77	

02112 3200 Brick Masonry Partitions

3201	Dem 4" to 12" Brick Partition (10cm) to (31cm) Thick	CF	5.84	
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02112 3300 Concrete Partitions Cast In Place

3301	Dem CIP Plain Conc Partition	CF	8.56	
3302	Dem Reinf Concrete Partition	CF	11.67	

02112 3400 Gypsum Or Terracotta Partition And Metal Lath With Plaster

3401	Dem Gyp/Terracotta Ptn to 6"Thk (15cm) Thk Metal Lath w/Plaster	SF	6.25	
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02112 3500 Stud Partitions

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3501	Demo Drywall & Stud Partition Ml/Wood Stud w/Drywall 2 Sides	SF	2.11	
3502	Demo Plaster & Stud Partition Ml Lath & Plaster, Fin 2 Sides	SF	4.20	
3503	Demo Drywall & Stud Partition Ml/Wood Stud w/Drywall 1 Sides	SF	1.66	
3504	Demo Plaster & Stud Partition Ml/Wood Stud, One Side	SF	4.20	
3505	Demo Drywall, Walls, 2 Sides	SF	0.28	
3506	Demo Drywall, Walls, 1 Sides	SF	0.28	
3507	Demo Plaster With Lath, Walls, 2 Sides	SF	0.28	
3509	Demo Plaster With Lath, Walls, 1 Side	SF	0.28	
3511	Demo Metal Partition W Or W0 Glass	SF	0.57	
02112 3550	Door & Frame			
3551	Demo H.M Frame W/ Wood Or Metal Door In Framed Or Block Wall.	EA	11.00	
02112 3600	Remove Existing Electrical			
02112 3610	Remove Lighting Fixtures			
3612	Demo 4' Fluor Lighting Fixtures Gyp Brd Ceiling, Surface Munted		42.22	
02112 3620	Remove Electrical Cabinets			
3622	Demo Fused Disconnect Elec Cab 2 00A Hvy Dty, NEMA 1, Wood Wall		81.19	
3624	Demo Surf Md Fused Disc Cab On Wood Pnlbrd, 30 Pole, NEMA 1		189.99	
02112 3630	Remove Wire And Conduit Wire Removal Based On			
Note: Based on pulling 3#12 from existing 3/4" conduit, bundling and disposal. Conduit removal based on surface mounting RGS of sizes indicated, loading and disposal. Based on LF of conduit. Conduit removal may be without wire.				
3632	Demo Existing Wire From Conduit ,Per LF Of Conduit		1.04	
3634	Demo Conduits With/Without Wire, 1/2" to 1" (1.27cm) to (2.54cm)		0.76	
3636	Demo Conduits With/Without Wire, 1-1/4" to 2" (3.1cm) to (5.1cm)		0.95	
02112 3700	Plumbing And Hvac Demolition			
02112 3710	Fixtures			
3712	Demo Wall Hung Lavatory		42.36	
3714	Demo Floor Mtd Water Closet		54.47	
3716	Demo Wall Munted Urinal		63.55	
3718	Demo Recessed Or Surface Md Wat er Fountain Or Cooler.		63.55	
02112 3720	Piping, Metal			
3722	Demo Metal Pipe to 2"(5cm)D		1.91	
3724	Demo Metal Pipe to 4"(10cm)D		3.18	
3726	Demo Metal Pipe to 8"(20cm)D		7.12	
3728	Demo Metal Pipe to 16"(41cm)		14.26	
02112 3730	Hvac Demolition			
Note: Air conditioning demlition includes furnace, codensing unit, associated piping and appurtances.				
3732	Demo Up To 5 Ton Air Conditioner , Incl Furnace, Cond Unit & Pip		405.79	
3734	Demo Gas/Oil Boiler Over 150,000 BTU Per Hour		553.19	
3736	Demo 4"x 8" HVAC Ductwork (10cm) x (20cm)		2.18	
3738	Demo 6"x 8" HVAC Ductwork (15cm) x (20cm)		2.73	
3742	Demo 10"x 12" HVAC Ductwork (25c m) x (30cm)		3.82	
3744	Demo 14"x 16" HVAC Ductwork (36c m) x (41cm)		7.63	
02112 4000	Cut-Outs Includes Saw Cutting			
02112 4100	Concrete			
4101	Conc Cutouts, < 6 CF w/Lt Reinf Int Elevated Slabs (<.17MB)	CF	17.13	
4109	For Reinforced Concrete, Add		3.43	
4102	Conc Cutouts, > 6 CF w/Lt Reinf Int Elevated Slabs (>.17MB)	CF	14.27	
4109	For Reinforced Concrete, Add		2.85	
4103	Conc Cutouts, < 6 CF w/Bar Reinf Int Elevated Slabs (<.17MB)	CF	25.69	
4109	For Reinforced Concrete, Add		5.14	
4104	Conc Cutouts, > 6 CF w/Bar Reinf Int Elevated Slabs (>.17MB)	CF	21.41	
4109	For Reinforced Concrete, Add		4.28	
4105	Conc Cutouts, < 6 CF w/Bar Reinf Interior Walls (<.17MB)	CF	21.41	
4109	For Reinforced Concrete, Add		4.28	
4106	Conc Cutouts, > 6 CF w/Bar Reinf Interior Walls (>.17 MB)	CF	19.76	
4109	For Reinforced Concrete, Add		3.95	
4111	2" Thick Concrete Cutouts	SF	8.67	
4109	For Reinforced Concrete, Add		1.73	
4112	4" Thick Concrete Cutouts	SF	10.62	
4109	For Reinforced Concrete, Add		2.12	
4113	6" Thick Concrete Cutouts	SF	11.25	
4109	For Reinforced Concrete, Add		2.25	
4114	8" Thick Concrete Cutouts	SF	11.88	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4109	For Reinforced Concrete, Add		2.38	
4115	10" Thick Concrete Cutouts	SF	12.52	
4109	For Reinforced Concrete, Add		2.50	
4116	12" Thick Concrete Cutouts	SF	12.85	
4109	For Reinforced Concrete, Add		2.57	
02112 4200	Brick Walls			
Note: Not Including Toothing				
4201	Brick Wall Cutouts, 4"(10cm) Thk Up to 4 SF (.37M ²) Opening	EA	42.81	
4501	For Toothing, Add		6.42	
4202	Brick Wall Cutouts, 8"(20cm) Thk Up to 4 SF (.37M ²) Opening	EA	58.38	
4501	For Toothing, Add		8.76	
4203	Brick Wall Cutouts, 12"(31cm)Thk Up to 4 SF (.37M ²) Opening	EA	85.63	
4501	For Toothing, Add		12.84	
4204	Brick Cutouts, 4"(10cm) Thk, > 4 Sf	SF	10.60	
4501	For Toothing, Add		1.59	
4205	Brick Cutouts, 8"(20cm) Thk, > 4 Sf	SF	14.76	
4501	For Toothing, Add		2.21	
4206	Brick Cutouts, 10"(26cm)Thk, > 4 Sf	SF	17.99	
4501	For Toothing, Add		2.70	
4207	Brick Cutouts, 12"(31cm)Thk, > 4 Sf	SF	21.51	
4501	For Toothing, Add		3.23	
02112 4300	Concrete Block Walls			
Note: Not Including Toothing				
4301	4" Conc Block Wall Cutouts (10cm), < 4 Sf	EA	42.81	
4501	For Toothing, Add		6.42	
4302	8" Conc Block Wall Cutouts (20cm), < 4 Sf	EA	47.56	
4501	For Toothing, Add		7.13	
4303	12" Conc Block Wall Cutouts (31cm) < 4 Sf	EA	51.37	
4501	For Toothing, Add		7.71	
4304	4" Conc Block Cutouts, > 4 Sf	SF	10.62	
4501	For Toothing, Add		1.59	
4305	6" Conc Block Cutouts, > 4 Sf	SF	11.25	
4501	For Toothing, Add		1.69	
4306	8" Conc Block Cutouts, > 4 Sf	SF	11.88	
4501	For Toothing, Add		1.78	
4307	10" Conc Block Cutouts, > 4 Sf	SF	12.52	
4501	For Toothing, Add		1.88	
4308	12" Conc Block Cutouts, > 4 Sf	SF	12.85	
4501	For Toothing, Add		1.93	
02112 4400	Limestone			
4411	2" Limestone Cutouts	SF	8.99	
4412	4" Limestone Cutouts	SF	10.95	
4413	6" Limestone Cutouts	SF	11.57	
4414	8" Limestone Cutouts	SF	12.20	
4415	10" Limestone Cutouts	SF	12.85	
4416	12" Limestone Cutouts	SF	13.16	
02112 4500	Tooothing Masonry Cutouts			
4501	Tooothing Masonry Cutouts, Stone	VLF	8.67	
4502	Tooothing Masonry Cutouts, Brick, Glazed Tile	VLF	6.42	
4504	Tooothing Masonry Cutouts, Block	VLF	5.14	
02112 9000	Rubbish Hauling of all Selective Demolition items to Dumpsite.			
02112 9100	Hauling Selective Demoliton			
Note: Includes Time for Travel and Dump. Assumes average Speed Varies with Distance. Choose Production Based on Distance. Production is Based on Loose Cubic Yards. Distance is round trip distance.				
02112 9110	8 CY (6 MB) Capacity Truck			
9111	Haul to Dump, 8 CY (6 MB) Trk, 1 M (2 Km), 20 MPH (30 Km/Hr).	CY	1.54	
9141	For Each Additional 1 Mle, Add		0.13	
9142	For Each Additional 5 Mle, Add		0.64	
9143	For Each Additional 10 Mle, Add		1.27	
9144	For Each Additional 15 Mle, Add		1.90	
9145	For Each Additional 20 Mle, Add		2.39	
9146	For Each Additional 25 Mle, Add		3.18	
9147	For Each Additional 30 Mle, Add		3.81	
9148	For Each Additional 35 Mle, Add		4.45	
9149	For Each Additional 40 Mle, Add		5.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9112	Haul to Dump, 8 CY (6 MB) Trk, 3 Mi (5 Km), 30 MPH (45 Km/Hr)	CY	3.06	
9141	For Each Additional 1 Mile, Add		0.25	
9142	For Each Additional 5 Mile, Add		1.26	
9143	For Each Additional 10 Mile, Add		2.52	
9144	For Each Additional 15 Mile, Add		3.77	
9145	For Each Additional 20 Mile, Add		4.74	
9146	For Each Additional 25 Mile, Add		6.31	
9147	For Each Additional 30 Mile, Add		7.57	
9148	For Each Additional 35 Mile, Add		8.84	
9149	For Each Additional 40 Mile, Add		10.10	
9113	Haul to Dump, 8 CY (6 MB) Trk, 6 Mi (10 Km), 40 MPH (60 Km/Hr)	CY	3.82	
9141	For Each Additional 1 Mile, Add		0.32	
9142	For Each Additional 5 Mile, Add		1.58	
9143	For Each Additional 10 Mile, Add		3.15	
9144	For Each Additional 15 Mile, Add		4.71	
9145	For Each Additional 20 Mile, Add		5.92	
9146	For Each Additional 25 Mile, Add		7.88	
9147	For Each Additional 30 Mile, Add		9.45	
9148	For Each Additional 35 Mile, Add		11.03	
9149	For Each Additional 40 Mile, Add		12.61	
9114	Haul to Dump, 8 CY (6 MB) Trk, 12 Mi (20 Km), 40 MPH (60Km/Hr)	CY	7.66	
9141	For Each Additional 1 Mile, Add		0.63	
9142	For Each Additional 5 Mile, Add		3.16	
9143	For Each Additional 10 Mile, Add		6.32	
9144	For Each Additional 15 Mile, Add		9.44	
9145	For Each Additional 20 Mile, Add		11.87	
9146	For Each Additional 25 Mile, Add		15.80	
9147	For Each Additional 30 Mile, Add		18.96	
9148	For Each Additional 35 Mile, Add		22.12	
9149	For Each Additional 40 Mile, Add		25.28	
9115	Haul to Dump, 8 CY (6 MB) Trk, 24 Mi (40 Km), 50 MPH (75Km/Hr)	CY	13.02	
9141	For Each Additional 1 Mile, Add		1.07	
9142	For Each Additional 5 Mile, Add		5.37	
9143	For Each Additional 10 Mile, Add		10.74	
9144	For Each Additional 15 Mile, Add		16.05	
9145	For Each Additional 20 Mile, Add		20.18	
9146	For Each Additional 25 Mile, Add		26.85	
9147	For Each Additional 30 Mile, Add		32.22	
9148	For Each Additional 35 Mile, Add		37.60	
9149	For Each Additional 40 Mile, Add		42.97	
02112 9120 12 CY (9 MB) Capacity Truck				
9121	Haul to Dump, 12 CY (9 MB) Trk, 1 Mi (2 Km), 20 MPH (30 Km/Hr)	CY	0.92	
9151	For Each Additional 1 Mile, Add		0.08	
9152	For Each Additional 5 Mile, Add		0.38	
9153	For Each Additional 10 Mile, Add		0.76	
9154	For Each Additional 15 Mile, Add		1.13	
9155	For Each Additional 20 Mile, Add		1.43	
9156	For Each Additional 25 Mile, Add		1.90	
9157	For Each Additional 30 Mile, Add		2.28	
9158	For Each Additional 35 Mile, Add		2.66	
9159	For Each Additional 40 Mile, Add		3.04	
9122	Haul to Dump, 12 CY (9 MB) Trk, 3 Mi (5 Km), 30 MPH (45 Km/Hr)	CY	1.84	
9151	For Each Additional 1 Mile, Add		0.15	
9152	For Each Additional 5 Mile, Add		0.76	
9153	For Each Additional 10 Mile, Add		1.52	
9154	For Each Additional 15 Mile, Add		2.27	
9155	For Each Additional 20 Mile, Add		2.85	
9156	For Each Additional 25 Mile, Add		3.80	
9157	For Each Additional 30 Mile, Add		4.55	
9158	For Each Additional 35 Mile, Add		5.31	
9159	For Each Additional 40 Mile, Add		6.07	
9123	Haul to Dump, 12 CY (9 MB) Trk, 6 Mi (10 Km), 40 MPH (60 Km/Hr)	CY	2.30	
9151	For Each Additional 1 Mile, Add		0.19	
9152	For Each Additional 5 Mile, Add		0.95	
9153	For Each Additional 10 Mile, Add		1.90	
9154	For Each Additional 15 Mile, Add		2.83	
9155	For Each Additional 20 Mile, Add		3.57	
9156	For Each Additional 25 Mile, Add		4.74	
9157	For Each Additional 30 Mile, Add		5.69	
9158	For Each Additional 35 Mile, Add		6.64	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9159	For Each Additional 40 Mile, Add		7.59	
9124	Haul to Dump, 12 CY (9 MB) Trk, 12 Mi (20 Km), 40 MPH (60Km/Hr)	CY	5.37	
9151	For Each Additional 1 Mile, Add		0.44	
9152	For Each Additional 5 Mile, Add		2.22	
9153	For Each Additional 10 Mile, Add		4.43	
9154	For Each Additional 15 Mile, Add		6.62	
9155	For Each Additional 20 Mile, Add		8.32	
9156	For Each Additional 25 Mile, Add		11.08	
9157	For Each Additional 30 Mile, Add		13.29	
9158	For Each Additional 35 Mile, Add		15.51	
9159	For Each Additional 40 Mile, Add		17.72	
9125	Haul to Dump, 12 CY (9 MB) Trk, 24 Mi (40 Km), 50 MPH (75Km/Hr)	CY	8.43	
9151	For Each Additional 1 Mile, Add		0.70	
9152	For Each Additional 5 Mile, Add		3.48	
9153	For Each Additional 10 Mile, Add		6.95	
9154	For Each Additional 15 Mile, Add		10.39	
9155	For Each Additional 20 Mile, Add		13.07	
9156	For Each Additional 25 Mile, Add		17.39	
9157	For Each Additional 30 Mile, Add		20.86	
9158	For Each Additional 35 Mile, Add		24.34	
9159	For Each Additional 40 Mile, Add		27.82	
02112 9130 16.5CY (12.6 MB) Capacity Truck				
9131	Haul to Dump, 16.5CY(12.6MB) Trk, 1 Mi (2 Km), 20 MPH (30 Km/Hr)	CY	0.67	
9161	For Each Additional 1 Mile, Add		0.06	
9162	For Each Additional 5 Mile, Add		0.28	
9163	For Each Additional 10 Mile, Add		0.55	
9164	For Each Additional 15 Mile, Add		0.83	
9165	For Each Additional 20 Mile, Add		1.04	
9166	For Each Additional 25 Mile, Add		1.38	
9167	For Each Additional 30 Mile, Add		1.66	
9168	For Each Additional 35 Mile, Add		1.93	
9169	For Each Additional 40 Mile, Add		2.21	
9132	Haul to Dump, 16.5CY(12.6MB) Trk, 3 Mi (5 Km), 30 MPH (45 Km/Hr)	CY	1.33	
9161	For Each Additional 1 Mile, Add		0.11	
9162	For Each Additional 5 Mile, Add		0.55	
9163	For Each Additional 10 Mile, Add		1.10	
9164	For Each Additional 15 Mile, Add		1.64	
9165	For Each Additional 20 Mile, Add		2.06	
9166	For Each Additional 25 Mile, Add		2.74	
9167	For Each Additional 30 Mile, Add		3.29	
9168	For Each Additional 35 Mile, Add		3.84	
9169	For Each Additional 40 Mile, Add		4.39	
9133	Haul to Dump, 16.5CY(12.6MB) Trk, 6 Mi (10 Km), 40 MPH (60 Km/Hr)	CY	1.67	
9161	For Each Additional 1 Mile, Add		0.14	
9162	For Each Additional 5 Mile, Add		0.69	
9163	For Each Additional 10 Mile, Add		1.38	
9164	For Each Additional 15 Mile, Add		2.06	
9165	For Each Additional 20 Mile, Add		2.59	
9166	For Each Additional 25 Mile, Add		3.44	
9167	For Each Additional 30 Mile, Add		4.13	
9168	For Each Additional 35 Mile, Add		4.82	
9169	For Each Additional 40 Mile, Add		5.51	
9134	Haul to Dump, 16.5CY(12.6MB) Trk, 12 Mi (20 Km), 40 MPH (60Km/Hr)	CY	4.16	
9161	For Each Additional 1 Mile, Add		0.34	
9162	For Each Additional 5 Mile, Add		1.72	
9163	For Each Additional 10 Mile, Add		3.43	
9164	For Each Additional 15 Mile, Add		5.13	
9165	For Each Additional 20 Mile, Add		6.45	
9166	For Each Additional 25 Mile, Add		8.58	
9167	For Each Additional 30 Mile, Add		10.30	
9168	For Each Additional 35 Mile, Add		12.01	
9169	For Each Additional 40 Mile, Add		13.73	
9135	Haul to Dump, 16.5CY(12.6MB) Trk, 24 Mi (40 Km), 50 MPH (75Km/Hr)	CY	6.67	
9161	For Each Additional 1 Mile, Add		0.55	
9162	For Each Additional 5 Mile, Add		2.75	
9163	For Each Additional 10 Mile, Add		5.50	
9164	For Each Additional 15 Mile, Add		8.22	
9165	For Each Additional 20 Mile, Add		10.34	
9166	For Each Additional 25 Mile, Add		13.76	
9167	For Each Additional 30 Mile, Add		16.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9168	For Each Additional 35 Mle, Add		19.26	
9169	For Each Additional 40 Mle, Add		22.01	
02112 9200	Landfill Dump Fees Applies For All Demolition Items.			
9201	Dump Fee, Traditional Materials And Rubbish	CY	4.17	
9202	Dump Fee, Trees, Stumps And Brush	CY	7.24	
02114	Lead Abatement Removal			
NOTE: Work To Be Performed By A Certified Lead Paint Abatement Removal Worker.				
02114 1000	Lead Abatement Removal			
02114 1100	Preparatory Abatement And Post Abatement General Requirements			
02114 1110	Equipment And Materials			
Note: Add Items That Are Consumed Only.				
1111	Chemical Suits	EA	125.00	
1112	Chemical Gloves	PR	12.50	
1113	Chemical Boots	PR	20.83	
1114	Face Guard	EA	20.83	
1115	Respirators, 1/2 Face	EA	13.33	
1117	Respirators, Papr Full Face	EA	374.99	
1119	Supplied Air Full Face, Including Air Line	EA	354.16	
1122	Personnel Sampling Pump	EA	437.49	
1124	Worker Protection, Whole Body, Foot And Head Cover, Gloves	EA	9.17	
1125	Respirators, Single Use	EA	10.00	
1126	Cartridge For Respirator	EA	2.50	
1127	Chemical Stripper Paste And Paper	GAL	12.50	
1128	Drums, 55 Gallon	GAL	62.50	
1129	Sink And Filter	EA	416.66	
1131	Polyethylene, 6-Mil, 20' X 100'	RL	41.67	
1132	Tape, 2" Presurre Sensitive	RL	3.75	
1133	Decontamination Pool	EA	83.33	
1134	Chemical Stripper Neutralizer	GAL	29.17	
1135	Adhesive Sprayer Neutralizer	EA	4.17	
1136	Air Sampling Pump	EA	483.32	
1138	Airless Sprayer Unit, 2 Gun	EA	3,666.58	
1139	Light Stand, 500 Watt	EA	243.33	
1141	Power Panel, 20 Unit, Including GFI	EA	1,458.30	
1142	Supplied Air System (Type C)	EA	8,749.80	
1143	HEPA Vacuum Cleaner, 16 Gallon, Stainless Steel Wet/Dry	EA	1,208.31	
1144	HEPA Vacuum Cleaner, 55 Gallon, Stainless Steel Wet/Dry	EA	1,979.12	
1145	Vacuum Loader, 9-18 Ton Per Hour	EA	73,331.69	
1146	Glove Bag, 7 Ml, 50" X 64"	EA	5.50	
1147	Glove Bag, 10 Ml, 44" X 60"	EA	5.75	
1148	Disposable Polyethylene Bags, 6 Ml, 3 C.F.	EA	0.55	
1149	Pressure Sensitive Caution Labels, 3" X 5"	EA	0.11	
1151	Pressure Sensitive Caution Labels, 11" X 17"	EA	0.14	
02114 1200	Air Mnitoring & Bulk Sampling/ Testing			
1201	XRP Testing Including Technician And XRP Instrument	HR	50.00	
1202	Lab Technician	DAY	200.00	
1203	On-Site Industrial Hygienist	DAY	350.00	
1204	TCLP Test (5 Day Turn- Around)	EA	125.00	
1205	TCLP Test (24 Hour Turn -Around)	EA	249.99	
1206	Lead Air Samples (24 Hour Turn -Around)	EA	16.67	
1207	Lead Air Samples (Less Than 24 Hour Turn -Around)	EA	33.33	
1208	Wipe Samples (24 Hour Turn - Around)	EA	41.67	
1209	Wipe Samples (Less Than 24 Hour Turn -Around)	EA	83.33	
1211	Wipe Samples (Less Than 5-Day Turn -Around)	SF	66.67	
1212	Blood Tests	EA	75.00	
1213	Training 3-Day	EA	249.99	
1214	Training 4-Day	EA	333.33	
1215	Medical Exams	EA	125.00	
1216	Disposal (Including Drums)	BBL	416.66	
1217	Rental Vacuum Blaster 250 CFM	MD	1,125.00	
1218	Rental Vacuum Blaster 300 CFM	MD	1,350.00	
02114 1300	Chemical Stripping			
1301	Balustrades, Simple	SF	16.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1302	Balustrades, Ornate	SF	24.15	
1303	Baseboard To 6" Wide	LF	6.82	
1304	Baseboard To 6" To 12" Wide	LF	14.27	
1305	Brick, Block, Concrete	SF	5.44	
1306	Cabinets, Ornate	SF	17.30	
1307	Cabinets, Simple Design	SF	13.48	
1308	Ceilings, All	SF	6.16	
1309	Columns	SF	5.79	
1311	Cornice, Simple	SF	7.22	
1312	Cornice, Ornate	SF	21.47	
1313	Doors, One Side Flush	SF	5.16	
1314	Doors, One Panel	SF	5.40	
1315	Doors, Four Panel	SF	9.58	
1316	Doors, Trim One Side	LF	6.74	
1317	Electrical Devices	EA	71.56	
1318	Electrical Conduit Up To 2"	LF	2.87	
1319	Fence, Picket	SF	14.44	
1321	Floors, Wood	SF	3.50	
1322	Grilles, Simple	SF	14.44	
1323	Grilles, Ornate	SF	17.30	
1324	Hinges	EA	8.65	
1325	Hangers, Up To 6" Size	EA	10.81	
1326	Pipes To 4" Diameter (Brush)	LF	4.81	
1327	Pipes To 8" Diameter (Brush)	LF	8.65	
1328	Pipes To 12" Diameter (Brush)	LF	11.95	
1329	Pipes To 16" Diameter (Brush)	LF	21.62	
1331	Radiators, Up To 12 SF	EA	429.19	
1332	Shutters Front And Back Louvered, Up To 6'	EA	210.73	
1333	Shutters Flat	EA	105.38	
1334	Siding	SF	4.81	
1335	Soffit, Up To 12"	SF	10.81	
1336	Steel, Flat Surfaces And Tanks Up To 12'	SF	4.73	
1337	Steel Beams	SF	5.42	
1338	Trusses	SF	7.86	
1339	Walls, Wood	SF	5.42	
1341	Windows, Double Hung, One Side, 1/1 Light, 24" X 48"	EA	105.38	
1342	Windows, Double Hung, One Side, 1/1 Light, 30" X 60"	EA	144.89	
1343	Windows, Double Hung, One Side, 1/1 Light, 36" X 72"	EA	172.99	
1344	Windows, Double Hung, One Side, 1/1 Light, 40" X 80"	EA	210.73	
1345	Windows, Colonial, One Side, 6/6 Light, 24" X 48"	EA	210.73	
1346	Windows, Colonial, One Side, 6/6 Light, 30" X 60"	EA	288.25	
1347	Windows, Colonial, One Side, 6/6 Light, 36" X 72"	EA	429.19	
1348	Windows, Colonial, One Side, 6/6 Light, 40" X 80"	EA	429.19	
1349	Windows, Colonial, One Side, 8/8 Light, 24" X 48"	EA	210.73	
1351	Windows, Colonial, One Side, 8/8 Light, 40" X 80"	EA	429.19	
1352	Windows, Colonial, One Side, 12/12 Light, 24" X 48"	EA	429.19	
1353	Windows, Colonial, One Side, 12/12 Light, 40" X 80"	EA	579.57	
02114 1400 Demolition				
02114 1400 Msc. Items				
1401	HEPA Vac & Wet Clean, 6-11' Ceil (Flr, Wall, Cing) Tri-Sodium Ph	SF	0.14	
1402	HEPA Vac & Wet Clean 12-14' Ceil	SF	0.16	
1403	HEPA Vac and Wet Clean >14' Ceil	SF	0.23	
1404	Protect Carpeted Area, 2 Layers 6 Mil Poly	SF	0.99	
1405	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side, 8' High	SF	2.64	
1406	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side 12' High	SF	2.96	
1407	Separation Barrier, 2"X 4" @ 16", 1/2" Plywood Each Side, 16' High	SF	3.99	
1408	Personnel Decontamination Chamber	SF	3.50	
1409	Waste Decontamination Chamber	SF	3.44	
02114 1410 Cover Surfaces				
1411	Floors, Each Layer, 6 Mil	SF	0.28	
1451	For Heights 12' To 20', Add		0.04	
1452	For Heights Above 20', Add		0.06	
1453	For Fire Retardant Poly, Add		0.04	
1454	For Large Open Areas, Deduct		-0.05	
1412	Floors, Each Layer, 4 Mil	SF	0.25	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1451	For Heights 12' To 20', Add		0.04	
1452	For Heights Above 20', Add		0.06	
1453	For Fire Retardant Poly, Add		0.02	
1454	For Large Open Areas, Deduct		-0.05	
1413	Walls, Each Layer, 6 Mil	SF	0.45	
1451	For Heights 12' To 20', Add		0.08	
1452	For Heights Above 20', Add		0.11	
1453	For Fire Retardant Poly, Add		0.04	
1454	For Large Open Areas, Deduct		-0.10	
1414	Walls, Each Layer, 4 Mil	SF	0.37	
1451	For Heights 12' To 20', Add		0.07	
1452	For Heights Above 20', Add		0.10	
1453	For Fire Retardant Poly, Add		0.02	
1454	For Large Open Areas, Deduct		-0.08	
1415	Seal Wall Penetrations W/Foam Firestop To 36 Square Inches	EA	5.03	
1416	Seal Wall Penetrations W/Foam Firestop To 36 To 72 Sq. Inches	EA	8.03	
1417	Seal Wall Penetrations W/Foam Firestop To 72 To 144 Sq Inches	EA	13.65	
1418	Caulk Seams With Latex	LF	2.39	
02114 1420 Demolition In Lead Contaminated Area				
1421	Ceiling Including Suspension System, Plaster, Lath	SF	1.36	
1422	Finished Plaster, Leaving Wire Lath	SF	4.88	
1423	Suspended Acoustical Tile	SF	8.13	
1424	Splined Tile Grid System	SF	0.95	
1425	Metal Pan Grid System	SF	1.91	
1426	Gypsum Board	SF	1.14	
1427	Light Fixtures, Up To 2' X 4'	EA	39.69	
1428	Light Fixtures, Over 2' X 4'	EA	56.26	
1429	Partitions Non-Load Bearing, Plaster, Lath and Studs	SF	4.13	
1431	Partitions Non-Load Bearing, Gypsum Board And Studs	SF	2.06	
02114 1500 Encapsulation				
1501	Balustrades	SF	2.68	
1502	Baseboard To 6" Wide	LF	3.36	
1503	Baseboard To 6" To 12" Wide	LF	4.46	
1504	Brick, Block, Concrete (Spray)	SF	1.61	
1505	Cabinets, Ornate	SF	4.02	
1506	Cabinets, Simple Design	SF	3.22	
1507	Ceilings, Drywall	SF	0.89	
1508	Ceilings, Wood	SF	1.15	
1509	Columns	SF	2.02	
1511	Doors	SF	4.78	
1512	Electrical Conduit Up To 2"	LF	1.80	
1513	Fence, Picket (Brush)	SF	1.07	
1514	Floors, Wood (Roller)	SF	0.84	
1515	Grilles, Vents	SF	2.92	
1516	Gutters And Downspouts	LF	2.68	
1517	Hangers	EA	25.09	
1518	Pipes To 4" Diameter (Brush)	LF	1.61	
1519	Pipes To 8" Diameter (Brush)	LF	2.14	
1521	Pipes To 12" Diameter (Brush)	LF	3.22	
1522	Pipes To 16" Diameter (Brush)	LF	4.73	
1523	Radiators	EA	99.93	
1524	Shutters Up To 6'	EA	99.93	
1525	Siding	SF	1.34	
1526	Soffit, Up To 12"	SF	2.02	
1527	Steel, Flat Surfaces And Tanks Up To 12'	SF	1.61	
1528	Steel Beams (Brush)	SF	2.20	
1529	Trusses	SF	2.20	
1531	Walls, (Roller)	SF	0.80	
1532	Walls, Wood	SF	1.01	
1533	Windows, Double Hung	EA	85.23	
1534	Windows, Colonial	EA	99.93	
02114 1600 Waste Packing, Handling, & Disposal				
1601	Collect And Bag Bulk Material, 3 C.F. Bags, By Hand	EA	7.72	
1602	Collect And Bag Bulk Material, Large Production Vacuum Loader	EA	3.62	
1603	Double Bag And Decontaminate	EA	5.79	
1604	Containerize Bagged Material, Per Bag	EA	5.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1605	Cart Bags To Dumpster	EA	1.09	
1609	Handling of Asb Disposal Bags From Site to Truck Or Dumpster	EA	1.09	
1611	Landfill Disposal/Ton	TON	174.13	
1612	Landfill Disposal/CY	CY	34.83	
02114 1700 Removal Of Existing Lead Paint By Chemicals,				
Note: Including Disposal And Refinishing With 2 Coats of Paint.				
1701	Baseboard To 6" Wide	LF	1.36	
1702	Baseboard To 12" Wide	LF	2.15	
1703	Balustrades, One Sided	SF	3.06	
1704	Cabinets, Simple Design	SF	3.57	
1705	Cabinets, Complex Complex	SF	7.01	
1706	Cornice, Simple Design	SF	4.13	
1707	Cornice, Complex Design	SF	8.14	
1708	Doors, One Side, Flush	SF	2.43	
1709	Doors, Two Panel	SF	2.71	
1711	Doors, Four Panel	SF	3.03	
1712	Door Trim One Side	LF	1.36	
1713	Picket Fence, One Side	SF	3.57	
1714	Grilles, One Side, Simple Design	SF	3.00	
1715	Grilles, One Side,Complex Design	SF	6.15	
1716	Pipes, Up To 4"	LF	1.29	
1717	Pipes, >4" to 8"	LF	2.86	
1718	Pipes, >8" to 12"	LF	4.13	
1719	Pipes, >12" to 16"	LF	6.27	
1721	Pipe Hangers	EA	3.14	
1722	Siding	SF	1.86	
1723	Trusses, Open	SF	3.57	
1724	24"x48"Windows,One Side, Dbl Hung 1/1 Light	EA	26.25	
1725	30"x60"Windows,One Side, Dbl Hung 1/1 Light	EA	33.88	
1726	36"x72"Windows,One Side, Dbl Hung 1/1 Light	EA	40.27	
1727	40"x80"Windows,One Side, Dbl Hung 1/1 Light	EA	55.09	
1728	24"x48"Windows,One Side, Dbl Hung 6/6 Light	EA	41.57	
1729	30"x60"Windows,One Side, Dbl Hung 6/6 Light	EA	62.73	
1731	36"x72"Windows,One Side, Dbl Hung 6/6 Light	EA	84.35	
1732	40"x80"Windows,One Side, Dbl Hung 6/6 Light	EA	101.31	
1733	24"x48"Windows,One Side, Dbl Hung 8/8 Light	EA	49.44	
1734	40"x80"Windows,One Side, Dbl Hung 8/8 Light	EA	124.56	
1735	24"x48"Windows,One Side, Dbl Hung 12/12 Light	EA	2.84	
1736	40"x80"Windows,One Side, Dbl Hung 12/12 Light	EA	2.84	
1737	Window Trim	LF	2.84	
02114 1800 Removal Of Existing Lead Paint and Disposal.				
NOTE: Includes Sealing Of The Work Area, Protective Clothing, Specialized Equipment, Final Clean-up, Testing, Industrial Hygienist, And Proper Disposal At An Approved Landfill.				
1801	Removal From Wood Surfaces	SF	12.03	
1802	Removal From Concrete, Masonry, Or Stucco Surfaces	SF	12.83	
1803	Removal From Steel Surfaces	SF	12.28	
1804	Removal From Plaster Walls	SF	10.51	
02115 Selective Clearing				
02116 0010 Selective Clearing				
02116 1100 Tree Trimming For Pole Line Construction And Maintenance.				
Note: 1. Area To Be Vertical Cleared (To Include Over Hanging Limbs) Is Mnum 20' Wide (10' Each Side Of Structure) And 16' Above ground. All Materials to 6" Dia. To Be Chipped In Place. Larger Material May Be Chipped Or Disposed. 2. Trees Greater Than 18" Dia. Use Individual Tree Removal Line Items.				
1200	Selective clearing, light cutting, pole line constr, tree	LF	0.84	
1300	Selective clearing, medium cutting, pole line constr, tree	LF	1.27	
1405	Selective clearing, heavy cutting, pole line constr, tree	LF	1.49	
02118 Selective Mech Demolition				
02118 3000 HVAC Demolition				
3001	HVAC dml, air conditioner, split unit, 3 ton	EA	35.48	
3002	HVAC dml, air conditioner, packa ge unit, 3 ton	EA	36.26	
3003	HVAC dml, boiler, electric	EA	47.53	
3004	HVAC dml, boiler, gas or oil, st eel, under 150 MBH	EA	36.26	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3005	HVAC dml, boiler, gas or oil, ov er 150 MBH	EA	54.39	
3006	HVAC dml, ductwork, 4" high, 8" wide	LF	0.14	
3007	Hvac demo, ductwork, 4" high, 10 " wide	LF	0.15	
3008	Hvac demo, ductwork, 4" high, 14 " wide	LF	0.16	
3009	HVAC dml, ductwork, 6" high, 8" wide	LF	0.17	
3010	Hvac demo, ductwork, 6" high, 12 " wide	LF	0.19	
3011	Hvac demo, ductwork, 6" high, 18 " wide	LF	0.21	
3012	HVAC dml, ductwork, 10" high, 12 " wide	LF	0.23	
3013	Hvac demo, ductwork, 10" high, 1 8" wide	LF	0.25	
3014	Hvac demo, ductwork, 10" high, 2 4" wide	LF	0.26	
3015	HVAC dml, ductwork, 12"-14" high , 16"-18 wide	LF	0.33	
3016	Hvac demo, ductwork, 12" high, 2 4" wide	LF	0.38	
3017	Hvac demo, ductwork, 12" high, 4 8" wide	LF	0.40	
3018	Hvac demo, ductwork, 18" high, 2 4" wide	LF	0.42	
3019	Hvac demo, ductwork, 18" high, 3 6" wide	LF	0.45	
3020	Hvac demo, ductwork, 18" high, 4 8" wide	LF	0.48	
3021	Hvac demo, ductwork, 30" high, 3 6" wide	LF	0.50	
3022	Hvac demo, ductwork, 30" high, 4 8" wide	LF	0.53	
3023	Hvac demo, ductwork, 30" high, 7 2" wide	LF	0.56	
3024	Hvac demo, duct heater, electric strip	EA	4.43	
3025	Hvac demo, furnace, electric	EA	43.41	
3026	Hvac demo, furnace, gas or oil, under 120 MBH	EA	17.27	
3027	Hvac demo, furnace, gas or oil, over 120 MBH	EA	23.03	
3028	Hvac demo, heat pump, package un it, 3 ton	EA	29.57	
3029	Hvac demo, heat pump, split unit , 3 ton	EA	35.48	
3030	Hvac demo, mechanical equipment, light items per unit weight.	TON	78.84	
3031	Hvac demo, mechanical equipment, heavy items	TON	64.51	
3032	mech equip, deduct for salvage (when applicable), minimum	JOB		
3033	Hvac demo, mech equip, deduct fo r salvage (when applicable), ma	JOB		
02118 6000	Plumbing Demolition			
6001	Plumbing demo, fixtures, w/ 10' pipe, bath tubs, cast iron	EA	9.46	
6002	fixtures, including 10' piping, bath tubs, fiberglass	EA	6.30	
6003	Plumbing demo, fixtures, w/10' p iple, bath tubs, steel	EA	7.56	
6004	Plumbing dml, fixtures w/10' pip e, lavatory, wall hung	EA	3.78	
6005	fixtures, including 10' piping, lavatory, counter top	EA	4.73	
6006	Plumbing demo, sink, cast iron o r steel, single piping	EA	4.73	
6007	sink, cast iron or steel, doubl e piping, incl 10' piping	EA	5.40	
6008	Plumbing dml, fixtures w/10' pip e, water closet, floor mounted	EA	4.73	
6009	Plumbing demo, fixtures, w/10' p iple, water closet, wall mounted	EA	5.40	
6010	Plumbing dml, fixtures w/10' pip e, urinal, floor mounted	EA	9.46	
6011	Plumbing dml, fixtures w/10' pip e, urinal, wall mounted	EA	5.40	
6012	Plumbing dml, fixtures w/10' pip e, water fountains, free stand	EA	4.73	
6013	Plumbing dml, fixtures w/10' pip e, water fountains, recessed	EA	6.30	
6014	Plumbing dml, piping, metal, to 2" dia	LF	0.19	
6015	Plumbing dml, piping, metal, to 4" dia	LF	0.25	
6016	Plumbing dml, piping, metal, to 8" dia	LF	0.76	
6017	Plumbing dml, piping, metal, to 16" dia	LF	1.26	
6018	Plumbing demo, water heater, 40 gal	EA	6.30	
6019	Plumbing demo, remove and reset fixtures, minimum	EA	6.30	
6020	Plumbing demo, remove and reset fixtures, maximum	EA	9.46	
02119 3000	Pipe Hangers And Supports			
3001	brkts, bm side or wall, M, 3/8 " thrded rod size	EA	3.51	
3002	brkts, bm side or wall, M, 1/2 " thrded rod size	EA	6.02	
3003	brkts, bm side or wall, M, 5/8 " thrded rod size	EA	7.74	
3004	brkts, bm side or wall, M, 3/4 " thrded rod size	EA	8.22	
3005	brkts, bm side or wall, M, 7/8 " thrded rod size	EA	10.34	
3006	brkts, wall, welded st, 0 size, 12" wide, 18" D	EA	199.47	
3007	brkts, wall, welded st, 1 size, 18" wide 24" D	EA	236.59	
3008	brkts, wall, welded st, 2 size, 24" wide, 30" D	EA	312.97	
3009	C-clamp, for mtg on stl beam fl g, w/lknt 3/8" thd rod	EA	2.38	
3010	C-clamp, for mtg on stl beam fl g, w/lknt 1/2" thd rod	EA	2.81	
3011	C-clamp, for mtg on stl beam fl g, w/lknt 5/8" thd rod	EA	3.91	
3012	C-clamp, for mtg on stl beam fl g, w/lknt 3/4" thd rod	EA	5.54	
3013	clamps, hi temp to 1050<F, allo y st, 4" pipe size	EA	33.69	
3014	clamps, hi temp to 1050<F, allo y st, 6" pipe size	EA	55.97	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3015	clamps, hi temp to 1050<F, allo y st, 8" pipe size	EA	62.93	
3016	clamps, hi temp to 1050<F, allo y st, 10" pipe size	EA	85.34	
3017	clamps, hi temp to 1050<F, allo y st, 12" pipe size	EA	99.31	
3018	clamps, hi temp to 1050<F, allo y st, 14" pipe size	EA	233.64	
3019	clamps, hi temp to 1050<F, allo y st, 16" pipe size	EA	269.90	
3020	Pipe hgrs & sprts, CLP, i-beam strap iron, 2" flg size	EA	4.34	
3021	Pipe hgrs & sprts, CLP, i-beam strap iron, 3" flg size	EA	4.47	
3022	Pipe hgrs & sprts, CLP, i-beam strap iron, 4" flg size	EA	4.58	
3023	Pipe hgrs & sprts, CLP, i-beam strap iron, 5" flg size	EA	4.74	
3024	Pipe hgrs & sprts, CLP, i-beam strap iron, 6" flg size	EA	4.84	
3025	Pipe hgrs & sprts, CLP, i-beam strap iron, 7" flg size	EA	5.00	
3026	Pipe hgrs & sprts, CLP, i-beam strap iron, 8" flg size	EA	5.17	
3027	clamps, one hole, vert mntg, M , 1/2" pipe size	EA	0.99	
3028	clamps, one hole, vert mntg, M , 3/4" pipe size	EA	1.19	
3029	clamps, one hole, vert mntg, M , 1" pipe size	EA	1.69	
3030	clamps, one hole, vert mntg, M , 1-1/4" pipe size	EA	2.06	
3031	clamps, one hole, vert mntg, M , 1-1/2" pipe size	EA	2.30	
3032	clamps, one hole, vert mntg, M , 2" pipe size	EA	3.33	
3033	clamps, one hole, vert mntg, M , 2-1/2" pipe size	EA	8.53	
3034	clamps, one hole, vert mntg, M , 3" pipe size	EA	11.69	
3035	clamps, one hole, vert mntg, M , 3-1/2" pipe size	EA	17.92	
3036	clamps, one hole, vert mntg, M , 4" pipe size	EA	27.50	
3037	Pipe hanger, clamps, riser or ex t pipe, CS, 3/4" pipe	EA	3.56	
3038	Pipe hanger, clamps, riser or ex t pipe, CS, 1" pipe	EA	3.59	
3039	Pipe hanger, clamps, riser or ex t pipe, CS, 1.25"pipe	EA	4.33	
3040	Pipe hanger, clamps, riser or ex t pipe, CS, 1.5"pipe	EA	4.62	
3041	Pipe hanger, clamps, riser or ex t pipe, CS, 2" pipe	EA	4.72	
3042	clamps, R or extn pipe, CS, 2-1 /2" pipe size	EA	4.95	
3043	Pipe hanger, clamps, riser or ex t pipe, CS, 3" pipe	EA	5.25	
3044	clamps, R or extn pipe, CS, 3-1 /2" pipe size	EA	6.27	
3045	Pipe hanger, clamps, riser or ex t pipe, CS, 4" pipe	EA	6.41	
3046	Pipe hanger, clamps, riser or ex t pipe, CS, 5" pipe	EA	8.92	
3047	Pipe hanger, clamps, riser or ex t pipe, CS, 6" pipe	EA	10.12	
3048	Pipe hanger, clamps, riser or ex t pipe, CS, 8" pipe	EA	15.80	
3049	Pipe hanger, clamps, riser or ex t pipe, CS, 10" pipe	EA	25.05	
3050	Pipe hanger, clamps, riser or ex t pipe, CS, 12" pipe	EA	29.99	
3051	clamps, two PC, compl, CS, med wt, 1/2" pipe size	EA	2.55	
3052	clamps, two PC, compl, CS, med wt, 3/4" pipe size	EA	2.57	
3053	clamps, two PC, compl, CS, med wt, 1" pipe size	EA	2.68	
3054	CLP, two PC, compl, CS, med wt, 1-1/4" pipe size	EA	3.50	
3055	CLP, two PC, compl, CS, med wt, 1-1/2" pipe size	EA	3.52	
3056	clamps, two PC, compl, CS, med wt, 2" pipe size	EA	3.72	
3057	CLP, two PC, compl, CS, med wt, 2-1/2" pipe size	EA	3.91	
3058	clamps, two PC, compl, CS, med wt, 3" pipe size	EA	4.34	
3059	CLP, two PC, compl, CS, med wt, 3-1/2" pipe size	EA	5.71	
3060	clamps, two PC, compl, CS, med wt, 4" pipe size	EA	5.73	
3061	clamps, two PC, compl, CS, med wt, 5" pipe size	EA	8.92	
3062	clamps, two PC, compl, CS, med wt, 6" pipe size	EA	13.23	
3063	clamps, two PC, compl, CS, med wt, 8" pipe size	EA	15.70	
3064	clamps, two PC, compl, CS, med wt, 10" pipe size	EA	33.24	
3065	clamps, two PC, compl, CS, med wt, 12" pipe size	EA	38.62	
3066	clamps, two PC, compl, CS, med wt, 14" pipe size	EA	66.28	
3067	clamps, two PC, compl, CS, med wt, 16" pipe size	EA	71.80	
3068	insr, conc, WG type, CS body, 1 /4" thrdded rod size	EA	5.43	
3069	insr, conc, WG type, CS body, 3 /8" thrdded rod size	EA	5.68	
3070	insr, conc, WG type, CS body, 1 /2" thrdded rod size	EA	5.85	
3071	insr, conc, WG type, CS body, 5 /8" thrdded rod size	EA	5.96	
3072	insr, conc, WG type, CS body, 3 /4" thrdded rod size	EA	6.49	
3073	insr, conc, WG type, CS body, 7 /8" thrdded rod size	EA	7.50	
3074	Pipe hgrs & sprts, insr, conc, WG type, CS body, for galv, add	EA	1.14	
3075	gde sized for insul, no. 1, 1" pipe size, 1" thk insul	EA	117.08	
3076	Pipe hgrs & sprts,gde,no. 2,1-1/ 4"-2" pipe size,1" thk insul	EA	127.88	
3077	Pipe hgrs & sprts,gde,no. 3,1-1/ 4"-2" pipe size,1-1/2" thk insu	EA	131.21	
3078	gde,no. 4,2-1/2"-3-1/2" pipe siz e,1-1/2" thk insul	EA	137.87	
3079	Pipe hgrs & sprts,gde,no. 5,4"-5 " pipe size,1-1/2" thk insul	EA	160.41	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3080	gde sized for insul, no. 6, 5"-6" pipe size, 2" thk insul	EA	177.34	
3081	gde sized for insul, no. 7, 8" pipe size, 2" thk insul	EA	197.49	
3082	gde sized for insul, no. 8, 10" pipe size, 2" thk insul	EA	345.35	
3083	gde sized for insul, no. 9, 12" pipe size, 2" thk insul	EA	531.46	
3084	Pipe hgrs & sprts, gde, no. 10, 12" -14" pipe size, 2-1/2" thk insul	EA	653.85	
3085	Pipe hgrs & sprts, gde, no. 11, 16" pipe size, 2-1/2" thk insul	EA	800.61	
3086	Pipe hgrs & sprts, gde, no. 12, 16" -18" pipe size, 3" thk insul	EA	855.38	
3087	gde sized for insul, no. 13, 20" pipe size, 3" thk insul	EA	910.82	
3088	gde sized for insul, no. 14, 24" pipe size, 3" thk insul	EA	1,155.83	
3089	Pipe hanger, adj band, CS, for non-insul pipe, 1/2" pipe	EA	1.47	
3090	Pipe hanger, adj band, CS, for non-insul pipe, 3/4" pipe	EA	1.48	
3091	Pipe hanger, adj band, CS, for non-insul pipe, 1" pipe	EA	1.61	
3092	Pipe hanger, adj band, CS, for non-insul pipe, 1.25" pipe	EA	1.67	
3093	Pipe hanger, adj band, CS, for non-insul pipe, 1.5" pipe	EA	1.81	
3094	Pipe hanger, adj band, CS, for non-insul pipe, 2" pipe	EA	2.25	
3095	Pipe hanger, adj band, CS, for non-insul pipe, 2.5" pipe	EA	2.36	
3096	Pipe hanger, adj band, CS, for non-insul pipe, 3" pipe	EA	2.57	
3097	adj band, CS, for non-insul pipe, 3-1/2" pipe size	EA	3.62	
3098	Pipe hanger, adj band, CS, for non-insul pipe, 4" pipe	EA	3.65	
3099	adj band, CS, for non-insul pipe, 5" pipe size	EA	3.93	
3100	adj band, CS, for non-insul pipe, 6" pipe size	EA	5.03	
3101	adj band, CS, for non-insul pipe, 8" pipe size	EA	7.45	
3102	adj nut M, st band, 1/2" pipe size, galv band	EA	1.14	
3103	adj nut M, st band, 3/4" pipe size, galv band	EA	1.16	
3104	adj nut M, st band, 1" pipe size, gavanized band	EA	1.17	
3105	adj nut M, st band, 1-1/4" pipe size, galv band	EA	1.23	
3106	adj nut M, st band, 1-1/2" pipe size, galv band	EA	1.25	
3107	bnd, adj nut M, st band, 2" pipe size, galv band	EA	1.29	
3108	adj nut M, st band, 2-1/2" pipe size, galv band	EA	1.86	
3109	bnd, adj nut M, st band, 3" pipe size, galv band	EA	1.97	
3110	adj nut M, st band, 3-1/2" pipe size, galv band	EA	2.29	
3111	adj nut M, st band, 4" pipe size, cadmium pld band	EA	3.07	
3112	adj nut M, st band, 5" pipe size, cadmium pld band	EA	3.93	
3113	adj nut M, st band, 6" pipe size, cadmium pld band	EA	4.31	
3114	adj nut M, st band, 8" pipe size, cadmium pld band	EA	4.77	
3115	bnd, clv, adj, CS, for non-insul pipe, 1/2" pipe size	EA	1.09	
3116	Pipe hanger, clevis, adj, CS, for non-insul pipe, 3/4" pipe	EA	1.50	
3117	Pipe hanger, clevis, adj, CS, for non-insul pipe, 1" pipe	EA	1.56	
3118	bnd, clv, adj, CS, for non-insul pipe, 1-1/4" pipe	EA	1.69	
3119	bnd, clv, adj, CS, for non-insul pipe, 1-1/2" pipe	EA	1.82	
3120	Pipe hanger, clevis, adj, CS, for non-insul pipe, 2" pipe	EA	1.94	
3121	bnd, clv, adj, CS, for non-insul pipe, 2-1/2" pipe	EA	2.75	
3122	Pipe hanger, clevis, adj, CS, for non-insul pipe, 3" pipe	EA	3.30	
3123	bnd, clv, adj, CS, for non-insul pipe, 3-1/2" pipe	EA	3.43	
3124	Pipe hanger, clevis, adj, CS, for non-insul pipe, 4" pipe	EA	3.87	
3125	bnd, clv, adj, CS, for non-insul pipe, 5" pipe size	EA	5.08	
3126	Pipe hanger, clevis, adj, CS, for non-insul pipe, 6" pipe	EA	5.74	
3127	Pipe hanger, clevis, adj, CS, for non-insul pipe, 8" pipe	EA	8.96	
3128	Pipe hanger, clevis, adj, CS, for non-insul pipe, 10" pipe	EA	22.64	
3129	Pipe hanger, clevis, adj, CS, for non-insul pipe, 12" pipe	EA	28.54	
3130	Pipe hanger, clevis, adj, CS, for non-insul pipe, 14" pipe	EA	43.47	
3131	Pipe hanger, clevis, adj, CS, for non-insul pipe, 16" pipe	EA	61.19	
3132	Pipe hanger, split ring, M, for non-insul pipe, 1/2" pipe	EA	3.58	
3133	Pipe hanger, split ring, M, for non-insul pipe, 3/4" pipe	EA	3.62	
3134	Pipe hanger, split ring, M, for non-insul pipe, 1" pipe	EA	3.80	
3135	Pipe hanger, split ring, M, for non-insul pipe, 1.25" pipe	EA	4.57	
3136	Pipe hanger, split ring, M, for non-insul pipe, 1.5" pipe	EA	5.43	
3137	Pipe hanger, split ring, M, for non-insul pipe, 2" pipe	EA	6.10	
3138	Pipe hanger, split ring, M, for non-insul pipe, 2.5" pipe	EA	8.51	
3139	Pipe hanger, split ring, M, for non-insul pipe, 3" pipe	EA	10.44	
3140	bnd, splt ring, M, for non-insul pipe, 3-1/2" pipe	EA	14.22	
3141	Pipe hanger, split ring, M, for non-insul pipe, 4" pipe	EA	14.24	
3142	bnd, splt ring, M, for non-insul pipe, 5" pipe size	EA	31.04	
3143	bnd, splt ring, M, for non-insul pipe, 6" pipe size	EA	31.05	
3144	bnd, splt ring, M, for non-insul pipe, 8" pipe size	EA	53.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3145	Rods, carbon steel, continuous t hread, 1/4" thread size	LF	0.72	
3146	Rods, carbon steel, continuous t hread, 3/8" thread size	LF	1.50	
3147	Rods, carbon steel, continuous t hread, 1/2" thread size	LF	1.04	
3148	Rods, carbon steel, continuous t hread, 5/8" thread size	LF	2.64	
3149	Rods, carbon steel, continuous t hread, 3/4" thread size	LF	2.24	
3150	Rods, carbon steel, continuous t hread, 7/8" thread size	LF	4.20	
3151	carbon steel, continuous thread , 1/4" thread size, bright finis	LF	1.15	
3152	carbon steel, continuous thread , 1/2" thread size, bright finis	LF	2.41	
3153	rods, CS, both ends mach thrded 18" lg, 3/8" thd size	EA	3.77	
3154	rods, CS, both ends mach thrded 18" lg, 1/2" thd size	EA	5.99	
3155	rods, CS, both ends mach thrded 18" lg, 5/8" thd size	EA	8.49	
3156	rods, CS, both ends mach thrded 18" lg, 3/4" thd size	EA	12.89	
3157	rods, CS, both ends mach thrded 18" lg, 7/8" thd size	EA	23.50	
3158	rods, CS, both ends mach thrded 18" lg, 1" thd size	EA	31.98	
3159	rolls, adj clevis, saddle, rod, clamp,1/2" pipe size	EA	24.31	
3160	rolls, adj clevis, saddle, rod, clamp,1" pipe size	EA	29.10	
3161	rolls, adj clevis, saddle, rod, clamp,2" pipe size	EA	32.89	
3162	rolls, adj clevis, saddle, rod, clamp,3" pipe size	EA	47.89	
3163	rolls, adj clevis, saddle, rod, clamp,4" pipe size	EA	51.10	
3164	rolls, adj clevis, saddle, rod, clamp,6" pipe size	EA	63.90	
3165	rolls, adj clevis, saddle, rod, clamp,8" pipe size	EA	102.77	
3166	rolls, adj clevis, saddle, rod, clamp,10" pipe size	EA	135.41	
3167	rolls, adj clevis, saddle, rod, clamp,12" pipe size	EA	151.56	
3168	rolls, adj yoke, CS W CI roll, 2-1/2" pipe size	EA	12.45	
3169	Pipe hanger, rolls, adj yoke, CS w/CI roll, 3" pipe	EA	13.86	
3170	rolls, adj yoke, CS W CI roll, 3-1/2" pipe size	EA	18.25	
3171	Pipe hanger, rolls, adj yoke, CS w/CI roll, 4" pipe	EA	18.50	
3172	rolls, adj yoke, CS with CI rol l, 5" pipe size	EA	21.61	
3173	Pipe hanger, rolls, adj yoke, CS w/CI roll, 6" pipe	EA	26.81	
3174	Pipe hanger, rolls, adj yoke, CS w/CI roll, 8" pipe	EA	39.61	
3175	Pipe hanger, rolls, adj yoke, CS w/CI roll, 10" pipe	EA	47.21	
3176	Pipe hanger, rolls, adj yoke, CS w/CI roll, 12" pipe	EA	68.62	
3177	Pipe hanger, rolls, adj yoke, CS w/CI roll, 14" pipe	EA	182.92	
3178	Pipe hanger, rolls, adj yoke, CS w/CI roll, 16" pipe	EA	128.01	
3179	rolls, chair, CS with CI roll, 2" pipe size	EA	16.58	
3180	rolls, chair, CS with CI roll, 2-1/2" pipe size	EA	17.92	
3181	rolls, chair, CS with CI roll, 3" pipe size	EA	19.39	
3182	rolls, chair, CS with CI roll, 3-1/2" pipe size	EA	23.44	
3183	rolls, chair, CS with CI roll, 4" pipe size	EA	26.11	
3184	rolls, chair, CS with CI roll, 5" pipe size	EA	28.26	
3185	rolls, chair, CS with CI roll, 6" pipe size	EA	38.90	
3186	rolls, chair, CS with CI roll, 8" pipe size	EA	52.74	
3187	rolls, chair, CS with CI roll, 10" pipe size	EA	66.03	
3188	rolls, chair, CS with CI roll, 12" pipe size	EA	95.23	
3189	Pipe hanger, single pipe roll, T YPE 41, 1" pipe	EA	9.64	
3190	single pipe roll, (see line 265 0 for rods), 1-1/4" pipe	EA	9.67	
3191	Pipe hanger, single pipe roll, 1.5" pipe	EA	9.78	
3192	Pipe hanger, single pipe roll, 2 " pipe	EA	10.29	
3193	Pipe hanger, single pipe roll, 2.5" pipe	EA	11.02	
3194	Pipe hanger, single pipe roll, 3 " pipe	EA	11.61	
3195	single pipe roll, (see line 265 0 for rods), 3-1/2" pipe	EA	13.44	
3196	Pipe hanger, single pipe roll, 4 " pipe	EA	14.60	
3197	single pipe roll, (see line 265 0 for rods), 5" pipe size	EA	16.10	
3198	Pipe hanger, single pipe roll, 6 " pipe	EA	20.73	
3199	Pipe hanger, single pipe roll, 8 " pipe	EA	31.71	
3200	Pipe hanger, single pipe roll, 10" pipe	EA	35.54	
3201	single pipe roll, (see line 265 0 for rods), 12" pipe size	EA	51.65	
3202	single pipe roll, (see line 265 0 for rods), 14" pipe size	EA	84.80	
3203	single pipe roll, (see line 265 0 for rods), 16" pipe size	EA	114.22	
3204	single pipe roll, (see line 265 0 for rods), 18" pipe size	EA	123.06	
3205	single pipe roll, (see line 265 0 for rods), 20" pipe size	EA	168.98	
3206	single pipe roll, (see line 265 0 for rods), 24" pipe size	EA	264.85	
3207	single pipe roll, (see line 265 0 for rods), 30" pipe size	EA	523.18	
3208	single pipe roll, (see line 265 0 for rods), 36" pipe size	EA	539.94	
3209	Pipe support, CI saddle, adjustable, 2.5" pipe	EA	135.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3210	Pipe support, CI saddle, adjustable, 3" pipe	EA	137.27	
3211	sdl (add vert pipe R, usually 3" dia), 3-1/2" pipe	EA	138.38	
3212	Pipe support, CI saddle, adjustable, 4" pipe	EA	178.76	
3213	sdl (add vert pipe R, usually 3" dia), 5" pipe size	EA	185.16	
3214	Pipe support, CI saddle, adjustable, 6" pipe	EA	185.21	
3215	Pipe support, CI saddle, adjustable, 8" pipe	EA	195.89	
3216	Pipe support, CI saddle, adjustable, 10" pipe	EA	216.09	
3217	Pipe support, CI saddle, adjustable, 12" pipe	EA	236.27	
3218	sdl (add vert pipe riser), mult pipe sprt 2' L strut	EA	5.93	
3219	sdl (add vert pipe riser), mult pipe sprt 3' L strut	EA	8.89	
3220	sdl (add vert pipe riser), mult pipe sprt 4' L strut	EA	11.56	
3221	Pipe support, insulation shield, 1" thk, 1/2" pipe, TYPE 40	EA	6.24	
3222	Pipe hgrs & sprts, sdl, insul s hld, 1" thk, 3/4" pipe size	EA	6.24	
3223	Pipe support, insulation shield, 1" thk, 1" pipe	EA	7.03	
3224	Pipe hgrs & sprts, sdl, insul s hld, 1" thk, 1-1/4" pipe size	EA	7.67	
3225	Pipe support, insulation shield, 1" thk, 1.5" pipe	EA	7.73	
3226	Pipe support, insulation shield, 1" thk, 2" pipe	EA	8.10	
3227	Pipe hgrs & sprts, sdl, insul s hld, 1" thk, 2-1/2" pipe size	EA	8.48	
3228	Pipe support, insulation shield, 1" thk, 3" pipe	EA	8.86	
3229	Pipe support, insulation shield, 2" thk, 3.5" pipe	EA	12.05	
3230	Pipe hgrs & sprts, sdl, insul s hld, 2" thk, 4" pipe size	EA	12.05	
3231	Pipe hgrs & sprts, sdl, insul s hld, 2" thk, 5" pipe size	EA	17.94	
3232	Pipe support, insulation shield, 2" thk, 6" pipe	EA	20.16	
3233	Pipe support, insulation shield, 2" thk, 8" pipe	EA	30.09	
3234	Pipe support, insulation shield, 2" thk, 10" pipe	EA	44.41	
3235	Pipe hgrs & sprts, sdl, insul s hld, 2" thk, 12" pipe size	EA	50.79	
3236	Pipe support, insulation shield, 2" thk, 14" pipe	EA	50.79	
3237	Pipe hgrs & sprts, sdl, insul s hld, 2" thk, 16" pipe size	EA	68.30	
3238	Pipe support, insulation shield, 2" thk, 18" pipe	EA	68.30	
3239	Pipe support, insulation shield, 2" thk, 20" pipe	EA	75.73	
3240	Pipe support, insulation shield, 2" thk, 24" pipe	EA	90.06	
3241	Pipe support, insulation shield, 2" thk, 30" pipe	EA	98.03	
3242	Pipe hgrs & sprts, sdl, insul s hld, 2" thk, 36" pipe size	EA	107.59	
3243	Pipe insulation protection saddle, 1" covering size, 3/4" pipe	EA	10.64	
3244	Pipe insulation protection saddle, 1" covering size, 1" pipe	EA	10.64	
3245	Pipe insulation protection saddle, 1" covering size, 1.25" pipe	EA	10.64	
3246	Pipe insulation protection saddle, 1" covering size, 1.5" pipe	EA	11.55	
3247	Pipe insulation protection saddle, 1" covering size, 2" pipe	EA	11.55	
3248	Pipe insulation protection saddle, 1" covering size, 2.5" pipe	EA	11.57	
3249	Pipe insulation protection saddle, 1" covering size, 3" pipe	EA	16.34	
3250	Pipe hgrs & sprts, sdl, covering prot sdl, 3-1/2" pipe size	EA	18.32	
3251	Pipe insulation protection saddle, 1" covering size, 4" pipe	EA	17.42	
3252	Pipe hgrs & sprts, sdl, covering prot sdl, 5" pipe size	EA	18.34	
3253	Pipe hgrs & sprts, sdl, covering prot sdl, 6" pipe size	EA	21.74	
3254	Pipe hgrs & sprts, sdl, covering prot sdl, 3/4" pipe size	EA	13.18	
3255	Pipe hgrs & sprts, sdl, covering prot sdl, 1" pipe size	EA	13.18	
3256	Pipe hgrs & sprts, sdl, covering prot sdl, 1-1/4" pipe size	EA	13.18	
3257	Pipe insulation protection saddle, 1.5" covering size, 1.5" pipe	EA	13.19	
3258	Pipe insulation protection saddle, 1.5" covering size, 2" pipe	EA	14.25	
3259	Pipe insulation protection saddle, 1.5" covering size, 2.5" pipe	EA	16.71	
3260	Pipe insulation protection saddle, 1.5" covering size, 3" pipe	EA	16.71	
3261	Pipe hgrs & sprts, sdl, covering prot sdl, 3-1/2" pipe size	EA	16.95	
3262	Pipe insulation protection saddle, 1.5" covering size, 4" pipe	EA	16.95	
3263	Pipe hgrs & sprts, sdl, covering prot sdl, 5" pipe size	EA	16.97	
3264	Pipe insulation protection saddle, 1.5" covering size, 6" pipe	EA	23.97	
3265	Pipe insulation protection saddle, 1.5" covering size, 8" pipe	EA	30.35	
3266	Pipe insulation protection saddle, 2" covering size, 10" pipe	EA	33.53	
3267	Pipe insulation protection saddle, 2" covering size, 12" pipe	EA	48.94	
3268	Pipe insulation protection saddle, 2" covering size, 14" pipe	EA	48.94	
3269	Pipe insulation protection saddle, 2" covering size, 16" pipe	EA	68.59	
3270	Pipe hgrs & sprts, sdl, covering prot sdl, 18" pipe size	EA	68.59	
3271	Pipe hgrs & sprts, sdl, covering prot sdl, 20" pipe size	EA	76.04	
3272	Pipe hgrs & sprts, sdl, covering prot sdl, 24" pipe size	EA	88.80	
3273	Pipe hgrs & sprts, sdl, covering prot sdl, 30" pipe size	EA	97.85	
3274	Pipe hgrs & sprts, sdl, covering prot sdl, 36" pipe size	EA	107.97	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3275	sockets, rod end, M, 1/4" thre ad size	EA	1.14	
3276	Pipe hangers & supports, sockets , rod end, M, 3/8" thread size	EA	1.74	
3277	Pipe hangers & supports, sockets , rod end, M, 1/2" thread size	EA	2.06	
3278	Pipe hangers & supports, sockets , rod end, M, 5/8" thread size	EA	3.90	
3279	Pipe hangers & supports, sockets , rod end, M, 3/4" thread size	EA	6.27	
3280	Pipe hangers & supports, sockets , rod end, M, 7/8" thread size	EA	12.11	
3281	Pipe hangers & supports, strap, 1/2" pipe, TYPE 26	EA	2.85	
3282	Pipe hangers & supports, strap, 3/4" pipe	EA	2.90	
3283	Pipe hangers & supports, strap, 1" pipe	EA	2.96	
3284	Pipe hangers & supports, strap, 1.25" pipe	EA	3.27	
3285	Pipe hangers & supports, strap, 1.5" pipe	EA	3.95	
3286	Pipe hangers & supports, strap, 2" pipe	EA	4.05	
3287	Pipe hangers & supports, strap, 2.5" pipe	EA	6.62	
3288	Pipe hangers & supports, strap, 3" pipe	EA	7.22	
3289	Pipe hangers and supports, strap , 3-1/2" pipe size	EA	12.18	
3290	Pipe hangers and supports, strap , 4" pipe size	EA	13.64	
3291	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1/2" pipe	EA	1.29	
3292	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 3/4" pipe	EA	1.29	
3293	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1" pipe	EA	1.40	
3294	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1.25" pipe	EA	1.52	
3295	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1.5" pipe	EA	1.58	
3296	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 2" pipe	EA	1.63	
3297	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 2.5" pipe	EA	2.17	
3298	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 3" pipe	EA	3.79	
3299	U-bolt, CS, std, with nuts, 3-1 /2" pipe size	EA	4.03	
3300	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 4" pipe	EA	4.08	
3301	U-bolt, CS, standard, with nuts , 5" pipe size	EA	4.05	
3302	U-bolt, CS, standard, with nuts , 6" pipe size	EA	4.33	
3303	U-bolt, CS, standard, with nuts , 8" pipe size	EA	5.12	
3304	U-bolt, CS, std, with nuts, 10" pipe size	EA	8.73	
3305	U-bolt, CS, std, with nuts, 12" pipe size	EA	11.07	
3306	Pipe hgrs & sprts, u-hook, CS, 3 /4" thru 2" pipe size, 6" L	EA	1.27	
3307	Pipe hgrs & sprts, u-hook, CS, 3 /4" thru 2" pipe size, 8" L	EA	1.58	
3308	Pipe hgrs & sprts, u-hook, CS, 3 /4" thru 2" pipe size, 10" L	EA	1.71	
3309	Pipe hgrs & sprts, u-hook, CS, 3 /4" thru 2" pipe size, 12" L	EA	1.95	
3310	Pipe hangers and supports, pipe clamp, plastic, 1/2 CTS	EA	0.67	
3311	Pipe hangers and supports, pipe clamp, plastic, 3/4" CTS	EA	0.73	
3312	Pipe hangers and supports, pipe clamp, plastic, 1" CTS	EA	1.05	
3313	Pipe hangers and supports, pipe clamp, economy clamp, 1/4" CTS	EA	0.27	
3314	Pipe hangers and supports, pipe clamp, economy clamp, 3/8" CTS	EA	0.29	
3315	Pipe hangers and supports, pipe clamp, economy clamp, 1/2" CTS	EA	0.30	
3316	Pipe hangers and supports, pipe clamp, economy clamp, 3/4" CTS	EA	0.39	
3317	Pipe hangers and supports, pipe clamp, half clamp, 1/2" CTS	EA	0.65	
3318	Pipe hangers and supports, pipe clamp, half clamp, 3/4" CTS	EA	0.71	
3319	pipe clamp, suspension clamp, 1 /2" CTS	EA	0.67	
3320	pipe clamp, suspension clamp, 3 /4" CTS	EA	0.73	
3321	Pipe hangers and supports, pipe clamp, suspension clamp, 1" CTS	EA	1.15	
3322	Pipe hangers and supports, pipe clamp, insulator, 1/2" CTS	EA	0.82	
3323	Pipe hangers and supports, pipe clamp, insulator, 3/4" CTS	EA	0.88	
3324	Pipe hangers and supports, pipe clamp, insulator, 1" CTS	EA	0.94	
02120 8000	Vibration Absorbers			
8001	Vibration absorbers, hangers, ne oprene flex, 10-120 lb. capacit	EA	9.60	
8002	Vibration absorbers, hangers, ne oprene flex, 75-550 lb capacity	EA	14.32	
8003	hangers, neoprene flex, 250-110 0 lb capacity	EA	26.52	
8004	hangers, neoprene flex, 1000-40 00 lb. capacity	EA	59.40	
8005	Vibration absorbers, hangers, sp ring flex, 60 lb. capacity	EA	16.76	
8006	Vibration absorbers, hangers, sp ring flex, 450 lb. capacity	EA	23.87	
8007	Vibration absorbers, hangers, sp ring flex, 900 lb. capacity	EA	23.87	
8008	hangers, spring flex, 1100-1300 lb. capacity	EA	27.58	
8009	Vibration absorbers, mounts, neo prene, 135-380 lbcapacity	EA	8.01	
8010	Vibration absorbers, mounts, neo prene, 250-1100 lbcapacity	EA	23.87	
8011	Vibration absorbers, mounts, neo prene, 1000-4000 lbcapacity	EA	53.57	
8012	Vibration absorbers, mounts, spr ing flex, 60 lbcapacity	EA	32.35	
8013	Vibration absorbers, mounts, spr ing flex, 165 lbcapacity	EA	32.35	
8014	Vibration absorbers, mounts, spr ing flex, 260 lb. capacity	EA	32.35	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8015	Vibration absorbers, mounts, spring flex, 450 lb. capacity	EA	42.43	
8016	Vibration absorbers, mounts, spring flex, 600 lb. capacity	EA	42.43	
8017	Vibration absorbers, mounts, spring flex, 750 lb. capacity	EA	42.43	
8018	Vibration absorbers, mounts, spring flex, 900 lb. capacity	EA	42.43	
8019	Vibration absorbers, mounts, spring flex, 1100 lb capacity	EA	47.20	
8020	Vibration absorbers, mounts, spring flex, 1300 lb. capacity	EA	47.20	
8021	Vibration absorbers, mounts, spring flex, 1500 lb. capacity	EA	68.95	
8022	Vibration absorbers, mounts, spring flex, 1800 lb. capacity	EA	68.95	
8023	Vibration absorbers, mounts, spring flex, 2200 lb. capacity	EA	76.37	
8024	Vibration absorbers, mounts, spring flex, 2600 lb. capacity	EA	78.49	
8025	Vibration absorbers, pads, cork rib, 18" x 18" x 1", 10-50 psi	EA	88.57	
8026	Vibration absorbers, pads, cork rib, 18" x 36" x 1", 10-50 psi	EA	177.14	
8027	pads, shear flex pads, 18"x18"x 3/8", 20-70 psi	EA	41.90	
8028	pads, shear flex pads, 18"x36"x 3/8", 20-70 psi	EA	82.74	

02121 Selective Electrical Demolition

02121 3000 Electrical Demolition

3001	conduit to 15' high, rigid galv steel, 1/2" to 1" dia	LF	0.15	
3002	conduit to 15' high, rigid galv steel, 1.25" to 2"	LF	0.18	
3003	Electrical demo, conduit to 15' high galv, 2" to 4" diam	LF	0.23	
3004	Electrical demo, conduit to 15' high, galv, 4" to 6" diam	LF	0.44	
3005	conduit to 15' high, elec mtlc tubing, 1/2" to 1"	LF	0.09	
3006	conduit to 15' high, elec mtlc tubing, 1-1/4" to 1-1/2"	LF	0.11	
3007	Electrical demo, conduit to 15' high, elec mtlc tubing, 2" to 3"	LF	0.15	
3008	conduit to 15' high, elec mtlc tubing, 3-1/2" to 4"	LF	0.23	
3009	Electrical demo, armored cable (BX), #14, 2 wire	LF	0.05	
3010	Electrical demo, armored cable (BX), #14, 3 wire	LF	0.06	
3011	Electrical demo, armored cable (BX), #12, 2 wire	LF	0.06	
3012	Electrical demo, armored cable (BX), #12, 3 wire	LF	0.07	
3013	Electrical demo, armored cable (BX), #10, 2 wire	LF	0.07	
3014	Electrical demo, armored cable (BX), #10, 3 wire	LF	0.08	
3015	Electrical demo, armored cable (BX), #8, 3 wire	LF	0.10	
3016	non-metallic sheathed cable (Ro mex), #14, 2 wire	LF	0.05	
3017	non-metallic sheathed cable (Ro mex), #14, 3 wire	LF	0.05	
3018	non-metallic sheathed cable (Ro mex), #12, 2 wire	LF	0.06	
3019	non-metallic sheathed cable (Ro mex), #10, 3 wire	LF	0.08	
3020	Electrical demo, wiremold raceway, NO 3000	LF	0.14	
3021	Electrical demo, wiremold raceway, NO 4000	LF	0.16	
3022	Electrical demo, wiremold raceway, NO 6000	LF	0.21	
3023	chans, steel, incl ftngs and hg rs, 3/4" x 1-1/2"	LF	0.12	
3024	chans, steel, incl ftngs and hg rs, 1-1/2" x 1-1/2"	LF	0.13	
3025	chans, steel, incl ftngs and hg rs, 1-1/2" x 1-7/8"	LF	0.16	
3026	copper bus duct incl removal of hg rs & sprts, 225 amp	LF	0.53	
3027	copper bus duct incl removal of hg rs & sprts, 400 amp	LF	0.67	
3028	copper bus duct incl removal of hg rs & sprts, 600 amp	LF	0.82	
3029	copper bus duct incl removal of hg rs&sprts, 1000 amp	LF	1.18	
3030	copper bus duct incl removal of hg rs & sprts, 1600 amp	LF	1.77	
3031	copper bus duct incl removal of hg rs & sprts, 3000 amp	LF	7.09	
3032	plug-in swes, 600v 3 ph, incl disc, W pipe term, 30 A	EA	2.29	
3033	plug-in swes, 600v 3 ph, incl disc, W pipe term, 60 A	EA	2.55	
3034	plug-in swes, 600v 3 ph, incl disc, W pipe term, 100 A	EA	3.41	
3035	plug-in swes, 600v 3 ph, incl disc, W pipe term, 200A	EA	5.72	
3036	plug-in swes, 600v 3 ph, incl disc, W pipe term, 400A	EA	13.13	
3037	plug-in swes, 600v 3 ph, incl disc, W pipe term, 600A	EA	20.86	
3038	plug-in swes, 600v 3 ph, incl disc, W pipe term, 800 A	EA	27.28	
3039	plug-in swes, 600v 3 ph, incl disc, W pipe term, 1200 A	EA	35.46	
3040	plug-in swes, 600v 3 ph, incl disc, W pipe term, 1600 A	EA	41.72	
3041	saf swes, 250 or 600V, incl disc of w&pipe term, 30 A	EA	2.88	
3042	saf swes, 250 or 600V, incl disc of w&pipe term, 60 amp	EA	4.03	
3043	saf swes, 250 or 600v, incl disc of w&pipe term, 100A	EA	4.86	
3044	Electrical dml, safety switches, electrical dml, 200 amp	EA	7.09	
3045	saf swes, 250 or 600v, incl disc of w&pipe term, 400A	EA	10.43	
3046	saf swes, 250 or 600v, incl disc, of w&pipe term, 600 amp	EA	15.42	
3047	panel board, 3 wire, 120/240V, 100a, to 20 circuits	EA	13.64	
3048	Electrical dml, panel board, 3 wire, 200 amps, to 42 circuits	EA	27.28	
3049	Electrical demo, panel board, 3 wire, 400 amps, to 42 circuits	EA	32.24	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3050	Electrical demo, panel board, 4 wire, 125 amps, to 20 circuits	EA	14.77	
3051	Electrical demo, panel board, 4 wire, 200 amps, to 42 circuits	EA	29.55	
3052	Electrical demo, panel board, 4 wire, 400 amps, to 42 circuits	EA	36.94	
3053	Electrical demo, transformer dry supports, wire & tremm 1 kVA	EA	4.61	
3054	Electrical demo, transformer dry supports, wire & tremm 5 kVA	EA	7.54	
3055	Electrical demo, transformer dry supports, wire & tremm 10 kVA	EA	9.85	
3056	Electrical demo, transformer dry supports, wire & tremm 37.5 kVA	EA	23.64	
3057	Electrical demo, transformer dry supports, wire & tremm 75 kVA	EA	28.37	
3058	Electrical demo, transformer, 3 phase to 600v, primary, 3 kVA	EA	9.21	
3059	Electrical demo, transformer, 3 phase to 600v, primary, 15 kVA	EA	16.89	
3060	Electrical demo, transformer, 3 phase to 600v, primary, 30 kVA	EA	20.26	
3061	Electrical demo, transformer, 3 phase to 600v, primary, 45 kVA	EA	22.88	
3062	Electrical demo, transformer, 3 phase to 600v, primary, 75 kVA	EA	26.27	
3063	transformer, 3 phase to 600v, p rimary, 112.5 kVA	EA	33.58	
3064	Electrical dml, xfnr, 3 phase to 600V, primary, 150 kVA	EA	36.07	
3065	Electrical demo, transformer, 3 phase to 600v, primary, 500 kVA	EA	69.56	
3066	Electrical demo, transformer, 3 phase to 600v, primary, 750 kVA	EA	88.53	
3067	pull boxes & cabs, incl rmv of sprts&pipe tremm, 6"x6"x4"	EA	1.14	
3068	pull boxes & cabs, incl rmv of sprts&pipe tremm, 12"x12"x4"	EA	1.52	
3069	pull boxes & cabs, incl rmv spr ts&pipe tremm, 24"x24"x6"	EA	2.88	
3070	pull boxes & cabs, incl rmv spr ts&pipe tremm, 36"x36"x8"	EA	4.61	
3071	Electrical demo, pull boxes & ca bs, junction boxes, 4" sq & oct	EA	0.44	
3072	Electrical demo, pull boxes & ca binets, handy box	EA	0.33	
3073	Electrical demo, pull boxes & ca binets, switch box	EA	0.33	
3074	Electrical demo, pull boxes & ca bs, receptacle & switch plates	EA	0.14	
3075	pull boxes & cabs, recpts & swi tches, 15 to 30 amp	EA	0.26	
3076	wire, THN-THW-THHN, removed fr om in place conduit, #14	CLF	0.55	
3077	wire, THN-THW-THHN, removed fr om in place conduit, #12	CLF	0.64	
3078	wire, THN-THW-THHN, removed fr om in place conduit, #10	CLF	0.78	
3079	wire, THW-THW-THHN, removed fr om in place conduit, #8	CLF	0.88	
3080	wire, THW-THW-THHN, removed fr om in place conduit, #6	CLF	1.09	
3081	wire, THW-THW-THHN, removed fr om in place conduit, #4	CLF	1.34	
3082	wire, THW-THW-THHN, removed fr om in place conduit, #3	CLF	1.42	
3083	wire, THW-THW-THHN, removed fr om in place conduit, #2	CLF	1.59	
3084	wire, THW-THW-THHN, removed fr om in place conduit, 1/0	CLF	2.14	
3085	wire, THW-THW-THHN, removed fr om in place conduit, 2/0	CLF	2.43	
3086	wire, THW-THW-THHN, removed fr om in place conduit, 3/0	CLF	2.84	
3087	wire, THW-THW-THHN, removed fr om in place conduit, 4/0	CLF	3.22	
3088	wire, THW-THW-THHN, removed fr om conduit, 250 kcmil	CLF	3.55	
3089	wire, THW-THW-THHN, removed fr om conduit, 300 kcmil	CLF	3.73	
3090	wire, THW-THW-THHN, removed fr om conduit, 350 kcmil	CLF	3.94	
3091	wire, THW-THW-THHN, removed fr om conduit, 400 kcmil	CLF	4.17	
3092	wire, THW-THW-THHN, removed fr om conduit, 500 kcmil	CLF	4.38	
3093	Electrical demo, int fluore fixt , rec drop-in 2'x2', 2 lamp	EA	2.03	
3094	Electrical demo, int fluore fixt , rec drop-in 2'x4', 2 lamp	EA	2.15	
3095	Electrical demo, int fluore fixt , rec drop-in 2'x4', 4 lamp	EA	2.36	
3096	Electrical demo, int fluore fixt , rec drop-in 4'x4', 4 lamp	EA	3.55	
3097	Electrical demo, fluore fixt, su rf mt, 1'x4', 2 lamp	EA	1.61	
3098	Electrical demo, fluore fixt, su rf mt, 2'x2', 2 lamp	EA	1.61	
3099	Electrical demo, fluore fixt, su rf mt, 2'x4', 4 lamp	EA	2.15	
3100	Electrical dml, interior flour f xtr, surf mount, 4' x 4', 4 lam	EA	1.77	
3101	fluore fixt, strp fixt, surf mt , 4' long, 1 lamp	EA	1.34	
3102	fluore fixt, strp fixt, surf mt , 4' long, 2 lamp	EA	1.42	
3103	Electrical demo, fluore fixt, st rp fixt, surf mt, 8'long, 1 lam	EA	1.69	
3104	Electrical demo, fluore fixt, st rp fixt, surf mt, 8'long, 2 lam	EA	1.77	
3105	int fluor fixt, pendant mt, ind l, to 15'hi, 4'l, 2 lamp	EA	2.03	
3106	int fluor fixt, pendant mt, ind l, to 15'hi, 8'l, 2 lamp	EA	2.63	
3107	Electrical demo, interior fluore fixt, surf mount, 75 watt	EA	1.14	
3108	Electrical dml, interior flour f xtr, surf mount, 150 watt	EA	1.14	
3109	int incan, surf/clg/wl mount, t o 12' hi, mh, hi bay, 400 W	EA	4.73	
3110	int incan, surf/clg/wl mount, to 12' hi, mh, hi bay, 1000 W	EA	5.91	
3111	int incan, surf/clg/wl mount, t o 12' hi, mh, 150 W lo bay	EA	3.55	
3112	exterior fixtures, incandescent , wall mount, 100 watt	EA	1.42	
3113	exterior fixtures, incandescent , quartz, 500 watt	EA	2.15	
3114	exterior fixtures, incandescent , quartz, 1500 watt	EA	2.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3115	exterior fixtures, wall pack, mercury vapor, 175 watt	EA	2.84	
3116	exterior fixtures, wall pack, mercury vapor, 250 watt	EA	2.84	

02160 Sheet Piling

02161 0009 Standard Carbon Grade Steel Sheeting - Pull And Salvage

02161 0009 Steel

02161 0009 No Wales

0010	Sheet piling, stl, 15' exc, 22 PSF, left in place, no wales	TON	1,097.87	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		198.89	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		71.60	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		79.56	
0100	Sheet piling, stl, 15' exc, 22 PSF, drive, extract & salvage, no	TON	761.69	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		54.25	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		19.53	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		21.70	
0300	Sheet piling, stl, 20' exc, 27 PSF, left in place, no wales	TON	1,047.93	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		198.89	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		71.60	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		79.56	
0400	Sheet piling, stl, 20' exc, 27 PSF, drive, extract & salvage, no	TON	715.92	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		54.25	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		19.53	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		21.70	
0600	Sheet piling, stl, 25' exc, 38 PSF, left in place, no wales	TON	967.56	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		198.89	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		71.60	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		79.56	
0700	Sheet piling, stl, 25' exc, 38 PSF, drive, extract & salvage, no	TON	528.25	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		54.25	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		19.53	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		21.70	
0900	Sheet piling, stl, 40' exc, 38 PSF, left in place, no wales	TON	949.71	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		198.89	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		71.60	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		79.56	
1000	Sheet piling, stl, 40' exc, 38 PSF, drive, extract & salvage, no	TON	483.77	
1110	Sheet piling, steel, for lightweight steel sheeting 10 psf, add		54.25	
1120	Sheet piling, stl, for high strength sheeting 45000 psi grade, add		19.53	
1130	Sheet piling, stl, for high strength sheeting 55000 psi grade, add		21.70	

02161 2499 Wales, Connections And Struts

2550	Sheet piling, stl, connections & struts, 2/3 salvage, wales	TON	2,046.85	
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02161 2600 Trench Boxes

Note: Includes 6' Spreaders. Trenches Do Not Include Trench Box Costs. Rental Is Based On Equipment Output CY/HR From Trenching Items.

2610	Trench Box, 7' Deep, 16' x 6'	DAY	115.37	
2620	Trench Box, 12' Deep, 20' x 10'	DAY	173.05	
2630	Trench Box, 8' Deep 16' x 6'	DAY	157.77	
2640	Trench Box, 8' Deep 20' x 6'	DAY	171.54	
2650	Stacking Box, 4' Deep, 20' x 6'	DAY	118.60	
2660	Trench Box, 8' Deep, 16' x 6'	WK	473.32	
2670	Trench Box, 8' Deep, 20' x 6'	WK	514.62	
2680	Stacking Box, 4' Deep, 20' x 6'	WK	355.79	
2690	Trench Box, 8' Deep, 16' x 6'	MD	1,419.97	
2700	Trench Box, 8' Deep, 20' x 6'	MD	1,543.86	
2710	Stacking Box, 4' Deep, 20' x 6'	MD	1,067.36	
2720	Trench, 1-3/4CY Hyd Exc, Daily Rent Trench Box, 8' x 16'		185.66	
2730	Trench, 5 CY Hyd Exc, Daily Rent Trench Box, 10' x 20'		278.50	

02161 3900 Wood, Including Wales, Braces And Spacers

3910	Sheet piling, wood, 8' deep, wales & access, drive, extract &	SF	5.45	
3911	Wood Shoring, 8' (2.4M) Deep Exc 55 SF/Hr In and 160 SF/Hr Out	SF	5.45	
4000	Sheet piling, wood, 10' deep, wales & access, drive, extract &	SF	6.07	
4100	Sheet piling, wood, 12' deep, wales & access, drive, extract &	SF	6.52	
4200	Sheet piling, wood, 14' deep, wales & access, drive, extract &	SF	7.02	
4300	Sheet piling, wood, 16' deep, wales & access, drive, extract &	SF	7.43	
4400	Sheet piling, wood, 18' deep, wales & access, drive, extract &	SF	7.70	
4500	Sheet piling, wood, 20' deep, wales & access, drive, extract &	SF	8.37	
4520	Sheet piling, wood, 8' D, 55 SF/hr, wales & access, L in	SF	5.99	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4540	Sheet piling, wood, 10' D, 50 SF/hr, wales & access, L in	SF	6.77	
4560	Sheet piling, wood, 12' D, 45 SF/hr, wales & access, L in	SF	7.14	
4565	Sheet piling, wood, 14' D, 42 SF/hr, wales & access, L in	SF	7.56	
4570	Sheet piling, wood, 16' D, 40 SF/hr, wales & access, L in	SF	8.11	
4580	Sheet piling, wood, 18' D, 38 SF/hr, wales & access, L in	SF	8.40	
4590	Sheet piling, wood, 20' D, 35 SF/hr, wales & access, L in	SF	9.02	

02200 Earthwork

JOC Note: Testing of installed items is included in the line item costs.

02205 Excavation for Small Jobs

Note: This section is intended for use when excavation is performed in small quantities of less than 500CY. These items include cost for mobilization, low productivity, labor and equipment.

02205 1000 Excavation for Small Jobs 100CY TO 500CY

1010 General/Structural Excavation For jobs 100CY to 500CY in Size CY 9.27

02205 1100 Excavation for Small Jobs Less Than 100CY

1110 General/Structural Excavation For Small Jobs Less Than 100CY CY 16.23

02210 General Excavation, Trenches And Cont. Footings

02210 1000 Excavate With Tractor/Loader/Backhoe

1000 Excavate Around Obstructions In Congested Area (Backhoe/Loader) CY 19.58

02211 Rock Removal

Note: Prices Are For Construction Site Excavation

02211 6000 Excavate Hard Rock In Trench

6001 Remove Rock W Hydrolic Impact Tool, Rubbertire Backhoe CY 9.24

6002 Remove Rock W Hydrolic Impact Tool, Tracked Backhoe CY 6.01

02213 Borrow

02213 2000 Fill Material Purchased & Delivered To Site And Spread.

2001 Sand, Bank Run CY 7.88

2002 Sand, Washed CY 18.96

2003 Gravel, Bank Run CY 10.35

2004 Crushed Stone 3/4" CY 20.13

2005 Common Borrow Material CY 5.51

2006 Top Soil, Weed Free CY 22.90

02214 Excavation/Backfill/Compaction

02215 0009 Backfill

02215 0009 By Hand

0010 Backfill, by hand, no compaction, light soil CY 16.13

0500 Backfill, by hand, compaction in 6" layers, air tamp CY 6.57

02215 1199 Dozer and Front End Loader

Note: Includes Spreading Of Material For Bedding Along Trench

1215 Backfill, trench, dozer, no compaction CY 0.47

1220 Backfill, trench, front-end loader no compaction CY 1.66

2360 Backfill, spread dumped gravel/fill, dozer, 6" layers, SY 0.30

2370 Backfill, spread dumped gravel/fill, dozer, 12" layers SF 1.20

2460 Backfill, sand bedding trenches, front-end loader, 1.5 CY CY 25.16

02216 0010 Backfill, Structural, Dozer or Front End Loader

02216 0020 From Existing Stockpile

2000 Backfill, strl, sand & gravel, no compct, 50' haul CY 0.56

02216 5499 Backfill Around Foundation Lift (15.24 Cn)

5500 Backfill, strl, 6" lifts, by hand, no compaction, around CY 20.30

5510 Backfill, strl, 6" lifts, by backhoe, no compaction, around CY 0.92

5520 Backfill, strl, 6" lifts, w/dozer, no compaction, around CY 0.49

5530 Backfill, strl, 6" lifts, w/loader, no compaction, around CY 1.18

02220 Excavation

02220 0010 Compaction Trench Backfill

02220 4999 Riding

5000 Compaction, riding, vibrating roller, 6" lifts, 2 passes CY 0.20

5600 Compaction, riding, 6" lifts, 2 passes, sheepsfoot/wobbly wheel CY 0.33

02220 5799 Steel Wheel Tandem Roller

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5800	Compaction, steel wheel tandem roller	CY	0.42	
02220 5899	Self Propelled Roller			
5900	Compaction of backfill, structural, SP roller, 6" lift	CY	0.80	
02220 6999	Walk Behind, Vibrating Plate			
7000	Compaction, struct/trench, walk behind, 6" lifts, 18" wide, vib	CY	3.50	
02220 8719	Air Tamper			
8720	Compaction, by hand, around structures & trenches, air	CY	2.09	
02220 8999	Compaction Water Hauling w/o Material Cost Hauling Items Do Not Include Water Purchase Price.			
9000	Compaction, water, truck, 3000 gal, 3 mile haul	CY	0.49	
9010	Compaction, water, truck, 3000 gal, 6 mile haul	CY	0.64	
9020	Compaction, water, truck, 3000 gal, 12 mile haul	CY	0.92	
9030	Compaction, water, wagon, 6000 gal, 3 mile haul	CY	0.35	
9040	Compaction, water, wagon, 6000 gal, 6 mile haul	CY	0.44	
02220 9100	Compaction Water - Use Local Rate			
Note: All Compacted FFill, Stonebase, Etc., Which Have Compaction Specs. Of Optimum Moisture Variance Must Have Compaction Water Costs Added To The Estimate. Optimum Moisture Is 10Pct Natural Moisture is 2 Pct Evaporation Rate Is 2 Pct Wet Weight Of Material At Opt. Moisture Is 3179 Lb/Cy (4165Kg/M3) - Material Requires 40 US Gallons of Water Per CY Added.				
9110	Compaction Water Price \$.005/Gal (\$0.454/100 Liters)	CY	0.21	
9120	Compaction Water Price \$.010/Gal (\$0.908/100 Liters)	CY	0.42	
9130	Compaction Water Price \$.020/Gal (\$1.816/100 Liters)	CY	0.85	
02221 0009	Drilling Only			
02221 0009	Rock Bolts			
0010	Drilling only, 2" hole for rock bolts, average	LF	4.25	
02221 0799	Pre-Splitting			
0800	Drilling only, 2.5" hole for pre-splitting, average	LF	2.23	
02221 1499	Quarry Production Drill			
1500	Drilling only, rock removal, 30 LF/Hr, quarry production drill	LF	4.14	
1520	Drilling only, rock removal, 40 LF/Hr, quarry production drill	LF	3.10	
1540	Drilling only, rock removal, 50 LF/Hr, quarry production drill	LF	2.48	
1560	Drilling only, rock removal, 60 LF/Hr, quarry production drill	LF	2.06	
1605	Drilling only, rock removal, 75 LF/Hr, quarry production drill	LF	2.34	
02221 1699	Quarry Production Drill, Rocks			
1700	Drilling only, rocks, < 1,500#	CY	26.81	
1800	Drilling only, rocks, > 1,500#	CY	20.31	
02221 1810	By Trencher - Chain			
02221 1830	Utility Trench, Medium Soil, Chain Trencher, 12HP			
1831	4" Wide, 12" Deep Trench	LF	0.45	
1832	4" Wide, 18" Deep Trench	LF	0.49	
1833	4" Wide, 24" Deep Trench	LF	0.52	
1834	6" Wide, 12" Deep Trench	LF	0.54	
1835	6" Wide, 18" Deep Trench	LF	0.60	
1836	6" Wide, 24" Deep Trench	LF	0.68	
1837	6" Wide, 36" Deep Trench	LF	0.82	
1838	8" Wide, 12" Deep Trench	LF	0.77	
1839	8" Wide, 18" Deep Trench	LF	0.90	
1841	8" Wide, 24" Deep Trench	LF	1.02	
1842	8" Wide, 36" Deep Trench	LF	1.22	
02221 1940	Direct Burial Of Conduit Or Pipe			
Note: Includes Excavation And Backfill. Trenching Excludes Any Material Or Labor Cost For Conduit Or Cable. Wire Data In Section 16120, Conduit Data In Section 16111				
1941	12"Wx30"Dp, Direct Burial of Pipe Incl Exc, Bfill, Trnhg	LF	3.10	
1942	24"Wx30"Dp, Direct Burial of Pipe Incl Exc, Bfill, Trnhg	LF	5.58	
1943	36"Wx30"Dp, Direct Burial of Pipe Incl Exc, Bfill, Trnhg	LF	7.73	
1944	6"Wx24"Dp, Direct Burial of Pipe/ Incl Exc, Bfill, Trnhg	LF	3.51	
1945	4"W To 24"Dp Trench By Chain Trencher, Excavating Only	LF	1.40	
1946	6"W To 24"Dp Trench By Chain Trencher, Excavating Only	LF	2.11	
1952	18"Wx4"Dp, Direct Burial of Pipe /Cable Incl Exc, Bfill, Trnhg	LF	4.10	
1953	24"Wx4"Dp, Direct Burial of Pipe /Cable Incl Exc, Bfill, Trnhg	LF	4.91	
1955	36"Wx4"Dp, Direct Burial of Pipe /Cable Incl Exc, Bfill, Trnhg	LF	6.16	
02221 3000	Aggregate			
Note: Price Does Not Include Cost for Hauling. See CSI 02225/3000 For Hauling Cost. Price Does Not Include Cost for Spreading or Backfill. Trenches. See CSI 02221/5000 Or 02221/6000.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3001	1.5 In Crusher Run Aggregate Fill	CY	4.94	
3002	Graded Aggregate Base Fill	CY	5.14	
3003	#3 Stone Aggregate Fill	CY	5.27	
3004	#4 Stone Aggregate Fill	CY	5.42	
3005	#5 Stone Aggregate Fill	CY	6.10	
3006	#6 Stone Aggregate Fill	CY	6.24	
3007	#7 Stone Aggregate Fill	CY	7.35	
3008	#8 Stone Aggregate Fill	CY	9.82	
3009	#52 Stone Aggregate Fill	CY	6.52	
3011	#67 Stone Aggregate Fill	CY	6.84	
3012	#78 Stone Aggregate Fill	CY	8.45	
3013	#89 Stone Aggregate Fill	CY	6.64	
3014	#89 Stone Aggregate Fill	CY	9.14	
3015	#810 Stone Aggregate Fill	CY	6.24	
3016	#M-10 Stone Aggregate Fill	CY	6.04	
3017	Screenings Stone Aggregate Fill	CY	3.42	
3018	Rip Rap Stone Aggregate Fill	CY	8.28	
3019	Rip Rap Graded Stone Aggregate Fill	CY	12.48	
3021	Surge Stone Aggregate Fill	CY	6.83	
3022	Surge Stone Graded Aggregate Fill	CY	8.45	
3023	Sand Fill, Washed Aggregate	CY	8.78	
3024	Pond Sand	CY	2.50	
8002	Gravel Bedding w/Small Fend Loader w/o Compaction #57	CY	14.82	
02222 1000	Foundation Excavation			
02222 1100	Excavation by Small Backhoe or Bobcat			
1101	Backhoe Excavation 12 In Bucket in Loose Soil	CY	1.39	
1102	Backhoe Excavation 12 In Bucket In Medium Soil	CY	1.54	
1103	Backhoe Excavation 12 In Bucket In Heavy/Wet Soil	CY	1.74	
1104	Backhoe Excavation 18 In Bucket In Loose Soil	CY	1.15	
1105	Backhoe Excavation 18 In Bucket in Medium Soil	CY	1.26	
1106	Backhoe Excavation 18 In Bucket In Heavy/Wet	CY	1.38	
02222 1200	Excavation By Large Backhoe			
1201	Backhoe Excavation 24 In Bucket in Loose Soil	CY	1.10	
1202	Backhoe Excavation 24 In Bucket In Medium Soil	CY	1.18	
1203	Backhoe Excavation 24 In Bucket In Heavy/Wet Soil	CY	1.38	
1204	Backhoe Excavation 30 In Bucket In Loose Soil	CY	2.16	
1205	Backhoe Excavation 30 In Bucket In Medium Soil	CY	2.26	
1206	Backhoe Excavation 30 In Bucket In Heavy/Wet Soil	CY	3.17	
02222 3500	Continous Excavation By Backhoe (Case 580E) 24" B/Hdipper , 1 Cy Bucket			
4105	Foundation Backfill, w/FE Loader Or Bobcat 6" Lift w/o Compactio	CY	1.20	
02223 0009	Blasting only, rock			
Note: Trench Excavation Assumes 20 Lf (Gm) Lifts With Prod Of 2 Holes Per Hour-Choose Pattern Spacing For Rock CharacTer (Doesn't Include Drilling Cost).				
02223 2399	Shallow trench			
2400	Blasting only, shallow trench, 5' wide	CY	34.64	
2420	Blasting only, shallow trench, 6.5' wide	CY	32.21	
2460	Drilling & blasting only, shallow trench, 10' wide	CY	31.02	
02223 2949	Boulders, load and detonate			
2950	Blasting only, boulders, load and detonate	CY	33.25	
02223 2999	Pre-splitting, load and detonate			
3000	Blasting only, load & detonate, boulder <1/2CY, pre-splitting	LF	4.01	
02223 6000	Blasting for quarry production			
6005	Blasting for quarry production, 6' square pattern, no drilling	CY	11.36	
6010	Blasting for quarry production, 7' square pattern, no drilling	CY	11.83	
6020	Blasting for quarry production, 8' square pattern, no drilling	CY	12.19	
6030	Blasting for quarry production, 9' square pattern, no drilling	CY	12.60	
6040	Blasting for quarry production, 10' square pattern, no drilling	CY	13.06	
6055	Blasting for quarry production, 12' square pattern, no drilling	CY	13.49	
6060	Blasting for quarry production, 14' square pattern, no drilling	CY	13.96	
02225 0010	Excavate & load on truck, bank measure			
02225 0011	Bucket drag line			
02225 0011	3/4 CY			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0012	Excav & load on truck,bucket drag line, 3/4 CY, sand/gravel,	CY	2.04	
0100	Excav & load on truck,bucket drag line, 3/4 CY, light clay,	CY	2.90	
0110	Excav & load on truck,bucket drag line, 3/4 CY, heavy clay,	CY	3.59	
0120	Excav & load on truck,bucket drag line,3/4 CY,unclassified	CY	3.21	
02225 0199	1-1/2 CY Bucket			
0200	Excav & load on truck,bucket drag line, 1.5 CY, sand/gravel,	CY	1.93	
2361	Increase Costs For Each Additional 100 Ft (30M) Of		0.83	
0210	Excav & load on truck,bucket drag line, 1.5 CY, light clay,	CY	2.52	
2361	Increase Costs For Each Additional 100 Ft (30M) Of		1.08	
0220	Excav & load on truck,bucket drag line, 1.5 CY, heavy clay,	CY	3.15	
2361	Increase Costs For Each Additional 100 Ft (30M) Of		1.35	
0230	Excav & load on truck,bucket drag line,1.5 CY,unclassified	CY	3.70	
2361	Increase Costs For Each Additional 100 Ft (30M) Of		1.59	
02225 0299	3 CY Bucket			
0300	Excav & load on truck,bucket drag line, 3 CY, sand/gravel,	CY	1.92	
0310	Excav & load on truck,bucket drag line, 3 CY, light clay,	CY	1.97	
0320	Excav & load on truck,bucket drag line, 3 CY, heavy clay,	CY	2.31	
0330	Excav & load on truck,bucket drag line,3 CY,unclassified	CY	2.51	
02225 1450	4 Cy Bucket			
1451	Bulk Excavation, Sand/Gravel 4 CY Bucket Drag Line	CY	1.23	
1452	Bulk Site Excavation, Light Clay 4 CY Bucket Drag Line	CY	1.27	
1453	Bulk Site Excavation, Heavy Clay 4 CY Bucket Drag Line	CY	1.43	
1454	Bulk Site Excavation, Unclass 4 Cy Bucket Drag Line	CY	2.02	
02225 1460	5 Cy Bucket			
1461	Bulk Excavation, Sand/Gravel 5 CY Bucket Drag Line	CY	1.26	
1462	Bulk Site Excavation, Light Clay 5 CY Bucket Drag Line	CY	1.30	
1463	Bulk Site Excavation, Heavy Clay 5 CY Bucket Drag Line	CY	1.49	
1464	Bulk Site Excavation, Unclass 5 CY Bucket Drag Line	CY	2.01	
02225 1470	6 Cy Bucket			
1471	Bulk Excavation, Sand/Gravel 6 CY Bucket Drag Line	CY	1.13	
1472	Bulk Site Excavation, Light Clay 6 CY Bucket Drag Line	CY	1.19	
1473	Bulk Site Excavation, Heavy Clay 6 CY Bucket Drag Line	CY	1.34	
1474	Bulk Site Excavation, Unclass 6 CY Bucket Drag Line	CY	1.83	
02225 1480	7 Cy Bucket			
1481	Bulk Excavation, Sand/Gravel 7 CY Bucket Drag Line	CY	1.70	
1482	Bulk Site Excavation, Light Clay 7 CY Bucket Drag Line	CY	1.79	
1483	Bulk Site Excavation, Heavy Clay 7 CY Bucket Drag Line	CY	2.00	
1484	Bulk Site Excavation, Unclass 7 CY Bucket Drag Line	CY	2.75	
02225 2100	By Hydraulic Excavator			
Note: Excavation And Loading All Operations Include Digging Piling Or Loading On Trucks (Banc Cubic Yards Per Hour) Pricing Does Not Include Cost For Hauling. See CSI 02234-0010 For Hauling Costs.)				
02225 2150	4 Cy Capacity			
2151	Exc & Load,4 CY Hyd Exc, Lt Matl 290 CY/Hr (222MB)	CY	0.92	
2152	Exc & Load,4 CY Hyd Exc,Med Matl 196 CY/Hr (150MB)	CY	1.36	
2153	Exc & Load,4 CY Hyd Exc,Wet Rock 131 CY/Hr (100MB)	CY	2.03	
2154	Exc & Load,4 CY Hyd Exc, Bl Rock 89 CY/Hr (68MB)	CY	2.98	
02225 2170	8 Cy Capacity			
2171	Exc & Load,8 CY Hyd Exc, Lt Matl 582 CY/Hr (444MB)	CY	0.45	
2172	Exc & Load,8 CY Hyd Exc,Med Matl 392 CY/Hr (300 MB)	CY	0.67	
2173	Exc & Load,8 CY Hyd Exc,Wet Rock 262 CY/Hr (200MB)	CY	0.99	
2174	Exc & Load,8 CY Hyd Exc, Bl Rock 1789 CY/Hr (136MB)	CY	1.47	
02225 2180	1-1/4 Cy Capacity			
2181	Exc & Load, 1-1/4 CY Hyd Exc,Lt Matl 58 CY/Hr (38MB)	CY	2.26	
2182	Exc & Load,1-1/4 CY Hyd Exc,Med Matl 50 CY/Hr, (31MB)	CY	2.62	
2183	Exc & Load,1-1/4 CY Hyd Exc,Wet Matl 42 CY/Hr, (23MB)	CY	3.12	
2184	Exc & Load,1-1/4 CY Hyd Exc, Bl Rock 36 CY/Hr, (21MB)	CY	3.62	
02225 2330	2-1/2 Cy Capacity			
2331	Exc & Ld,2-1/2CY Wh Ldr, Lt Matl 90 CY/Hr (69MB)	CY	1.40	
2332	Exc & Ld,1-1/2CY Wh Ldr,Med Matl 75 CY/Hr (57MB)	CY	1.73	
2333	Exc & Ld,2-1/2CY Wh Ldr,Wet Rock 50 CY/Hr (38MB)	CY	2.52	
2334	Exc & Ld,2-1/2CY Wh Ldr, Bl Rock 45 CY/Hr (34MB)	CY	2.79	
02225 2380	12 Cy Capacity			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2381	Exc & Load, 12 CY Wh Ldr, Lt Matl 580 CY/Hr (445MB)	CY	0.45	
2382	Exc & Ld, 12 CY Wh Ldr, Med Matl 520 CY/Hr (398MB)	CY	0.51	
2383	Exc & Load, 12 CY Wh Ldr, Wet Rock 465 CY/Hr (354MB)	CY	0.58	
2384	Exc & Load, 12 CY Wh Ldr, Bl Rock 335 CY/Hr (256MB)	CY	0.80	
02225 2390	13-1/2 Cy Capacity			
2391	Exc & Ld, 13-1/2CY Wh Ldr, Lt Matl 610 CY/Hr (467MB)	CY	0.13	
2392	Exc & Ld, 13-1/2CY Wh Ldr, Med Mat 545 CY/Hr (418MB)	CY	0.15	
2393	Exc & Ld, 13-1/2CY Wh Ldr, Lt Rock 485 CY/Hr (372MB)	CY	0.16	
2394	Exc & Ld, 13-1/2CY Wh Ldr, Bl Rock 350 CY/Hr (268MB)	CY	0.23	
02225 2450	5.9 Cy Capacity			
2451	Exc & Load, 5.9CY Tr Ldr, Lt Matl 335 CY/Hr (255MB)	CY	0.47	
2452	Exc & Load, 5.9CY Tr Ldr, Med Matl 300 CY/Hr (228MB)	CY	0.52	
2453	Exc & Load, 5.9CY Tr Ldr, Wet Rock 265 CY/Hr (293MB)	CY	0.60	
2454	Exc & Load, 5.9CY Tr Ldr, Bl Rock 190 CY/Hr (147MB)	CY	0.83	
02226 0010	Excavation, bulk, scrapers Choose Scraper Capacity And Cycle Time			
02226 3099	Push loaded self propelled scraper			
02226 3099	9 CY			
3100	Excavation, bulk, 9 cycle/hr, push loaded self prop scraper, 9	CY	2.22	
02226 3109	16 CY			
3110	Excavation, bulk, 9 cycle/hr, push loaded self prop scraper,	CY	1.87	
3120	Excavation, bulk, 6 cycle/hr, push loaded self prop scraper,	CY	2.81	
3130	Excavation, bulk, 4.5 cycle/hr, push loaded self prop scraper,	CY	4.22	
02226 3139	25 CY			
3140	Excavation, bulk, 9 cycle/hr, push loaded self prop scraper,	CY	1.05	
3150	Excavation, bulk, 6 cycle/hr, push loaded self prop scraper,	CY	1.40	
3160	Excavation, bulk, 4.5 cycle/hr, push loaded self prop scraper,	CY	2.10	
02226 3169	35 CY			
3170	Excavation, bulk, 9 cycle/hr, push loaded self prop scraper,	CY	0.72	
3180	Excavation, bulk, 6 cycle/hr, push loaded self prop scraper,	CY	0.95	
3190	Excavation, bulk, 4.5 cycle/hr, push loaded self prop scraper,	CY	1.43	
02226 3199	43 CY			
3200	Excavation, bulk, 9 cycle/hr, push loaded self prop scraper,	CY	0.58	
3210	Excavation, bulk, 6 cycle/hr, push loaded self prop scraper,	CY	0.78	
3220	Excavation, bulk, 4.5 cycle/hr, push loaded self prop scraper,	CY	1.17	
02226 3999	Semi-grade			
4000	Excavation, bulk, scraper, semi-grade, 2 passes w/grader	CSY	17.29	
02226 4099	Fine grade			
4100	Excavation, bulk, scraper, fine grade, 3 passes w/grader	CSY	24.01	
02227 0009	Excavating, structural			
02227 0009	Hand			
02227 0009	Pits to 6' deep			
0010	Excavating, structural, hand, pits to 6' deep, sandy soil	CY	28.22	
02227 0309	Pits to 2' deep			
0310	Exc, strl, hand, pier/fdn 2' deep, normal soil	CY	60.20	
0320	Exc, strl, hand, pier/fdn 2' deep, sand/gravel	CY	20.52	
0330	Exc, strl, hand, pier/fdn 2' deep, medium clay	CY	26.56	
0340	Exc, strl, hand, pier/fdn 2' deep, heavy clay	CY	32.25	
0350	Exc, strl, hand, pier/fdn 2' deep, loose rock	CY	41.05	
02227 0359	Pits to 2'-6" deep			
0360	Exc, strl, hand, pier/fdn 2'-6' deep, normal soil	CY	45.15	
0370	Exc, strl, hand, pier/fdn 2'-6' deep, sand/gravel	CY	41.05	
0380	Exc, strl, hand, pier/fdn 2'-6' deep, medium clay	CY	56.44	
0390	Exc, strl, hand, pier/fdn 2'-6' deep, heavy clay	CY	64.50	
0400	Exc, strl, hand, pier/fdn 2'-6' deep, loose rock	CY	75.25	
02227 0999	Hand trimming and grading			
1000	Excavating, structural, hand trimming, bottom of excavation	SF	0.47	
1010	Excavating, structural, hand trimming, slopes & sides	SF	0.47	
1030	Excavating, structural, hand trimming, around obstructions	CY	142.10	
4000	Excavating, structural, by hand, trim & shape for slab on grade	SF	0.38	
4010	Excavating, structural, fine grade gravel bedding, by hand	SF	0.19	
4020	Excavating, strl, trim & shape mach excavated area by hand	SF	0.19	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4030	Excavating, strt, fine grade gravel to finish grade, by hand	CSF	7.06	
4040	Fine Grd Struc & Slabs, by Hand Hand Clean f/Concrete Placement	SF	0.33	
4050	Finish Grade Stru & Slabs w/ Bobcat Or Front End Loader	CSF	0.46	
4060	Fin Grade Struc & Slabs w/Grader	SY	0.81	
02227 4999	Dozer			
5000	Excavating, structural, push to stockpile, dozer, 140 HP, rough	CY	1.11	
02228 0010	Excavating, trench or continuous footing			
02228 0199	Excavate with gradall			
02228 0199 1 CY				
0200	Excavate trench, light soil, 4'-6' D, 1 CY gradall	CY	1.95	
0210	Excavate trench, medium soil, 4'-6' D, 1 CY gradall	CY	1.67	
0220	Excavate trench, heavy soil, 4'-6' D, 1 CY gradall	CY	1.79	
0230	Excavate trench, loose rock, 4'-6' D, 1 CY gradall	CY	3.56	
02228 0239 1-1/4 CY				
0240	Excavate trench, light soil, 6'-10' D, 1.25 CY gradall	CY	1.43	
0250	Excavate trench, medium soil, 6'-10' D, 1.25 CY gradall	CY	1.79	
0260	Excavate trench, heavy soil, 6'-10' D, 1.25 CY gradall	CY	1.87	
0270	Excavate trench, loose rock, 6'-10' D, 1.25 CY gradall	CY	2.37	
02228 0300 Excavate with hydraulic excavator				
02228 0300 1/2 CY				
0301	Excavate trench, lt soil, 4'-6' D, 1/2 CY excavator	CY	1.19	
0302	Excavate trench, mdm soil, 4'-6' D, 1/2 CY excavator	CY	1.27	
0304	Excavate trench, hvy soil, 4'-6' D, 1/2 CY excavator	CY	1.89	
0306	Excavate trench, loose rock, 4'-6' D, 1/2 CY excavator	CY	2.52	
02228 0309 3/4 CY				
0310	Excavate trench, lt soil, 4'-6' D, 3/4 CY excavator	CY	1.12	
0312	Excavate trench, mdm soil, 4'-6' D, 3/4 CY excavator	CY	1.51	
0314	Excavate trench, hvy soil, 4'-6' D, 3/4 CY excavator	CY	1.87	
0316	Excavate trench, loose soil, 4'-6' D, 3/4 CY excavator	CY	2.74	
02228 0319 1 CY				
0320	Excavate trench, lt soil, 4'-6' D, 1 CY excavator	CY	0.73	
0322	Excavate trench, mdm soil, 4'-6' D, 1 CY excavator	CY	0.87	
0324	Excavate trench, hvy soil, 4'-6' D, 1 CY excavator	CY	1.08	
0326	Excavate trench, loose rock, 4'-6' D, 1 CY excavator	CY	1.45	
0328	Excavate trench, blast rock, 4'-6' D, 1 CY excavator	CY	1.84	
02228 0329 1-1/4 CY Loading, No Hauling				
0330	Excavate trench, lt soil, 6'-10' D, 1.25 CY excavator	CY	1.47	
0332	Excavate trench, mdm soil, 6'-10' D, 1.25 CY excavator	CY	1.84	
0334	Excavate trench, hvy soil, 6'-10' D, 1.25 CY excavator	CY	2.24	
0336	Excavate trench, loose rock, 6'-10' D, 1.25 CY excavator	CY	2.75	
0338	Excavate trench, blast rock, 6'-10' D, 1.25 CY excavator	CY	2.89	
02228 0339 1-1/2 CY				
0340	Excavate trench, lt soil, 6'-10' D, 1.5 CY excavator	CY	0.69	
0342	Excavate trench, mdm soil, 6'-10' D, 1.5 CY excavator	CY	0.82	
0344	Excavate trench, hvy soil, 6'-10' D, 1.5 CY excavator	CY	1.01	
0346	Excavate trench, loose rock, 6'-10' D, 1.5 CY excavator	CY	1.37	
0348	Excavate trench, blast rock, 6'-10' D, 1.5 CY excavator	CY	2.50	
02228 0349 1-3/4 CY				
0350	Excavate trench, lt soil, 6'-10' D, 1.75 CY excavator	CY	1.76	
0352	Excavate trench, mdm soil, 6'-10' D, 1.75 CY excavator	CY	1.14	
0354	Excavate trench, hvy soil, 6'-10' D, 1.75 CY excavator	CY	1.45	
0356	Excavate trench, loose rock, 6'-10' D, 1.75 CY excavator	CY	2.18	
0358	Excavate trench, blast rock, 6'-10' D, 1.75 CY excavator	CY	3.48	
02228 0369 2 CY				
0370	Excavate trench, lt soil, 6'-10' D, 2 CY excavator	CY	0.67	
0372	Excavate trench, mdm soil, 6'-10' D, 2 CY excavator	CY	0.80	
0374	Excavate trench, hvy, wet soil, 6'-10' D, 2 CY excavator	CY	0.99	
0376	Excavate trench, loose rock, 6'-10' D, 2 CY excavator	CY	1.34	
0378	Excavate trench, blast rock, 6'-10' D, 2 CY excavator	CY	1.70	
02228 0379 2-1/2 CY				
0380	Excavate trench, lt soil, 6'-10' D, 2.5 CY excavator	CY	0.63	
0382	Excavate trench, mdm soil, 6'-10' D, 2.5 CY excavator	CY	0.77	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0384	Excavate trench, loose rock, 6'-10' D, 2.5 CY excavator	CY	1.28	
0386	Excavate trench, blast rock, 6'-10' D, 2.5 CY excavator	CY	3.35	
0388	Excavate trench, blast rock, 6'-10' D, 2.5 CY excavator	CY	3.43	
02228 0389	3 CY			
0390	Excavate trench, light soil, 14'-20' D, 3 CY excavator	CY	0.86	
0392	Excavate trench, mdm soil, 14'-20' D, 3 CY excavator	CY	1.22	
0394	Excavate trench, hvy soil, 14'-20' D, 3 CY excavator	CY	3.58	
0396	Excavate trench, loose rock, 14'-20' D, 3 CY excavator	CY	4.43	
0398	Excavate trench, blast rock, 14'-20' D, 3 CY excavator	CY	4.53	
02228 0399	4 CY and 5 CY			
0400	Excavate trench, lt soil, 20'-25' D, 4 CY excavator	CY	0.76	
0401	Excavate trench, mdm soil, 20'-25' D, 4 CY excavator	CY	1.08	
0402	Excavate trench, hvy soil, 20'-25' D, 4 CY excavator	CY	1.42	
0403	Excavate trench, loose rock, 20'-25' D, 4 CY excavator	CY	2.02	
0404	Excavate trench, blast rock, 20'-25' D, 4 CY excavator	CY	2.62	
0405	Excavate trench, lt soil, 20'-25' D, 5 CY excavator	CY	0.66	
0406	Excavate trench, mdm soil, 20'-25' D, 5 CY excavator	CY	0.93	
0407	Excavate trench, hvy soil, 20'-25' D, 5 CY excavator	CY	1.23	
0408	Excavate trench, loose rock, 20'-25' D, 5 CY excavator	CY	1.75	
0409	Excavate trench, blast rock, 20'-25' D, 5 CY excavator	CY	2.29	
02228 1599	Excavate by hand			
	Note: Add For Loading On Trucks By Machine			
02228 1599	Wheel 300' to pile			
1600	Excavate trench, by hand, wheel 300' to pile, normal soil	CY	71.05	
1605	Excavate trench, by hand, wheel 300' to pile, sand & gravel	CY	75.79	
1610	Excavate trench, by hand, wheel 300' to pile, medium clay	CY	81.20	
1615	Excavate trench, by hand, wheel 300' to pile, heavy clay	CY	94.73	
1620	Excavate trench, by hand, wheel 300' to pile, loose rock	CY	113.68	
02228 1624	To 2' deep, piled only			
1625	Excavate trench, normal soil, by hand, piled only, to 2' deep	CY	20.30	
1630	Excavate trench, sand & gravel, by hand, piled only, to 2' deep	CY	17.76	
1635	Excavate trench, medium clay, by hand, piled only, to 2' deep	CY	23.68	
1640	Excavate trench, heavy clay, by hand, piled only, to 2' deep	CY	28.42	
1645	Excavate trench, loose rock, by hand, piled only, to 2' deep	CY	35.53	
02228 1649	To 2'-6" deep, piled only			
1650	Excavate trench, normal soil, by hand, piled only, 2'-6" deep	CY	40.60	
1655	Excavate trench, sand/gravel, by hand, piled only, 2'-6" deep	CY	35.53	
1660	Excavate trench, medium clay, by hand, piled only, 2'-6" deep	CY	47.37	
1665	Excavate trench, heavy clay, by hand, piled only, 2'-6" deep	CY	56.84	
1670	Excavate trench, loose rock, expose pipe, 2'-6" D, by hand,	CY	71.05	
1900	Excavate trench, vib plate, 6" lifts, add, for tamping	CY	3.18	
02228 3109	Trench box rental			
3110	Excavate trench, trench box, 8' x 16', rent per day	EA	185.50	
3120	Excavate trench, trench box, 10' x 20', rent per day	EA	237.00	
02229 0010	Excavating, utility trench, plow			
0100	Excavate utility trench, plowed to fine material, single cable	LF	0.21	0.07
0200	Excavate utility trench, plowed to fine material, two cable	LF	0.26	0.07
0300	Excavate utility trench, plowed to course material, sgl cable	LF	0.41	0.21
02230 0010	Excavating, utility trench			
02230 0050	Chain trencher, operator walking			
0300	Excavate utility trench, 12" deep, 6" wide, 12HP, chain	LF	0.49	
0800	Excavate utility trench, 36" deep, 12" wide, 12HP, chain	LF	2.14	
0810	Excavate utility trench, 12" W x 4' D, 12HP, chain trencher	LF	2.49	
02230 0829	Fly wheel trencher (1.8M Deep (2.7M) Deep			
0830	Excavate utility trench, 6' D, lt soil, 18" wide, fly wheel	LF	0.12	
0840	Excavate utility trench, 6' D, mdm soil, 18" wide, fly wheel	LF	0.16	
0850	Excavate utility trench, 6' D, hvy soil, 18" wide, fly wheel	LF	0.19	
0860	Excavate utility trench, 9' D, lt soil, 24" wide, fly wheel	LF	0.12	
0870	Excavate utility trench, 9' D, mdm soil, 24" wide, fly wheel	LF	0.16	
0880	Excavate utility trench, 9' D, hvy soil, 24" wide, fly wheel	LF	0.18	
02230 2000	Chain trencher, operator riding			
2700	Excavate utility trench, 12" deep, 12" wide, 40 HP, chain	LF	0.35	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02230 4009	Cable/wire burial, incl exc/bckfill Excavation And Backfill. Trenching Excludes Any Mterial Or Labor Cost For			
	Note: Wire Conduit In Section 16016.			
4010	Excavate utility trench, 30" deep, 12" wide, 40 HP, chain	LF	4.01	
4020	Excavate utility trench, 30" deep, 24" wide, 40 HP, chain	LF	7.24	
4030	Excavate utility trench, 30" deep, 36" wide, 40 HP, chain	LF	10.02	
4500	Excavate utility trench, 4" deep, 12" wide, cable, sand	LF	4.26	
4510	Excavate utility trench, 4" deep, 18" wide, cable, sand	LF	5.48	
4520	Excavate utility trench, 4" deep, 24" wide, cable, sand	LF	6.63	
4530	Excavate utility trench, 4" deep, 30" wide, cable, sand	LF	7.46	
4540	Excavate utility trench, 4" deep, 36" wide, cable, sand	LF	8.37	
02231 0009	Excavate and fill			
02231 0009	Dozer			
	Note: Stockpiled Measured In Bank Cy Avg. Oper 50 Mn Hr + 5> Grade			
0010	Excavate & fill, dozer, move 150', stockpile, 75 HP	CY	3.09	
0100	Excavate & fill, dozer, move 150', stockpile, 140 HP	CY	2.06	
0110	Excavate & fill, dozer, move 150', stockpile, 200 HP	CY	2.09	
0120	Excavate & fill, dozer, move 150', stockpile, 300 HP	CY	1.70	
0130	Excavate & fill, dozer, move 150', stockpile, 410 HP	CY	2.20	
02232 0010	Excavation And Loading			
	Note: All Operations Include Digging, Piling Or Loading On Trucks (Bank Cubic Yards Per Hour) Pricing Does Not Include Cost For Hauling. See Csi 02234 For Hauling Costs			
02232 0011	Hydraulic excavator			
02232 0011	3/4 CY			
0012	Excavate & load, hydr excavator, 3/4 CY, light matl	CY	1.64	
0100	Excavate & load, hydr excavator, 3/4 CY, mdm matl	CY	2.57	
0105	Excavate & load, hydr excavator, 3/4 CY, wet matl	CY	2.22	
0110	Excavate & load, hydr excavator, 3/4 CY, blasted rock	CY	4.12	
02232 0114	1-1/2 CY			
0115	Excavate & load, hydr excavator, 1.5 CY, lt matl	CY	1.23	
0120	Excavate & load, hydr excavator, 1.5 CY, medium matl	CY	1.37	
0125	Excavate & load, hydr excavator, 1.5 CY, wet matl	CY	1.69	
0130	Excavate & load, hydr excavator, 1.5 CY, blasted rock	CY	3.67	
02232 0134	2 CY			
0135	Excavate & load, hydr excavator, 2 CY, lt matl	CY	1.05	
0140	Excavate & load, hydr excavator, 2 CY, medium matl	CY	1.19	
0145	Excavate & load, hydr excavator, 2 CY, wet matl	CY	1.54	
0150	Excavate & load, hydr excavator, 2 CY, blasted rock	CY	2.87	
02232 0154	3-1/2 CY			
0155	Excavate & load, hydr excavator, 3.5 CY, light matl	CY	1.15	
0160	Excavate & load, hydr excavator, 3.5 CY, medium matl	CY	1.29	
0165	Excavate & load, hydr excavator, 3.5 CY, wet rock	CY	2.09	
0170	Excavate & load, hydr excavator, 3.5 CY, blasted rock	CY	2.80	
02232 0174	5 CY			
0175	Excavate & load, hydr excavator, 5 CY, light matl	CY	0.69	
0180	Excavate & load, hydr excavator, 5 CY, medium matl	CY	0.78	
0185	Excavate & load, hydr excavator, 5 CY, light rock	CY	0.97	
0190	Excavate & load, hydr excavator, 5 CY, blasted rock	CY	1.68	
02232 0199	Wheeler loader			
02232 0199	3/4 CY			
0200	Excavate & load, wheeled loader, 3/4 CY, lt matl	CY	0.83	
0205	Excavate & load, wheeled loader, 3/4 CY, medium matl	CY	1.48	
0210	Excavate & load, wheeled loader, 3/4 CY, wet rock	CY	1.78	
0215	Excavate & load, wheeled loader, 3/4 CY, blasted rock	CY	2.96	
02232 0219	1-1/2 CY			
0220	Excavate & load, wheeled loader, 1.5 CY, lt matl	CY	0.81	
0225	Excavate & load, wheeled loader, 1.5 CY, medium matl	CY	0.91	
0230	Excavate & load, wheeled loader, 1.5 CY, wet rock	CY	1.07	
0235	Excavate & load, wheeled loader, 1.5 CY, blasted rock	CY	2.42	
02232 0239	3 CY			
0240	Excavate & load, wheeled loader, 3 CY, lt matl	CY	0.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0245	Excavate & load, wheeled loader, 3 CY, medium matl	CY	0.69	
0250	Excavate & load, wheeled loader, 3 CY, wet rock	CY	0.82	
0255	Excavate & load, wheeled loader, 3 CY, blasted rock	CY	1.52	
02232 0259	5 CY			
0260	Excavate & load, wheeled loader, 5 CY, light matl	CY	0.60	
0265	Excavate & load, wheeled loader, 5 CY, medium matl	CY	0.67	
0270	Excavate & load, wheeled loader, 5 CY, wet rock	CY	0.79	
0275	Excavate & load, wheeled loader, 5 CY, blasted rock	CY	1.42	
02232 0279	7 CY			
0280	Excavate & load, wheeled loader, 7 CY, light matl	CY	0.57	
0285	Excavate & load, wheeled loader, 7 CY, medium matl	CY	0.63	
0290	Excavate & load, wheeled loader, 7 CY, wet rock	CY	0.74	
0295	Excavate & load, wheeled loader, 7 CY, blasted rock	CY	1.35	
02232 0299	Track loader			
02232 0299	1-1/2 CY			
0300	Excavate & load, track loader, 1-1/2 CY, light matl	CY	0.83	
0305	Excavate & load, track loader, 1-1/2 CY, medium matl	CY	1.18	
0310	Excavate & load, track loader, 1-1/2 CY, wet rock	CY	1.39	
0315	Excavate & load, track loader, 1-1/2 CY, blasted rock	CY	2.21	
0320	Excavate & load, track loader, 2.75 CY, light matl	CY	0.75	
0325	Excavate & load, track loader, 2.75 CY, medium matl	CY	0.84	
02232 0329	2-3/4 CY			
0330	Excavate & load, track loader, 2.75 CY, wet rock	CY	1.00	
0335	Excavate & load, track loader, 2.75 CY, blasted rock	CY	1.75	
02232 0339	3-3/4 CY			
0340	Excavate & load, track loader, 3.75 CY, light matl	CY	0.66	
0345	Excavate & load, track loader, 3.75 CY, medium matl	CY	0.74	
0350	Excavate & load, track loader, 3.75 CY, wet rock	CY	0.87	
0355	Excavate & load, track loader, 3.75 CY, blasted rock	CY	0.96	
02234 0010	Hauling, loose cubic yards			
Note: Dump And Misc. Choose Item Based On Distance. Pricing Does Not Include Cost For Excavation And Loading. See Csi 02225-0010 For Excavation And Loading Costs. All Production Based On Loose Cubic Yards.				
02234 0199	Hauling Loose Material			
0200	Hauling Loose CY Per Job Upto 1 Mile	CY	1.77	
1001	For Unimproved Road Add		2.78	
1002	40 Cy Truck Or Larger, Deduct		-1.01	
1003	Roundtrip of 1 to 3 Miles Add		3.31	
1004	Roundtrip Greater Than 3 Mile, Add		2.64	
0210	Hauling Loose TON Per Job Upto 1	TON	1.17	
1001	For Unimproved Road Add		1.84	
1002	40 Cy Truck Or Larger, Deduct		-0.67	
1003	Roundtrip of 1 to 3 Miles Add		2.19	
1004	Roundtrip Greater Than 3 Mile, Add		1.74	
02235 0010	Horizontal Boring/Pushing			
Note: Not Incl. Jacking Pits Or Dewatering				
0040	Horizontal boring, 24" dia casing, 1/4" thick wall,	LF	314.45	
0060	Horizontal boring, 36" dia casing, 3/8" thick wall,	LF	367.97	
0080	Horizontal boring, 48" dia casing, 3/8" thick wall,	LF	407.58	
0090	Horizontal Boring Up To 6" Dia.	LF	64.09	
0100	Horizontal Boring 6" To 12" Dia	LF	69.63	
0110	Horizontal Boring 12" To 24" Dia	LF	75.16	
02235 0500	Punching/Pushing - Casing Only			
Note: Not Incl. Jacking Pits Or Dewatering				
0510	Punching/Pushing Up To 1" Dia	LF	53.02	
0520	Punching Pushing 1-1/4" To 2" Dia	LF	58.56	
0530	Punching Pushing 2-1/2" To 4" Dia.	LF	64.09	
02235 0600	Roadwork, Auger Or Water Boring Under Roadways, Driveways Or Other Surfaces Up To 40' In Length.			
Note: Includes Machine To Place Pipe. Note: Not Including Pits Or Dewatering				
0610	Horiz. Boring Up To 6" Dia. Pipe	LF	47.89	
02238 0008	Ripping			
Note: Costs Are Per Type Of Material W/O Load Or Haul				

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02238 0009	Dozer			
0010	Ripping, trap rock, soft, 200 HP dozer, ideal conditions	CY	1.51	
02238 0599	Air hammer			
0600	Ripping, break rock w/air hammer, dense rock	CY	19.50	
0610	Ripping, break rock w/air hammer, medium dense rock	CY	15.60	
0620	Ripping, break rock w/air hammer, soft rock	CY	12.49	
02238 3499	Dozer with double shank ripper			
3500	Ripping, rock, dozer, 370 HP, dbl shank ripper, clay	CY	0.17	
3510	Ripping, rock, glacial till, dozer, 370 HP, dbl shank ripper	CY	0.17	
3520	Ripping, rock, dozer, 370 HP, dbl shank ripper, sedimentary	CY	0.68	
3530	Ripping, rock, metamorphic rock, dozer, 370 HP, dbl shank ripper	CY	0.91	
3540	Ripping, rock, igneous rock, dozer, 370 HP, dbl shank ripper	CY	1.09	
02238 3599	Dozer with single shank ripper			
3600	Ripping, rock, dozer, 285 HP, single shank ripper, clay	CY	0.16	
3615	Ripping, rock, glacial till, dozer, 285 HP, single shank	CY	0.16	
3620	Ripping, rock, sedimentary rock, dozer, 285 HP, single shank	CY	0.83	
3630	Ripping, rock, metamorphic rock, dozer, 285 HP, single shank	CY	1.24	
3640	Ripping, rock, igneous rock, dozer, 285 HP, single shank	CY	2.06	
02239 0010	Spread and compact			
02239 0011	Spread and compact roadway embankment			
	Note: Includes Spreading, Shaping And Compaction. Excludes Load And Haul. (See Csi 02234)			
02239 0011	Tractor			
0012	Spread & compact, 8" lift, roadway embankment, 300 HP	CY	0.44	
02239 0099	Roller			
	Note: Width 3 Mph 45Mn-Hour 3 Passes Select Lift Or Prod. Equip. Includes 200 Hp Dozer Towed Sheepsfoot Roller & 3.0M Gal Water Truck. 6Mph 45Mn-Hour 3 Passes Select Lift Or Prod. Equip. Includes 170 Hp Sp Roller And 6M Gal Water Wagon			
0100	Spread & compact, self prop vib roller, 8" lift, roadway	CY	0.16	
0110	Spread/compact, 200 HP dozer w/sheepsfoot roller, 6" lift,	CY	0.52	
0120	Spread/compact, 200 HP dozer w/sheepsfoot roller, 8" lift,	CY	0.39	
0125	Spread & compact, self prop roller, 6" lift, roadway	CY	0.46	
0130	Spread & compact, self prop roller, 8" lift, roadway	CY	0.14	
0150	Spread & compact, self prop roller, 10" lift, roadway	CY	0.12	
02239 0199	Shape embankment			
02239 0199	With machine			
0200	Spread & compact, slope up to 1 in 4, shape embankment, w/	SY	1.18	
0210	Spread & compact, slope > 1 in 4, shape embankment, w/ machine	SY	0.78	
02239 0219	By hand			
0220	Spread & compact, slope up to 1 in 4, shape embankment, by hand	SY	2.19	
0230	Spread & compact, slope > 1 in 4, shape embankment, by hand	SY	2.84	
02240 0010	Fill			
02240 0010	Borrow			
0020	Fill, borrow, for embankments, load, 1 mile haul, spread	CY	5.94	
02241 0010	Loam or topsoil			
02241 0010	Remove and stockpile			
0015	Loam or topsoil, 200' haul, 4" deep, 200 HP dozer, remove/pile	CY	2.72	
0020	Loam or topsoil, 200' haul, 6" deep, 200 HP dozer, remove/pile	CY	1.25	
02241 0399	Spread from pile to rough finish grade			
0400	Loam or topsoil, frtn loader, 1.5 CY, spread from pile to	CY	2.91	
0500	Loam or topsoil, to 200' radius, hand, spread from pile to finis	CY	16.13	
02241 0604	Top dress by hand			
0605	Loam or topsoil, top dress by hand	SF	0.05	
02241 0704	Furnish and place, truck dumped			
0705	Loam or topsoil, furnish & place, imported, 4" deep	CY	22.10	
0805	Loam or topsoil, furnish & place, imported, 6" deep	CY	21.91	
02241 0819	Furnish and place, spread by hand			
0820	Loam or topsoil, furnish & place, spread by hand	CY	55.89	
02242	Pavement Base			
02243 0009	Base			
0010	Base, prepare & roll sub-base, small areas to 2500 SY	SY	0.95	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0100	Base, prepare & roll sub-base, large areas over 2500 SY	SY	0.64	
02244 0010	Base course, large areas Roller & Water Truck Add Cost Of Water Purchase			
0050	Base course, 3" deep, crushed 3/4" stone, compacted, large	SY	6.79	
8900	Base course, roadways, for small and irregular areas, add		0.45	
0080	Base course, compacted to 4" deep, crushed 3/4" stone, large	SY	6.47	
8900	Base course, roadways, for small and irregular areas, add		0.46	
0100	Base course, compacted to 6" deep, crushed 3/4" stone, large	SY	9.33	
8900	Base course, roadways, for small and irregular areas, add		0.46	
0200	Base course, compacted to 9" deep, crushed 3/4" stone, large	SY	13.86	
8900	Base course, roadways, for small and irregular areas, add		0.62	
0300	Base course, compacted to 12" deep, crushed 3/4" stone, large	SY	18.35	
8900	Base course, roadways, for small and irregular areas, add		0.77	
1510	Base course, 3/4" maximum size, 3" deep, crushed stone, large	CY	21.97	
1600	Base course, crushed stone/slag, dry-bound, macadam base, large	CY	24.32	
1610	Base course, water-bound, macadam base, crushed stone,	CY	26.10	
1620	Base course, bitum stabilized, macadam base, crushed stone, large	CY	25.77	
1630	Base course, bituminous stabilized, subbase course,	CY	30.70	

02246 Soil Stabilization

02250 0009 Soil stabilization

Note: 1. Following Section Is For Spreading And Placing Subgrade Material. 2. For Loading Subgrade Material See Section 02240. 3. For Hauling Subgrade Material See Section 02234. 4. Material Costs Shown Are At Loading Site. 5. For Compaction Water Costs See Csi 02220-9000.

02250 0899 Line slurry

0900 Soil stbln, w/scarifying & cmpt, 10% by volume, line CY 41.17

02250 1379 Cement stabilized base material

1380 Soil stbln, w/scarifying & cmpt, cement stabilized base TON 11.54

1390 Soil stbln, w/scarifying & cmpt, mix w/roller & grader, CY 1.36

02250 1399 Crushed rock

1400 Soil stbln, w/scarifying & cmpt, delivered & screened, CY 22.67

02250 2019 Hydrated lime, for base

Note: Weight Of 110Lb /Cf Using Lime Weight Of 5.5Lb/ Lf (5%)

2020 Soil stbln, w/scarifying & cmpt, 2% by weight, 6"D, hydrated SY 4.77

2025 Soil stbln, w/scarifying & cmpt, 2% by weight, 7"D, hydrated SY 5.23

2030 Soil stbln, w/scarifying & cmpt, 2% by weight, 8"D, hydrated SY 5.68

5000 Soil poisoning, soil sterilization SF 0.07

02250 6000 Geotextile

6011 Geotextile Fabric, 55 Mls Thick Non-Woven Polypropylene SY 1.18

6013 Geotextile Fabric, 70 Mls Thick Non-Woven Polypropylene SY 1.43

6014 Geotextile Fabric, 80 Mls Thick Non-Woven Polypropylene SY 1.49

6015 Geotextile Fabric, 90 Mls Thick Non-Woven Polypropylene SY 1.68

6016 Geotextile Fabric, 105 Ml Thick Non-Woven Polypropylene SY 1.81

6018 Geotextile Fabric, 130 Ml Thick Non-Woven Polypropylene SY 2.40

6019 Geotextile Fabric, 150 Ml Thick Non-Woven Polypropylene SY 2.70

6021 Geotextile Fabric, 170 Ml Thick Non-Woven Polypropylene SY 3.08

6022 Geotextile Fabric, 55 Mls Thick For Asphalt Overlay Application MSY 1,104.85

6023 Geotextile Fabric, 60 Mls Thick For Asphalt Overlay Application MSY 1,066.80

6024 Geotextile Fabric, 80 Mls Thick For Asphalt Overlay Application MSY 1,295.11

02250 6100 Drilling And Pressure Grouting

02250 6101 From Top Of The Dam

6110 Press Grout, Top of Dam in Conc Drill 3" Nom Grout Hole 42.97

6120 Press Grout, Top of Dam in Rock Drill 3" Nom Grout Hole 50.00

6130 Press Grout, Inst Guide Sleeves 3-1/2" ID, Top of Dam 46.54

6140 Press Grout, Hyd Pressure Test Top of Dam 321.91

6150 Pressure Grout, Grout Hook-Up Top of Dam 170.26

6160 Press Grout, Portland Cement Top of Dam 25.85

6170 Press Grout, Fluidifier in Grout Top of Dam 76.44

6180 Pressure Grout, Place Grout Except Hook-Ups, Top of Dam 35.62

02250 6200 From Inside Of Galleries

6210 Press Grout, in Galleries in Conc Drill 3" Nom Grout Hole 46.17

6220 Press Grout, in Galleries in Rock Drill Nom 3" Grout Hole 51.53

6230 Pressure Grout, Inside Galleries Install Guide Sleeves, 3-1/2" I 57.47

6240 Pressure Grout, Inside Galleries Hydraulic Pressure Test 318.81

6250 Pressure Grout, Inside Galleries Grout Hook-Up 173.35

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6260	Pressure Grout, Inside Galleries Portland Cement in Grout		25.97	
6270	Pressure Grout, Inside Galleries Fluidifier In Grout		76.67	
6280	Pressure Grout, Inside Galleries Place Grout, Except Hook-Ups		160.95	
02250 6300 Large Diameter Holes - Rotary Drilled				
02250 6301 From Top Of The Dam				
6310	Pressure Grout, Rotary Drilled Top of Dam 6" Nom Dia, Vertical		61.44	
6320	Pressure Grout, Rotary Drilled Top of Dam 6" Nom Dia, Inclined		66.68	
6330	Pressure Grout, Rotary Drilled Top of Dam 9" Nom Dia, Vertical		96.77	
6340	Pressure Grout, Rotary Drilled Top of Dam 9" Nom Dia, Inclined		106.72	
02252 Vibroflotation				
02252 0010 Vibroflotation				
02252 0899 Vibroflotation compacted sand				
0900	Vibroflotation, compacted sand cylinder, minimum	CY	22.26	
0950	Vibroflotation, compacted sand cylinder, maximum	CY	51.37	
0960	Soil Stabil, Vibro-Flotation	CY	6.77	
02262 Slope/Erosion Control				
02264 4000 Cut Drainage Ditch				
4001	Common Earth	LF	0.16	
4003	Clean Wet Drainage Ditch	LF	0.10	
02266 0009 Erosion control				
02266 0009 Jute				
0010	Erosion control, stapled, jute mesh, 100 SY per roll, 4' wide	SY	1.18	
0020	Paper Biodegradable	SY	0.26	
0025	Jute Mesh, 100SY Per Roll, 4' Wide Stapled	SY	0.74	
0030	Paper Mulch	SY	0.05	
0040	Tobacco Netting, Or Jute Mesh #2, Stapled	SY	0.26	
0050	Place & Remove Hay Bales	EA	2.76	
02266 0059 Nylon				
0060	Erosion control, nylon, 3 dimensional, 9 mil thick	SY	4.77	
0061	Nylon, 3 Dimensional	SY	3.10	
0062	Erosion control, nylon, 3 dimensional, 12 mil thick	SY	5.71	
0064	Erosion control, nylon, 3 dimensional, 18 mil thick	SY	6.85	
02266 0067 Slope stakes				
0068	Erosion control, slope stakes (placed @ 3' - 5' intervals)	EA	0.14	
02266 0119 Revegetation mat				
0120	Erosion control, revegetation mat, webbed	SY	3.47	
02266 1109 Silt fence, polypropylene				
Note: Systems For Load Support And Erosion Control Applications. 8 X 20 Panels Backfilled With Sand Or Crushed Stone. (Stone Price Not Included).				
1110	Erosion control, fence only, silt fence, 3' high,	LF	1.46	
1120	Erosion control, w/7.5' posts, silt fence, 3' high,	LF	1.53	
1130	Erosion control, 4" deep cells, silt fence, 3-D poly, 8' x 20'	SF	1.42	
1140	Erosion control, 8" deep cells, silt fence, 3-D poly, 8' x 20'	SF	2.44	
1150	Polypropylene Mesh, Stapled, 6.5 Oz/SY	SY	1.57	
1160	Plastic Netting, Stapled, 2"x1" Mesh, 20 Ml	SY	0.50	
02266 1299 Soil cement				
1300	Erosion control, soil cement, 7% portland cement, in place	CY	64.46	
1305	Erosion control, soil cement, for less than 3 to 1 slope, add		0.58	
1310	Erosion control, soil cement, for greater than 3 to 1 slope, add		14.38	
02267 0010 Membrane lining systems				
02267 0010 HDPE				
Note: Impoundments, Landfills, & Mining Applications. Prices Based On 100,000 Sf Or Greater				
0100	Membrane lining, HDPE, 100,000 SF or more, 30 mil thick	SF	0.75	
0102	40 Ml HD Polyethylene Liners Greater than 100,000 SF	SF	0.85	
0104	50 Ml HD Polyethylene Liners Greater than 100,000 SF	SF	0.99	
0200	Membrane lining, HDPE, 100,000 SF or more, 60 mil thick	SF	1.35	
0202	80 Ml HD Polyethylene Liners Greater than 100,000 SF	SF	1.56	
0204	100 Ml HD Polyethylene Liners Greater than 100,000 SF	SF	1.32	
0300	Membrane lining, HDPE, 100,000 SF or more, 120 mil thick	SF	1.83	
0302	140 Ml HD Polyethylene Liners Greater than 100,000 SF	SF	2.14	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02269 0010	Retaining walls			
02269 0010	Aluminized steel bin			
	Note: Front Wall Face Of Bin. Excavation And Backfill Not Included.			
0200	Retaining walls, 8' H, 5.5' D, 10' W, no exc/bckfl, al steel	SF	20.63	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-1.69	
0500	Retaining walls, 16' H, 7.7' D, 10' W, no exc/bckfl, al stl bin	SF	24.71	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.02	
0700	Retaining walls, 20' H, 9.9' D, 10' W, no exc/bckfl, al stl bin	SF	28.95	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.40	
0900	Retaining walls, 24' H, 12.1' D, 10' W, no exc/bckfl, al stl bin	SF	32.48	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.74	
1100	Retaining walls, 28' H, 14.3' D, 10' W, no exc/bckfl, al stl bin	SF	34.82	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.96	
1110	Retaining walls, 28' H, 16.5' D, 10' W, no exc/bckfl, al stl bin	SF	37.42	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.59	
02269 1119	Battered bin			
	Note: Front Wall Face Of Bin. Excavation And Backfill Not Included.			
1120	Retaining walls, 11' H, 5.5' D, 10' W, no exc/bckfl, battered	SF	25.12	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-1.48	
1130	Retaining walls, 16' H, 7.7' D, 10' W, no exc/bckfl, battered	SF	26.86	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-1.65	
1140	Retaining walls, 22' H, 9.9' D, 10' W, no exc/bckfl, battered	SF	30.19	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-1.86	
1150	Retaining walls, 26' H, 12.1' D, 10' W, no exc/bckfl, battered	SF	33.54	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.20	
1160	Retaining walls, 28' H, 14.3' D, 10' W, no exc/bckfl, battered	SF	39.08	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.46	
1170	Retaining walls, 28' H, 16.5' D, 10' W, no exc/bckfl, battered	SF	39.78	
1300	Retaining walls, excav, for plain galv bin type walls, deduct		-2.53	
02270 0010	Rip-rap			
02270 0099	Machine placed for slope protection			
0100	Rip-rap, random, machine placed for slope protection	CY	30.44	
0110	Rip-rap, machine placed for slope prot, 3/8 to 1/4 CY	SY	57.66	
02270 0399	Gabions, galvanized steel mesh mats			
	Note: Placed By SY Of Total Top Face Area For Depth Indicated.			
0400	Rip-rap, gabions, 6" deep, galv steel mesh mats, stone filled	SY	23.37	
0500	Rip-rap, gabions, 9" deep, galv steel mesh mats, stone filled	SY	27.56	
0600	Rip-rap, gabions, stone filled, 12" deep, galv steel mesh	SY	31.23	
0700	Rip-rap, gabions, 18" deep, galv steel mesh boxes, stone filled	SY	48.73	
0800	Rip-rap, gabions, 36" deep, galv steel mesh boxes, stone filled	SY	85.29	
02270 0999	Random pieces			
	Note: Filter Stone Dumped From Trucks - Machine Placed Slope Protection (Keyed)			
1000	Rip-rap, random pieces, dumped from truck, 3/8 - 1/4 CY	CY	39.20	
1100	Rip-rap, random pieces, 10 - 100 # pieces, dumped from truck	CY	20.89	
1120	Rip-rap, random pieces, 10 - 200 # pieces, dumped from truck	CY	21.24	
1140	Rip-rap, random pieces, 25 - 500 # pieces, dumped from truck	CY	21.60	
1160	Rip-rap, random pieces, 50 - 1000 # pieces, dumped from truck	CY	22.79	
02270 1199	Sand-cement rip rap			
1200	Rip-rap, sand-cement rip rap	SY	29.53	
02280	Soil Treatment			
02280 0010	Termite pretreatment			
0020	Termite pretreatment, slab & walls, residential	SF	0.39	
0100	Termite pretreatment, slab & walls, commercial, minimum	SF	0.19	
02300	Tunneling, Piles & Caissons			
02350	Pile Driving			
02358 0010	Piling special costs			
	Note: Pricing Is For Testing Operations Only			
02358 1000	Testing			
1100	Piling special costs, 200 ton test, testing, 100 ton design	EA	18,000.00	
1200	Piling special costs, 400 ton test, testing, 200 ton design	EA	24,500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1210	Piling special costs, 600 ton test, testing, 300 ton design	EA	33,560.00	
02360 Driven Piles				
02364 0010 Piles, concrete				
02364 2199 Precast, prestressed				
02364 2199 50' long				
2200	Piles, conc, 2-3/8" wall, precast, prestressed, 50' long, 12" dia	VLF	13.63	
2300	Piles, conc, 2.5" wall, precast, prestressed, 50' long, 14" dia	VLF	16.02	
2500	Piles, conc, 3" wall, precast, prestressed, 50' long, 16" dia	VLF	21.62	
2600	Piles, conc, 3" wall, precast, prestressed, 50' long, 18" dia	VLF	26.92	
2800	Piles, conc, 3.5" wall, precast, prestressed, 50' long, 20" dia	VLF	30.52	
2900	Piles, conc, 3.5" wall, precast, prestressed, 50' long, 24" dia	VLF	34.96	
02364 3099 40' long Square				
3100	Piles, conc, square, precast, prestressed, 40' long, 10" thick	VLF	11.82	
3200	Piles, conc, square, precast, prestressed, 40' long, 12" thick	VLF	12.94	
3400	Piles, conc, square, precast, prestressed, 40' long, 14" thick	VLF	14.54	
3700	Piles, conc, square, precast, prestressed, 40' long, 16" thick	VLF	20.24	
4000	Piles, conc, square, precast, prestressed, 40' long, 18" thick	VLF	24.54	
4300	Piles, conc, square, precast, prestressed, 40' long, 20" thick	VLF	31.54	
4600	Piles, conc, square, precast, prestressed, 40' long, 24" thick	VLF	42.53	
02364 5000 Octagonal Pile 40 Ft (12M) Long				
5010	12"(31cm) Prstr Octg Conc Pile 40' Long	VLF	22.37	
5020	14"(36cm) Prstr Octg Conc Pile 40' Long	VLF	28.42	
5030	16"(41cm) Prstr Octg Conc Pile 40' Long	VLF	34.50	
5040	18"(46cm) Prstr Octg Conc Pile 40' Long	VLF	42.07	
5050	20"(51cm) Prstr Octg Conc Pile 40' Long	VLF	78.29	
5060	24"(61cm) Prstr Octg Conc Pile 40' Long	VLF	47.41	
02366 0010 Piles, steel				
02366 0020 Thin Wall Shell Straight Sided				
Note: Conc. Filled Steel Shell Piles - Tapered Friction Piles With Fluted Steel Casing Up To 50 Ft. (15M) Long w 4000 PSI Conc. Not Including Reinforcing.				
0030	8" (21CM) Dia. #16 Gauge Steel	VLF	12.62	
0040	10" (25CM) Dia. #16 Gauge Steel	VLF	13.94	
0050	12" (31CM) Dia. #16 Gauge Steel	VLF	15.25	
0060	14" (36CM) Dia. #16 Gauge Steel	VLF	16.58	
0070	16" (41CM) Dia. #16 Gauge Steel	VLF	17.88	
02366 0100 Step tapered				
Note: Up To 50 Ft (15M) Long W/4000 Psi Conc. Not Including Reinforcing				
0190	Pile, 7 ga stl, 30' D, rnd, conc filled, 12" tip, 120T cap, step	VLF	13.94	
0200	Pile, 7 ga stl, 60' D, 12" dia, rnd, conc filled, 12" tip, 120T cap, step	VLF	13.14	
0222	Pile, 7 ga stl, 60' D, 14" dia, rnd, conc filled, 12" tip, 120T cap, step	VLF	21.20	
0224	Pile, 7 ga stl, 60' D, 16" dia, rnd, conc filled, 12" tip, 120T cap, step	VLF	22.69	
0226	Pile, 7 ga stl, 60' D, 18" dia, rnd, conc filled, 12" tip, 120T cap, step	VLF	27.09	
02366 0229 Constant diameter				
Note: Fluted Steel Casing Not Including Reinf. Up To 50 Ft (15M)				
0230	Pile, 7 ga steel, 12" constant dia, fluted, end bearing, to 50'	VLF	19.32	
0232	Pile, 7 ga steel, 14" constant dia, fluted, end bearing, to 50'	VLF	22.08	
0234	Pile, 7 ga steel, 16" constant dia, fluted, end bearing, to 50'	VLF	24.51	
0236	Pile, 7 ga steel, 18" constant dia, fluted, end bearing, to 50'	VLF	27.18	
02366 0249 "H" Sections				
0250	Pile, steel, "H" sections, 50' long, HP8 x 36	VLF	15.14	
0400	Pile, steel, "H" sections, 50' long, HP10 x 42	VLF	17.06	
0500	Pile, steel, "H" sections, 50' long, HP10 x 57	VLF	21.20	
0700	Pile, steel, "H" sections, 50' long, HP12 x 53	VLF	20.30	
0800	Pile, steel, "H" sections, 50' long, HP12 x 74	VLF	26.28	
1000	Pile, steel, "H" sections, 50' long, HP14 x 73	VLF	26.55	
1100	Pile, steel, "H" sections, 50' long, HP14 x 89	VLF	30.98	
1300	Pile, steel, "H" sections, 50' long, HP14 x 102	VLF	34.94	
1400	Pile, steel, "H" sections, 50' long, HP14 x 117	VLF	39.08	
02366 1500 Splices, Caps, And Points For H-Piles				
1510	8" (21cm) H-Section Pile Splice Rolled Steel	EA	130.64	
1520	10" (25cm) H-Section Pile Splice Rolled Steel	EA	154.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1530	12" (31cm) H-Section Pile Splice Rolled Steel	EA	205.31	
1540	14" (36cm) H-Section Pile Splice Rolled Steel	EA	217.25	
1550	8" (21cm) H-Section Driving Cap Rolled Steel	EA	1,952.20	
1560	10" (25cm) H-Section Driving Cap Rolled Steel	EA	1,952.20	
1570	12" (31cm) H-Section Driving Cap Rolled Steel	EA	1,972.59	
1580	14" (36cm) H-Section Driving Cap Rolled Steel	EA	2,987.69	
1590	8" (21cm) H-Section Std Point Standard, Rolled Steel	EA	142.58	
1600	10" (25cm) H-Section Std Point Standard, Rolled Steel	EA	154.52	
1610	12" (31cm) H-Section Std Point Standard, Rolled Steel	EA	205.31	
1620	14" (36cm) H-Section Std Point Standard, Rolled Steel	EA	241.13	
1630	10" (25cm) H-Section Std Point Heavy Duty, Rolled Steel	EA	205.31	
1640	14" (36cm) H-Section Std Point Heavy Duty, Rolled Steel	EA	264.27	
02366 2599 Pipe piles				
02366 2599 Piles				
Note: All Material Included In Cost				
2600	Pile, steel, pipe, 50' L 8" dia, 29 lb/LF, no conc	VLF	16.25	
2700	Pile, steel, pipe, 50' L 8" dia, 29 lb/LF, conc filled	VLF	17.42	
2900	Pile, steel, pipe, 50' L 10" dia, 34 lb/LF, no conc	VLF	19.79	
3000	Pile, steel, pipe, 50' L 10" dia, 34 lb/LF, conc filled	VLF	21.72	
3200	Pile, steel, pipe, 50' L 12" dia, 44 lb/LF, no conc	VLF	22.90	
3300	Pile, steel, pipe, 50' L 12" dia, 44 lb/LF, conc filled	VLF	25.66	
3500	Pile, steel, pipe, 50' L 14" dia, 46 lb/LF, no conc	VLF	25.09	
3600	Pile, steel, pipe, 50' L 14" dia, 46 lb/LF, conc filled	VLF	28.92	
3800	Pile, steel, pipe, 50' L 16" dia, 52 lb/LF, no conc	VLF	28.21	
3900	Pile, steel, pipe, 50' L 16" dia, 52 lb/LF, conc filled	VLF	32.71	
4100	Pile, steel, pipe, 50' L 18" dia, 59 lb/LF, no conc	VLF	32.96	
4200	Pile, steel, pipe, 50' L 18" dia, 59 lb/LF, conc filled	VLF	38.28	
02366 4404 Splices for pipe piles				
4405	Pile, steel, pipe, splices, not in leads 8" dia	EA	148.30	
4410	Pile, steel, pipe, splices, not in leads 10" dia	EA	141.04	
4430	Pile, steel, pipe, splices, not in leads 12" dia	EA	170.19	
4510	Pile, steel, pipe, splices, not in leads 14" dia	EA	212.43	
4610	Pile, steel, pipe, splices, not in leads 16" dia	EA	265.78	
4700	Pile, steel, pipe, splices, not in leads 18" dia	EA	260.05	
02366 4819 Standard points				
4820	Pile, steel, pipe, std points, 8" dia	EA	169.68	
4840	Pile, steel, pipe, std points, 10" dia	EA	175.72	
4880	Pile, steel, pipe, std points, 12" dia	EA	209.95	
4950	Pile, steel, pipe, std points, 14" dia	EA	249.16	
5010	Pile, steel, pipe, std points, 16" dia	EA	322.55	
5060	Pile, steel, pipe, std points, 18" dia	EA	331.68	
02366 5209 Heavy duty points				
5210	Pile, steel, pipe, heavy duty points, 10" dia	EA	262.36	
5240	Pile, steel, pipe, heavy duty points, 12" dia	EA	272.95	
5260	Pile, steel, pipe, heavy duty points, 14" dia	EA	318.48	
5280	Pile, steel, pipe, heavy duty points, 16" dia	EA	415.31	
5290	Pile, steel, pipe, heavy duty points, 18" dia	EA	460.06	
02368 0010 Piles, wood				
02368 0800 Treated piles				
02368 0810 Friction or end bearing				
1000	Pile, wd, 12" butts, 8" pt, trtd, to 30' L, friction/end	LF	13.39	
1510	<i>Pile, wood, for untreated pile, deduct</i>		-2.99	
1515	<i>Pile, wood, for pile tip point, add</i>		23.00	
1520	<i>Pile, wood, for timber boot, add</i>		30.00	
1525	<i>Pile, wood, for splice for pile over 50' long, add</i>		2.14	
1100	Pile, wd, 12" butts, 8" pt, trtd, 30'-39' L, friction/end	LF	12.21	
1510	<i>Pile, wood, for untreated pile, deduct</i>		-2.76	
1515	<i>Pile, wood, for pile tip point, add</i>		23.00	
1520	<i>Pile, wood, for timber boot, add</i>		30.00	
1525	<i>Pile, wood, for splice for pile over 50' long, add</i>		1.93	
1200	Pile, wd, 12" butts, 7" pt, trtd, 40'-49' L, friction/end	LF	11.76	
1510	<i>Pile, wood, for untreated pile, deduct</i>		-2.65	
1515	<i>Pile, wood, for pile tip point, add</i>		23.00	
1520	<i>Pile, wood, for timber boot, add</i>		30.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1525	Pile, wood, for splice for pile over 50' long, add		1.87	
1300	Pile, wd, 13" butts, 7" pt, trtd, 50'-59' L, friction/end	LF	12.70	
1510	Pile, wood, for untreated pile, deduct		-3.16	
1515	Pile, wood, for pile tip point, add		23.00	
1520	Pile, wood, for timber boot, add		30.00	
1525	Pile, wood, for splice for pile over 50' long, add		1.89	
1400	Pile, wd, 13" butts, 6" pt, trtd, 60'-69' L, friction/end	LF	16.07	
1510	Pile, wood, for untreated pile, deduct		-4.44	
1515	Pile, wood, for pile tip point, add		23.00	
1520	Pile, wood, for timber boot, add		30.00	
1525	Pile, wood, for splice for pile over 50' long, add		2.22	
1500	Pile, wd, 13" butts, 6" pt, trtd, 70'-80' L, friction/end	LF	18.53	
1510	Pile, wood, for untreated pile, deduct		-5.35	
1515	Pile, wood, for pile tip point, add		23.00	
1520	Pile, wood, for timber boot, add		30.00	
1525	Pile, wood, for splice for pile over 50' long, add		2.47	

02380 Caissons

02384 0010 Caissons

02384 0100 Open style, machine drilled, stable ground Includes 3000PSI Concrete And Reinforcing.

0110	Caisson, 18" dia, .065 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	13.29	
5100	Caissons, open, for 50' to 100' deep, add		0.86	
5200	Caissons, open, for 100' to 150' deep, add		1.72	
5300	Caissons, open, for 150' to 200' deep, add		2.57	
0200	Caisson, 24" dia, .116 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	17.47	
5100	Caissons, open, for 50' to 100' deep, add		0.90	
5200	Caissons, open, for 100' to 150' deep, add		1.81	
5300	Caissons, open, for 150' to 200' deep, add		2.71	
0300	Caisson, 30" dia, .182 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	24.66	
5100	Caissons, open, for 50' to 100' deep, add		1.15	
5200	Caissons, open, for 100' to 150' deep, add		2.29	
5300	Caissons, open, for 150' to 200' deep, add		3.44	
0400	Caisson, 36" dia, .262 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	32.75	
5100	Caissons, open, for 50' to 100' deep, add		1.37	
5200	Caissons, open, for 100' to 150' deep, add		2.75	
5300	Caissons, open, for 150' to 200' deep, add		4.12	
0500	Caisson, 48" dia, .465 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	50.95	
5100	Caissons, open, for 50' to 100' deep, add		1.72	
5200	Caissons, open, for 100' to 150' deep, add		3.43	
5300	Caissons, open, for 150' to 200' deep, add		5.15	
0600	Caisson, 60" dia, .727 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	71.94	
5100	Caissons, open, for 50' to 100' deep, add		1.91	
5200	Caissons, open, for 100' to 150' deep, add		3.82	
5300	Caissons, open, for 150' to 200' deep, add		5.72	
0700	Caisson, 72" dia, 1.05 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	97.81	
5100	Caissons, open, for 50' to 100' deep, add		2.15	
5200	Caissons, open, for 100' to 150' deep, add		4.29	
5300	Caissons, open, for 150' to 200' deep, add		6.44	
0800	Caisson, 84" dia, 1.43 CY/LF, to 50' D, no casings/gndwtr, open,	VLF	126.86	
5100	Caissons, open, for 50' to 100' deep, add		2.29	
5200	Caissons, open, for 100' to 150' deep, add		4.58	
5300	Caissons, open, for 150' to 200' deep, add		6.87	
1020	Caisson, 24" shaft, .444 CY, for bell exc & conc, 4' bell dia,	EA	112.21	
5100	Caissons, open, for 50' to 100' deep, add		8.58	
5200	Caissons, open, for 100' to 150' deep, add		17.17	
5300	Caissons, open, for 150' to 200' deep, add		25.75	
1040	Caisson, 30" shaft, 1.57 CY, for bell exc & conc, 6' bell dia,	EA	394.45	
5100	Caissons, open, for 50' to 100' deep, add		30.12	
5200	Caissons, open, for 100' to 150' deep, add		60.24	
5300	Caissons, open, for 150' to 200' deep, add		90.36	
1060	Caisson, 36" shaft, 3.72 CY, for bell exc & conc, 8' bell dia,	EA	936.29	
5100	Caissons, open, for 50' to 100' deep, add		71.53	
5200	Caissons, open, for 100' to 150' deep, add		143.06	
5300	Caissons, open, for 150' to 200' deep, add		214.60	
1080	Caisson, 48" shaft, 4.48 CY, for bell exc & conc, 9' bell dia,	EA	1,124.50	
5100	Caissons, open, for 50' to 100' deep, add		85.84	
5200	Caissons, open, for 100' to 150' deep, add		171.68	
5300	Caissons, open, for 150' to 200' deep, add		257.51	
1100	Caisson, 60" shaft, 5.24 CY, for bell exc & conc, 10' bell dia,	EA	1,321.12	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5100	Caissons, open, for 50' to 100' deep, add		100.99	
5200	Caissons, open, for 100' to 150' deep, add		201.97	
5300	Caissons, open, for 150' to 200' deep, add		302.96	
1120	Caisson, 72" shaft, 8.74 CY, for bell exc & conc, 12' bell dia,	EA	2,235.94	
5100	Caissons, open, for 50' to 100' deep, add		171.68	
5200	Caissons, open, for 100' to 150' deep, add		343.35	
5300	Caissons, open, for 150' to 200' deep, add		515.03	
1140	Caisson, 84" shaft, 13.6 CY, for bell exc & conc, 14' bell dia,	EA	3,260.39	
5100	Caissons, open, for 50' to 100' deep, add		245.25	
5200	Caissons, open, for 100' to 150' deep, add		490.51	
5300	Caissons, open, for 150' to 200' deep, add		735.76	
02384 1200 Open style, machine drilled, wet ground Includes 3000PSI Concrete And Reinforcing.				
1300	Caisson, 18" dia, .065CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	18.36	
5100	Caissons, open, for 50' to 100' deep, add		1.37	
5200	Caissons, open, for 100' to 150' deep, add		2.73	
5300	Caissons, open, for 150' to 200' deep, add		4.10	
1400	Caisson, 24" dia, .116CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	25.89	
5100	Caissons, open, for 50' to 100' deep, add		1.75	
5200	Caissons, open, for 100' to 150' deep, add		3.49	
5300	Caissons, open, for 150' to 200' deep, add		5.24	
1500	Caisson, 30" dia, .182CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	38.89	
5100	Caissons, open, for 50' to 100' deep, add		2.57	
5200	Caissons, open, for 100' to 150' deep, add		5.14	
5300	Caissons, open, for 150' to 200' deep, add		7.70	
1600	Caisson, 36" dia, .262CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	55.40	
5100	Caissons, open, for 50' to 100' deep, add		3.64	
5200	Caissons, open, for 100' to 150' deep, add		7.28	
5300	Caissons, open, for 150' to 200' deep, add		10.91	
1700	Caisson, 48" dia, .465CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	100.63	
5100	Caissons, open, for 50' to 100' deep, add		6.69	
5200	Caissons, open, for 100' to 150' deep, add		13.37	
5300	Caissons, open, for 150' to 200' deep, add		20.06	
1800	Caisson, 60" dia, .727CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	157.91	
5100	Caissons, open, for 50' to 100' deep, add		10.51	
5200	Caissons, open, for 100' to 150' deep, add		21.01	
5300	Caissons, open, for 150' to 200' deep, add		31.52	
1900	Caisson, 72" dia, 1.05CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	198.91	
5100	Caissons, open, for 50' to 100' deep, add		12.26	
5200	Caissons, open, for 100' to 150' deep, add		24.51	
5300	Caissons, open, for 150' to 200' deep, add		36.77	
2000	Caisson, 84" dia, 1.43CY/LF, to 50' D, wet gnd, pulled case/pmp,	VLF	251.05	
5100	Caissons, open, for 50' to 100' deep, add		14.71	
5200	Caissons, open, for 100' to 150' deep, add		29.42	
5300	Caissons, open, for 150' to 200' deep, add		44.12	
2120	Caisson, 24" shaft, .444CY, wet gnd, for bell & conc, 4' bell	EA	136.61	
5100	Caissons, open, for 50' to 100' deep, add		11.02	
5200	Caissons, open, for 100' to 150' deep, add		22.05	
5300	Caissons, open, for 150' to 200' deep, add		33.07	
2140	Caisson, 30" shaft, 1.57CY, wet gnd, for bell & conc, 6' bell	EA	476.22	
5100	Caissons, open, for 50' to 100' deep, add		38.30	
5200	Caissons, open, for 100' to 150' deep, add		76.59	
5300	Caissons, open, for 150' to 200' deep, add		114.89	
2160	Caisson, 36" shaft, 3.72CY, wet gnd, for bell & conc, 8' bell	EA	1,130.51	
5100	Caissons, open, for 50' to 100' deep, add		90.95	
5200	Caissons, open, for 100' to 150' deep, add		181.91	
5300	Caissons, open, for 150' to 200' deep, add		272.86	
2180	Caisson, 48" shaft, 4.48CY, wet gnd, for bell & conc, 9' bell	EA	1,380.30	
5100	Caissons, open, for 50' to 100' deep, add		111.42	
5200	Caissons, open, for 100' to 150' deep, add		222.84	
5300	Caissons, open, for 150' to 200' deep, add		334.25	
2200	Caisson, 60" shaft, 5.24CY, wet gnd, for bell & conc, 10' bell	EA	1,624.40	
5100	Caissons, open, for 50' to 100' deep, add		131.31	
5200	Caissons, open, for 100' to 150' deep, add		262.63	
5300	Caissons, open, for 150' to 200' deep, add		393.94	
2220	Caisson, 72" shaft, 8.74CY, wet gnd, for bell & conc, 12' bell	EA	2,817.17	
5100	Caissons, open, for 50' to 100' deep, add		229.80	
5200	Caissons, open, for 100' to 150' deep, add		459.60	
5300	Caissons, open, for 150' to 200' deep, add		689.40	
2240	Caisson, 84" shaft, 13.6CY, wet gnd, for bell & conc, 14' bell	EA	4,484.65	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5100	Caissons, open, for 50' to 100' deep, add		367.68	
5200	Caissons, open, for 100' to 150' deep, add		735.36	
5300	Caissons, open, for 150' to 200' deep, add		1,103.04	
02384 2300	Open style, machine drilled, rocks & shale Includes 3000PSI Concrete And Reinforcing.			
2400	Caisson, open, 18" dia, .065CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	78.25	
5100	Caissons, open, for 50' to 100' deep, add		7.35	
5200	Caissons, open, for 100' to 150' deep, add		14.71	
5300	Caissons, open, for 150' to 200' deep, add		22.06	
2500	Caisson, open, 24" dia, .116CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	130.99	
5100	Caissons, open, for 50' to 100' deep, add		12.26	
5200	Caissons, open, for 100' to 150' deep, add		24.51	
5300	Caissons, open, for 150' to 200' deep, add		36.77	
2600	Caisson, open, 30" dia, .182CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	197.05	
5100	Caissons, open, for 50' to 100' deep, add		18.38	
5200	Caissons, open, for 100' to 150' deep, add		36.77	
5300	Caissons, open, for 150' to 200' deep, add		55.15	
2700	Caisson, open, 36" dia, .262CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	264.14	
5100	Caissons, open, for 50' to 100' deep, add		24.51	
5200	Caissons, open, for 100' to 150' deep, add		49.02	
5300	Caissons, open, for 150' to 200' deep, add		73.54	
2800	Caisson, open, 48" dia, .465CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	401.46	
5100	Caissons, open, for 50' to 100' deep, add		36.77	
5200	Caissons, open, for 100' to 150' deep, add		73.54	
5300	Caissons, open, for 150' to 200' deep, add		110.30	
2900	Caisson, open, 60" dia, .727CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	578.11	
5100	Caissons, open, for 50' to 100' deep, add		52.53	
5200	Caissons, open, for 100' to 150' deep, add		105.05	
5300	Caissons, open, for 150' to 200' deep, add		157.58	
3000	Caisson, open, 72" dia, 1.05CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	689.15	
5100	Caissons, open, for 50' to 100' deep, add		61.28	
5200	Caissons, open, for 100' to 150' deep, add		122.56	
5300	Caissons, open, for 150' to 200' deep, add		183.84	
3100	Caisson, open, 84" dia, 1.43CY/LF, mach dr, to 50' D, soft rock&mdm	VLF	839.33	
5100	Caissons, open, for 50' to 100' deep, add		73.54	
5200	Caissons, open, for 100' to 150' deep, add		147.07	
5300	Caissons, open, for 150' to 200' deep, add		220.61	
3220	Caisson, open, 24" shaft, .444CY, mfm hard shale, for bell&conc, 4' bell	EA	363.69	
5100	Caissons, open, for 50' to 100' deep, add		33.73	
5200	Caissons, open, for 100' to 150' deep, add		67.46	
5300	Caissons, open, for 150' to 200' deep, add		101.20	
3240	Caisson, open, 30" shaft, 1.57CY, mfm hard shale, for bell&conc, 6' bell	EA	1,279.33	
5100	Caissons, open, for 50' to 100' deep, add		118.61	
5200	Caissons, open, for 100' to 150' deep, add		237.21	
5300	Caissons, open, for 150' to 200' deep, add		355.82	
3260	Caisson, open, 36" shaft, 3.72CY, mfm hard shale, for bell&conc, 8' bell	EA	3,049.28	
5100	Caissons, open, for 50' to 100' deep, add		282.83	
5200	Caissons, open, for 100' to 150' deep, add		565.66	
5300	Caissons, open, for 150' to 200' deep, add		848.49	
3280	Caisson, open, 48" shaft, 4.48CY, mfm hard shale, for bell&conc, 9' bell	EA	3,608.66	
5100	Caissons, open, for 50' to 100' deep, add		334.25	
5200	Caissons, open, for 100' to 150' deep, add		668.51	
5300	Caissons, open, for 150' to 200' deep, add		1,002.76	
3300	Caisson, open, 60" shaft, 5.24CY, mfm hard shale, for bell&conc, 10' bel	EA	4,396.59	
5100	Caissons, open, for 50' to 100' deep, add		408.53	
5200	Caissons, open, for 100' to 150' deep, add		817.07	
5300	Caissons, open, for 150' to 200' deep, add		1,225.60	
3320	Caisson, open, 72" shaft, 8.74CY, mfm hard shale, for bell&conc, 12' bel	EA	6,647.16	
5100	Caissons, open, for 50' to 100' deep, add		612.80	
5200	Caissons, open, for 100' to 150' deep, add		1,225.60	
5300	Caissons, open, for 150' to 200' deep, add		1,838.40	
3340	Caisson, open, 84" shaft, 13.6CY, mfm hard shale, for bell&conc, 14' bel	EA	9,999.84	
5100	Caissons, open, for 50' to 100' deep, add		919.20	
5200	Caissons, open, for 100' to 150' deep, add		1,838.40	
5300	Caissons, open, for 150' to 200' deep, add		2,757.59	
4600	Caisson, open, for mobilization, 50 mile radius, rig to 36"	EA	858.38	
4650	Caisson, open, for mobilization, 50 mile radius, rig to 84"	EA	1,247.08	

02400 Railroad & Marine Work

02420 Railroad Trackwork

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02422 0009	Railroad			
02422 0009	Car bumpers			
0010	Railroad, car bumpers, std	EA	2,141.26	452.29
02422 0199	Derails hand throw			
0200	Railroad, derails hand throw (sliding)	EA	864.11	98.15
02422 0800	Siding, yard spur, level grade			
02422 0800	Wood ties and ballast			
0808	Railroad, sdg, 80lb rail, yd spur, lvl gr, wd ties & ballast	LF	79.91	10.71
0812	Railroad, sdg, 90lb rail, yd spur, lvl gr, wd ties & ballast, ARA-A &	LF	69.65	10.71
0813	Railroad, sdg, 90lb relay, yd spur, lvl gr, wd ties & ballast, ARA-A	LF	69.97	14.48
0820	Railroad, sdg, 100lb rail, yd spur, lvl gr, wd ties & ballast, ARA-A	LF	89.11	13.25
0822	Railroad, sdg, 100lb relay, yd spur, lvl gr, wd ties & ballast,	LF	70.88	14.51
0830	Railroad, sdg, 110lb rail, yd spur, lvl gr, wd ties & ballast, ARA-A	LF	74.34	11.15
0832	Railroad, sdg, 110lb relay, yd spur, lvl gr, wd ties & ballast,	LF	73.58	15.96
0840	Railroad, sdg, 115lb rail, yd spur, lvl gr, wd ties & ballast, ARA-A	LF	118.03	14.74
0842	Railroad, sdg, 115lb relay, yd spur, lvl gr, wd ties & ballast,	LF	114.86	20.60
0850	Railroad, sdg, 132lb rail, yd spur, lvl gr, wd ties & ballast, ARA-A	LF	121.74	14.08
0852	Railroad, sdg, 132lb relay, yd spur, lvl gr, wd ties & ballast,	LF	115.67	19.52
02422 1399	Ties, concrete and wood			
1400	Railroad, ties, conc, 8'-6" long, 30" OC	EA	111.47	5.93
1600	Railroad, ties, wood, pressure treated, 6" x 8" x 8'-6", CL	EA	45.04	1.38
02422 2099	Tie plugs			
2100	Railroad, tie plugs, 5"	EA	1.55	0.41
02422 2109	Track bolts and nuts			
2110	Railroad, track bolts & nuts, 1"	EA	3.38	0.21
02422 2119	Track lockwashers			
2120	Railroad, track lockwashers, 1"	EA	1.24	0.16
02422 2129	Track spikes			
2130	Railroad, track spikes, 6"	EA	6.61	1.24
02422 2139	Wood switch ties			
2140	Railroad, wood switch ties	BF	31.35	1.11
02422 2149	Rail anchors			
2150	Railroad, rail anchors	EA	6.84	1.20
02422 2159	Ballast			
2160	Railroad, ballast, crushed stone	TON	38.38	4.83
02422 2169	Gauge rods			
2170	Railroad, gauge rods	EA	183.19	15.60
02422 2179	Compromise splice bar			
2180	Railroad, compromise splice bar	PR	306.46	3.59
02422 2509	Turnouts			
2510	Railroad, turnout, #8, ARA-A & AREA, 90 lb turnout	EA	26,993.83	3,080.67
2512	Railroad, turnout, #8, ARA-A & AREA, 90 lb turnout relay	EA	17,776.03	3,080.67
2520	Railroad, turnout, #8, ARA-A & AREA, 100 lb turnout	EA	14,264.99	3,080.67
2522	Railroad, turnout, #8, ARA-A & AREA, 100 lb turnout relay	EA	21,482.96	3,080.67
2530	Railroad, turnout, #8, ARA-A & AREA, 110 lb turnout	EA	14,264.99	3,080.67
2532	Railroad, turnout, #8, ARA-A & AREA, 110 lb turnout relay	EA	23,908.86	3,080.67
2540	Railroad, turnout, #8, ARA-A & AREA, 115 lb turnout	EA	28,478.86	3,080.67
2542	Railroad, turnout, #8, ARA-A & AREA, 115 lb turnout relay	EA	22,596.02	3,080.67
2550	Railroad, turnout, #8, ARA-A & AREA, 132 lb turnout	EA	42,904.88	3,080.67
2552	Railroad, turnout, #8, ARA-A & AREA, 132 lb turnout relay	EA	26,294.10	3,080.67
02422 2599	Crossing			
2600	Railroad, crossing, 8" asphalt, 12' roadway, 6 CY	EA	1,057.35	154.10
2610	Railroad, crossing, 8" asphalt, 15' roadway, 7.4 CY	EA	1,306.14	182.94
2620	Railroad, crossing, 8" asphalt, 18' roadway, 8.9 CY	EA	1,566.78	218.30
2630	Railroad, crossing, 8" asphalt, 21' roadway, 10.4 CY	EA	1,830.30	258.00
2640	Railroad, crossing, 8" asphalt, 24' roadway, 11.9 CY	EA	2,109.39	308.67
02422 2699	Crossing insert, precast concrete			
2700	Railroad, crossing insert, 12' road, 6", precast conc, std ga	EA	1,861.07	71.04
2710	Railroad, crossing insert, 15' road, 6", precast conc, std ga	EA	2,638.18	98.33
2720	Railroad, crossing insert, 18' road, 6", precast conc, std ga	EA	3,158.46	121.36
2730	Railroad, crossing insert, 21' road, 6", precast conc, std ga	EA	3,700.75	139.23

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2740	Railroad, crossing insert, 24' road, 6", precast conc, std ga	EA	4,238.77	162.80
02422 2799	Crossing insert, molded rubber			
2800	Railroad, crossing insert, 3' x 8-6" section, 12' road, molded	EA	4,140.49	66.63
2810	Railroad, crossing insert, 3' x 8-6" section, 15' road, molded	EA	5,134.84	85.41
2820	Railroad, crossing insert, 3' x 8-6" section, 18' road, molded	EA	6,143.48	109.84
2830	Railroad, crossing insert, 3' x 8-6" section, 21' road, molded	EA	7,173.07	129.61
2840	Railroad, crossing insert, 3' x 8-6" section, 24' road, molded	EA	8,241.73	155.58
02422 2909	Remove track or turnout			
2910	Railroad, remove existing track	LF	25.68	
2920	Railroad, remove #8 turnout	EA	3,080.54	
02422 3011	New rail and relay			
3012	Railroad, new rail, 90 lb prime relay, ARA-A & AREA	LF	6.19	0.33
3020	Railroad, new rail, 100 lb prime rail, ARA-A & AREA	LF	15.35	0.41
3022	Railroad, new rail, 100 lb prime relay, ARA-A & AREA	LF	6.24	0.33
3030	Railroad, new rail, 110 lb prime rail, ARA-A & AREA (non USA	LF	7.97	0.21
3032	Railroad, new rail, 110 lb prime relay, ARA-A & AREA	LF	7.72	0.37
3040	Railroad, new rail, 115 lb prime rail, ARA-A & AREA	LF	14.28	0.29
3042	Railroad, new rail, 115 lb prime relay, ARA-A & AREA	LF	11.63	0.45
3050	Railroad, new rail, 132 lb prime rail, ARA-A & AREA	LF	16.13	0.29
3052	Railroad, new rail, 132 lb prime relay, ARA-A & AREA	LF	13.10	0.45
02422 3109	Angle bar Angle Bars And Relays			
3110	Railroad, 90 lb angle bar, ARA-A & AREA	PR	31.71	0.33
3112	Railroad, 90 lb angle bar relay, ARA-A & AREA	PR	17.92	0.41
3120	Railroad, 100 lb angle bar, ARA-A & AREA	PR	31.71	0.29
3122	Railroad, 100 lb angle bar relay, ARA-A & AREA	PR	19.99	0.45
3130	Railroad, 110 lb angle bar, ARA-A & AREA (non USA origin)	PR	20.04	0.17
3132	Railroad, 110 lb angle bar relay, ARA-A & AREA	PR	17.92	0.33
3140	Railroad, 115 lb angle bar, ARA-A & AREA	PR	83.69	0.54
3142	Railroad, 115 lb angle bar relay, ARA-A & AREA	PR	30.65	0.50
3150	Railroad, 132 lb angle bar, ARA-A & AREA	PR	83.69	0.45
3152	Railroad, 132 lb angle bar relay, ARA-A & AREA	PR	30.65	0.41
02422 3209	Tie plate			
3210	Railroad, 90 lb tie plate, ARA-A & AREA	EA	5.32	0.17
3212	Railroad, 90 lb tie plate relay, ARA-A & AREA	EA	4.22	0.33
3220	Railroad, 110 lb tie plate, ARA-A & AREA	EA	4.48	0.12
3222	Railroad, 100 lb tie plate relay, ARA-A & AREA	EA	4.22	0.33
3230	Railroad, 110 lb tie plate, ARA-A & AREA (non USA origin)	EA	6.44	0.12
3232	Railroad, 110 lb tie plate relay, ARA-A & AREA	EA	4.22	0.17
3240	Railroad, 115 lb tie plate, ARA-A & AREA	EA	18.80	0.41
3242	Railroad, 115 lb tie plate relay, ARA-A & AREA	EA	5.28	0.21
3250	Railroad, 132 lb tie plate, ARA-A & AREA (non USA origin)	EA	6.87	0.12
3252	Railroad, 132 lb tie plate relay, ARA-A & AREA	EA	6.60	0.25

02500 Paving & Surfacing

02501 Walks, Roads, Parking, Paving

02505 0010 Asphaltic concrete pavement

02505 0809 Binder course

0810	Asphaltic conc pavement, highway, binder course, 1.5"	TON	32.89	
0813	Asphaltic conc pavement, highway, binder course, 4" thick	TON	31.39	

02505 0849 Wearing course

0850	Asphaltic conc pavement, highway, wearing course, 1"	TON	37.51	
0854	Asphaltic conc pavement, highway, wearing course, 3"	TON	35.41	

02511 0010 Concrete pavement

02511 0019 Fixed form

Note: Spreader. Forms And/Or Rails, Construction Joints For Wire Mesh Are Not Included

0020	Conc pavement, w/jt, unreinforced, 6"T, fixed form 12'	SY	11.17	9.67
0090	7"(18cm) Concrete Pavement 4,500 PSI Concrete at Spreader	SY	12.77	11.33
0100	Conc pavement, w/jt, unreinforced, 8"T, fixed form 12'	SY	14.36	12.89
0200	9"(23cm) Concrete Pavement 4,500 PSI Concrete at Spreader	SY	16.32	14.49
0300	Conc pavement, w/jt, unreinforced, 10"T, fixed form 12'	SY	18.28	16.13
0400	Conc pavement, w/jt, unreinforced, 12"T, fixed form 12'	SY	21.54	19.43
0500	Conc pavement, w/jt, unreinforced, 15"T, fixed form 12'	SY	27.36	24.38

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02511 0699 Finishing, broom finish				
0700	Concrete pavement, finishing, small areas, broom finish	SY	4.49	
02511 0701 Finishing, belt dragged				
0702	Concrete pavement, finishing, small areas, belt dragged	SY	2.15	
02511 0999 Curing, with sprayed membrane by hand				
1000	Concrete pavement, curing, w/sprayed membrane by hand	SY	0.54	
02511 3199 Concrete grooving				
3200	Concrete pavement, grooving, continuous for roadways	SY	4.76	
02512 0010 Fine grade				
02512 0010 For highways				
0011	Fine grade, granular subbase for highway paving, +/- .1'	MSY	354.42	
0020	Fine grade, for roadway, base or leveling course	MSY	572.61	
0200	Fine grade, grade subgrade for base course, roadways	MSY	222.50	
02512 2000 Plastic Filter Fabric				
02512 3299 Cut & grade embankment slopes				
3320	Fine grade, cut/grade slopes, 1' vert, 2' horiz	ACR	194.69	

02513 Brick & Tile Plazas

Note: The System Cost Includes The Base Cost With The Exception Of The Suspended Slab. Type Type Of Bedding For The Pavers Depends On The Base Being Used, And Alternate Bedding May Be Desirable. Also Included In The Paving Costs Are Edging And Precast Grating Costs And Where Concrete Bases Are Involved, Expansion Joints.

02513 1000 Brick & Tile Plazas

Note: The system cost includes this base cost with the exception of the suspended slab. The type of bedding for the pavers depends on the base being used, and alternate bedding may be desirable. Also included in the paving costs are edging and precast grating costs and where concrete bases are involved, expansion joints.

1001	6"x12"x1 1/4", Plaza, Asphalt Pav, Gravel base, Asphalt Bedding	SF	9.54	
1002	6"x12"x1 1/4", Plaza, Asphalt Pav, Slab On Grade, Asphalt Bedding	SF	11.72	
1003	6"x12"x1 1/4", Plaza, Asphalt Pav, Suspend Slab, Insul. & Mastic Bed	SF	14.88	
1004	6"x12"x3, Plaza, Asphalt Pavers Gravel Base, Asphalt, Bedding	SF	11.24	
1005	6"x12"x3, Plaza, Asphalt Pavers Slab On Grade, Asphalt Bedding	SF	13.08	
1006	6"x12"x3, Plaza, Asphalt Pavers Suspend Slab, Insul. & Mastic Bed	SF	16.29	
1007	4"x8"x 1 1/2", Brick Pav, Gravel Base, Stone Dust Bedding	SF	6.58	
1008	4"x8"x 1 1/2", Brick Pav, Slab On Grade, Asphalt Bedding	SF	9.30	
1009	4"x8"x 1 1/2", Brick Pav, Suspend Slab, Insulated & No Bedding	SF	12.48	
1011	4"x8"x 2 1/4", Brick Pav, Gravel Base, Stone Dust Bedding	SF	6.76	
1012	4"x8"x 2 1/4", Brick Pav, Slab On Grade, Asphalt Bedding	SF	9.46	
1013	4"x8"x 2 1/4", Brick Pav, Suspend Slab, Insulated & No Bedding	SF	12.64	
1014	4"x8"x 2 1/4", Shale Pavers, Gravel Base, Stone Dust Bedding	SF	7.29	
1015	4"x8"x 2 1/4", Shale Pavers, Slab On Grade, Asphalt Bedding	SF	10.01	
1016	4"x8"x 2 1/4", Shale Pavers, Suspended Slab, Insul. & No Bed	SF	7.85	
1017	4" x 4" x 3/8", Thin Set Tile Slab On Grade	SF	10.47	
1018	4" x 4" x 3/4", Thin Set Tile Slab On Grade	SF	10.13	
1019	4" x 8" x 2- 1/2", Concrete Paving Stone, Gravel Base, Sand Bedding	SF	4.48	
1021	4" x 8" x 2- 1/2", Concrete Paving Stone, SOG, Asphalt Bedding	SF	6.59	
1022	4" x 8" x 2- 1/2", Concrete Paving Stone, Susp. Slab, Insul. & No Bed	SF	4.45	
1023	4" x 8" x 3- 1/4", Concrete Paving Stone, Gravel Base, Sand Bedding	SF	4.48	
1024	4" x 8" x 3- 1/4", Concrete Paving Stone, Slab On Grade, Asphalt Bed	SF	5.65	
1025	4" x 8" x 3- 1/4", Concrete Paving Stone, Sus. Slab, Insul. & No Bed	SF	4.45	
1026	8" x 16" x 2", Concrete Patio Blocks, Gravel Base, Sand Bed	SF	4.88	
1027	8" x 16" x 2", Concrete Patio Blocks, SOG, Asphalt Bedding	SF	7.44	
1028	8" x 16" x 2", Concrete Patio Blks, Suspend Slab, Insul & No Bed	SF	4.84	
1029	16" x 16" x 2", Concrete Patio Blocks, Gravel Base, Sand Bedding	SF	4.46	
1031	16" x 16" x 2", Concrete Patio Blocks, Slab On Grade, Asphalt Bed	SF	6.08	
1032	16" x 16" x 2", Concrete Patio Blks, Suspens Slab, Insul & No Bed	SF	4.89	
1033	24"x24"x2", Concrete Patio Block Gravel Base, Sand Bedding	SF	4.17	
1034	24"x24"x2", Concrete Patio Block Slab On Grade, Asphalt Bedding	SF	6.74	
1035	24"x24"x2", Concrete Patio Block Suspended Slab, Insul. & No Bed	SF	4.60	
1036	Bluestone Flagging, 3/4" Thick Irregular, Gravel Base, Sand Bed	SF	10.46	
1037	Bluestone Flagging, 3/4" Thick Irregular, SOG, Mastic Bedding	SF	16.85	
1038	Bluestone Flagging, 1" Thick Irregular, Gravel Base, Sand Bed	SF	10.80	
1039	Bluestone Flagging, 1" Thick Irregular, SOG, Mastic Bedding	SF	17.22	
1041	Flagstone, 3/4" Thick Irregular, gravel Base, Sand Bedding	SF	12.04	
1042	Flagstone, 3/4" Thick Irregular, Slab On Grade, Mastic Bedding	SF	18.42	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1043	Flagstone, 1-1/2" Thick, Random Rectangular, Gravel Base, Sand Bed	SF	13.32	
1044	Flagstone, 1-1/2" Thick, Random Rectangular, SOG, Mastic Bedding	SF	19.75	
1045	3-1/2" x 3-1/2" x 3-1/2", Granite Pav., Gravel Base, Sand Bedding	SF	14.03	
1046	3-1/2" x 3-1/2" x 3-1/2", Granite Pav, Slab On Grade, Mrtar Bed	SF	19.87	
1047	4' x4' x4', Granite Pav, Gravel Base, Sand Bedding	SF	14.21	
1048	4' x4' x4', Granite Pav, Slab On Grade, Mrtar Bedding	SF	17.87	
1049	4"x12"x4", Granite Pav, Gravel Base, Sand Bedding	SF	12.80	
1051	4"x12"x4", Granite Pav, Slab On Grade, Mrtar Bedding	SF	16.46	
1052	6"x15"x4', Granite Pavers, Gravel Base, Sand Bedding	SF	10.28	
1053	6"x15"x4', Granite Pavers, Slab On Grade, Mrtar Bedding	SF	13.95	
1054	3" thick, Limestone, Gravel Base Sand Bedding	SF	16.83	
1055	3" thick, Limestone, Slab On Grade, Mrtar Bedding	SF	20.48	
1056	4" Thick, Limestone, Gravel Base Sand Bedding	SF	19.17	
1057	4" Thick, Limestone, Slab On Grade, Mrtar Bedding	SF	22.83	
1058	5" Thick, Limestone, Gravel Base Sand Bedding	SF	21.67	
1059	5" Thick, Limestone, Slab On Grade, Mrtar Bedding	SF	25.33	
1061	3/4" Thick, Slate Flagging, Gravel Base, Sand Bedding	SF	10.31	
1062	3/4" Thick, Slate Flagging, Slab On Grade, Mastic Bedding	SF	18.49	
1063	1" Thick, Slate Flagging, Gravel Base, Sand Bedding	SF	11.11	
1064	1" Thick, Slate Flagging, Slab On Grade, Mastic Bedding	SF	17.92	
02514 0010 Sidewalks, driveways, & patios				
02514 0019 Asphaltic concrete				
0020	Sidewalks, no base, asphaltic conc, 2" thick	SY	6.05	0.50
0100	Sidewalks, no base, asphaltic conc, 2.5" thick	SY	6.80	0.43
02514 0300 Concrete				
Note: Includes Concrete, Formwork, Edging, Mesh, Expansion Joints, Curing, Screeding And Broom Finish				
0310	Sidewalk, no base, 4" T, 3000 PSI, CIP w/ 6x6 mesh, broom fin,	SF	2.26	0.29
0415	Sidewalks, concrete, for 4" thick bank run gravel base, add		0.37	
0420	Sidewalks, concrete, for 6" thick gravel base, add		0.50	
0425	Sidewalks, concrete, for sand rubbed finish, add per SF		0.38	
0430	Sidewalks, concrete, for interior setting, add		0.32	
0350	Sidewalk, no base, 5" T, 3000 PSI, CIP w/ 6x6 mesh, broom fin,	SF	2.72	0.29
0415	Sidewalks, concrete, for 4" thick bank run gravel base, add		0.44	
0420	Sidewalks, concrete, for 6" thick gravel base, add		0.59	
0425	Sidewalks, concrete, for sand rubbed finish, add per SF		0.42	
0430	Sidewalks, concrete, for interior setting, add		0.35	
0400	Sidewalk, no base, 6" T, 3000 PSI, CIP w/ 6x6 mesh, broom fin,	SF	3.03	0.28
0415	Sidewalks, concrete, for 4" thick bank run gravel base, add		0.48	
0420	Sidewalks, concrete, for 6" thick gravel base, add		0.65	
0425	Sidewalks, concrete, for sand rubbed finish, add per SF		0.45	
0430	Sidewalks, concrete, for interior setting, add		0.37	
02515 Unit Pavers				
02517 0009 Brick paving				
1500	Brick paving, on 1" thick sand bed laid flat, 4.5 per SF	SF	7.70	0.88
2600	Sidewalks, brick paving, for concrete bed and joint, add		2.01	
2700	Sidewalks, brick paving, for interior setting, add		1.14	
1600	Brick paving, 4.15 per SF, 1.75" thick	SF	4.13	0.85
2600	Sidewalks, brick paving, for concrete bed and joint, add		1.16	
2700	Sidewalks, brick paving, for interior setting, add		0.48	
2000	Brick paving, laid on edge, 7.2 per SF	SF	8.77	0.97
2600	Sidewalks, brick paving, for concrete bed and joint, add		2.09	
2700	Sidewalks, brick paving, for interior setting, add		1.63	
02518 0010 Precast concrete paving slabs				
02518 0699 Precast concrete patio block				
0700	Precast conc, patio block, 8" x 16", 2" thick, natural	SF	2.93	0.87
1920	Sidewalks, precast concrete, for interior setting, add		0.50	
0725	Precast conc, patio block, 8" x 16", 2" thick, colors	SF	3.31	0.87
1920	Sidewalks, precast concrete, for interior setting, add		0.50	
0750	Precast conc, patio block, exposed local aggregate, natural	SF	6.63	1.05
1920	Sidewalks, precast concrete, for interior setting, add		0.50	
0800	Precast conc, patio block, exposed local aggregate, colors	SF	6.75	0.93
1920	Sidewalks, precast concrete, for interior setting, add		0.50	
0850	Precast conc, patio block, exposed granite-limestone aggr	SF	7.60	1.11
1920	Sidewalks, precast concrete, for interior setting, add		0.50	
0900	Precast conc, patio block, exposed white tumblestone aggr	SF	4.91	0.68

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.50	
02518 0999	Precast concrete paver in sand bed			
1000	Precast conc, paver, in sand, 1/8" jt, 4" x 8" x 2.375"	SF	5.89	1.18
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		1.03	
1100	Precast conc, paver, in sand, 1/8" jt, 4" x 8" x 3"	SF	6.19	1.18
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		1.03	
1200	Precast conc, scored, 1/8" jt, 4"x8"x2.375" cobbled, paver, in	SF	6.01	1.18
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		1.03	
1300	Precast conc, interlocking, 2.375" T, 1/8" jt, multi-sided, paver, in	SF	5.95	1.18
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		1.03	
1400	Precast conc, paver, in sand, 1/8" jt, 8" x 8" x 2.375"	SF	4.04	0.68
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.56	
1500	Precast conc, paver, in sand, 1/8" jt, 12" x 12" x 2"	SF	4.32	0.56
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.25	
1600	Precast conc, paver, in sand, 1/8" jt, 18" x 18" x 2"	SF	4.00	0.34
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.16	
1700	Precast conc, paver, in sand, 1/8" jt, 24" x 24" x 2"	SF	3.72	0.49
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.09	
1800	Precast conc, paver, in sand, 1/8" jt, 24" x 36" x 2"	SF	3.65	0.31
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.07	
1900	Precast conc, paver, in sand, 1/8" jt, 36" x 36" x 2.5"	SF	4.10	0.25
1920	<i>Sidewalks, precast concrete, for interior setting, add</i>		0.07	
02519 0010	Stone pavers			
02519 1999	Granite paver 3/4 In Joint Laid On Sand Bed			
2000	Paver, granite, sawn w/thermal finish, white, 4" x 4" x 2"	SF	35.03	16.63
2005	Paver, granite, sawn w/thermal finish, white, 4" x 4" x 3"	SF	40.15	18.16
2010	Paver, granite, sawn w/thermal finish, white, 4" x 4" x 4"	SF	45.93	19.36
2015	Paver, granite, sawn w/thermal finish, white, 4" x 8" x 2"	SF	24.60	6.96
2020	Paver, granite, sawn w/thermal finish, white, 4" x 8" x 3"	SF	28.84	7.66
2025	Paver, granite, sawn w/thermal finish, white, 4" x 8" x 4"	SF	33.90	8.49
2030	Paver, granite, sawn w/thermal finish, white, 8" x 8" x 2"	SF	18.71	2.64
2035	Paver, granite, sawn w/thermal finish, white, 8" x 8" x 3"	SF	22.11	2.94
2040	Paver, granite, sawn w/thermal finish, white, 8" x 8" x 4"	SF	25.84	3.26
2045	Paver, granite, 12" x 12" x 2", sawn w/thermal finish, white	SF	14.46	0.88
2050	Paver, granite, 12" x 12" x 3", sawn w/thermal finish, white	SF	17.19	1.00
2055	Paver, granite, 12" x 12" x 4", sawn w/thermal finish, white	SF	20.10	1.11
02519 5000	Various Types Of Stone Pavers			
5001	1"(25cm)Flagging Bluestone Paver Irregular	SF	8.35	1.36
5002	Snapped Rectangular Stone Paver	SF	8.38	1.04
5003	3"(7.6cm) Crushed Stone Paver White Marble	SF	1.07	0.31
5004	3"(7.6cm) Crushed Stone Paver Bluestone	SF	0.89	0.34
02519 5100	Snapped Random Rectangular			
5101	1-1/2"(3.7cm) Rectangular Paver Snapped, Random	SF	9.35	1.04
5102	2"(5cm) Rectangular Paver Snapped, Random	SF	9.96	1.21
02519 5200	Slate, Natural Cleft			
5201	3/4"(1.9cm) Irreg Slate Paver Natural Cleft	SF	7.84	2.60
5202	1/2"(1.3cm) Slate Paver Rectangular, Random	SF	9.83	1.96
5203	1/4"(6mm) Rectangular Butt Joint Random	SF	8.71	1.27
02519 5300	Granite Blocks			
5301	3-1/2"x3-1/2"x3-1/2"Granite Bldk	SF	8.41	2.51
02519 5400	Granite 3 In To 5 In Thick			
5401	4"-12"L; 3"-5"W Granite Paver	SF	7.72	2.37
5402	6"-15"L; 3"-6"W Granite Paver	SF	5.98	2.51
02519 5600	Precast Concrete Pavers, Sand Bed, 1/8 In. Joints			
5601	4"x 8"x 2-3/8" Prcst Conc Paver Sand Bed, 1/8" Joint	SF	8.65	4.50
5602	4"x 8"x 3" Precast Conc Paver Sand Bed, 1/8" Joint	SF	8.74	4.44
5603	4"x 8"x 2-3/8" Cobbled Paver Precast, Scored 4"x 4"	SF	8.74	4.44
5604	2-3/8" Multi-Sided Paver Interlocking	SF	8.69	4.47
5605	8"x 8"x 2-3/8" Prcst Conc Paver Sand Bed, 1/8" Joint	SF	5.08	2.31
5606	12"x 12"x 2" Precast Conc Paver Sand Bed, 1/8" Joint	SF	2.92	0.83
5607	18"x 18"x 2" Precast Conc Paver Sand Bed, 1/8" Joint	SF	2.34	0.49
5608	24"x 24"x 2" Precast Conc Paver Sand Bed, 1/8" Joint	SF	1.44	0.29
5609	24"x 36"x 2" Precast Conc Paver Sand Bed, 1/8" Joint	SF	1.28	0.20
5611	36"x 36"x 2-1/2" Precast Paver Concrete, Sand Bed, 1/8" Joint	SF	1.63	0.17

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02520 Curbs				
02525 0009 Curb, asphaltic concrete				
0010	Curb, asphaltic, 40 LF/ton, machine formed, 8" wide, 6" high	LF	1.55	0.30
0100	Curb, asphaltic, 30 LF/ton, machine formed, 8" wide, 8" high	LF	1.74	0.27
02525 0239 Curb and gutter, reinforced, cast in place				
0240	Curb & gutter, reinforced conc, CIP, no forms	CY	83.12	0.81
02525 0249 Curb, Cast In Place				
0250	Curb, CIP, 8" x 8"	LF	14.56	1.01
0260	Curb, CIP, 12" High x 8" Wide	LF	18.32	1.43
0270	Curb, CIP, 12" High x 8" Wide	LF	10.35	1.60
02525 0299 Concrete				
02525 0299 Wood forms				
0300	Curb, conc, wood forms, 6" x 18", straight	LF	4.98	2.13
0400	Curb, conc, wood forms, 6" x 18", radius	LF	9.79	2.12
0401	6" x 24" Curb & Gutter Formwork Straight w/6" Curb	LF	9.38	1.10
0402	6" x 24" Curb & Gutter Formwork Curved w/6" Curb	LF	12.82	1.65
0403	6" x 30" Curb & Gutter Formwork Straight w/6" Curb	LF	12.14	1.06
0404	6" x 30" Curb & Gutter Formwork Curved w/6" Curb	LF	14.94	1.61
02525 0409 Steel forms				
0410	Curb, conc, steel forms, 6" x 18", straight	LF	4.75	2.12
0412	Curbs, steel form for curved cast in place, add		0.85	
02525 0421 Curb and gutter, cast in place				
0430	Curb & gutter, str,24"W 0.055CY/LF, w/ 6"H curb & 6"T	LF	14.18	0.88
0435	Curb & gutter, str,30"W 0.066CY/LF, w/ 6"H curb & 6"T	LF	15.47	0.88
02525 0549 Precast				
0550	Curb & gutter, precast, 6" x 18", straight	LF	9.50	2.03
02525 0999 Granite				
02525 0999 Split face				
1000	Curb, granite, split face, straight, 5" x 16"	LF	13.96	2.06
02525 1101 Sawn face				
1102	Curb, granite, sawn face, 5" x 16"	LF	11.57	2.06
02530 Athletic Pavement/Surfacing				
02531 0009 Running track				
0010	Running track, asphaltic conc pavement base, 2.5" thick	SY	16.30	3.02
0400	Running track, asphaltic conc pavement base, colors, 2.5"	SY	24.98	3.03
0500	Running track, asphaltic conc pavement base, latex over	SY	74.21	3.53
0600	Running track, asphaltic conc pavement base, polyurethane on	SY	110.63	3.53
02532 0009 Tennis court				
02532 0009 Asphalt				
0010	Tennis court, asphalt, incl base, 2.5" thick, single court	SY	13.08	
02532 0299 Clay courts				
0300	Tennis court, clay courts	SY	31.45	3.67
02532 0399 Pulverized natural greenstone				
0400	Tennis court, pulverized natural greenstone w/4" base, fast dry	SY	33.17	3.66
02532 0799 Rubber-acrylic base resilient pavement				
0800	Tennis court, rubber-acrylic base resilient pavement	SY	24.81	3.67
02532 0999 Colored sealer, acrylic emulsion				
1000	Tennis court, colored sealer, acrylic emulsion, 3 coats	SY	4.06	
1100	Tennis court, colored sealer, 2 colors, acrylic emulsion, 3 coat	SY	5.15	
1200	Tennis court, colored sealer, for preparing old courts, add	SY	0.27	
02532 1399 Posts for nets				
1400	Tennis court, posts for nets, 3.5" dia w/eye bolts	PR	347.40	38.49
1500	Tennis court, posts for nets, 3.5" dia w/pulley & reel	PR	387.18	36.09
02532 1699 Net				
02532 1699 Nylon				
1700	Tennis court, net, 42' long, nylon thread w/binder	EA	172.82	21.62
02532 1799 All metal				
1800	Tennis court, net, 42' long, all metal	EA	402.44	36.86
02532 1999 Paint markings				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2000	Tennis court, paint markings on asphalt, 2 coats	EA	143.33	
02532 2199	Complete court with fence			
02532 2199	Asphaltic concrete			
	Note: Includes Perimeter Fence, Gate, Concrete Perimeter For Fence Posts, Sealer, Markings, 42' Net, 3-1/2" Diameter Posts, Base, And Compaction. Price Does Not Include Lighting.			
2200	Tennis court, complete court w/fence, min, etc, asphaltic	EA	19,285.40	
2300	Tennis court, complete court w/fence, max, etc, asphaltic	EA	23,808.43	
02532 2799	Clay courts			
	Note: Includes Same Items As Found For Bituminous Courts.			
2800	Tennis court, complete court w/fence, etc, clay, minimum	EA	18,410.29	
2900	Tennis court, complete court w/fence, etc, clay, maximum	EA	27,706.63	
02544 Surfacing				
02544 1800	Rejuvenate, Respread Asphalt Pavement			
1801	Remove, Rejuvenate, Respread Asphalt Grindings 1/4" Deep	SY	21.51	
02545 0010	Surface treatment			
02545 3189	Prime coat, bituminous			
3190	Surface treatment, prime coat, bituminous, 0.28 gal/SY	CSF	4.90	
3260	Surface treatment, tack coat, bituminous, 0.1 gal/SY	CSF	2.54	
02545 3999	Prepare and clean			
4000	Surface treatment, bituminous, prep & clean, > 25,000 SY	MI	80.31	
02545 5199	Cold planing & cleaning			
5200	Surface trtmt, >25000 SY, cold planing & cleaning, 1"-3"	SY	0.56	
02545 5999	Gravel surfacing on asphalt			
6000	Surface trtmt, screened & rolled, gravel surfacing on	CY	0.91	
02546 0009	Sealcoating			
02546 0009	Coal tar pitch emulsion			
0010	Sealcoating, 2 coat coal tar pitch emulsion over 10,000 SY	SY	0.58	
02546 1900	Asphalt surface treatment			
02546 1909	Roadway or large area			
1920	Sealcoating, bituminous surf treatment, single course, 12' W	MI	4,270.11	
1975	Surf trtmt, sealcoat, dbl course, for each addl 3' width, add		1,067.53	
1970	Sealcoating, bituminous surf treatment, double course, 12' W	MI	8,480.59	
1975	Surf trtmt, sealcoat, dbl course, for each addl 3' width, add		2,120.15	
02546 2999	Sealing random cracks			
	Note: In. (12" Average, It Is Expected That The Area Outside The Damaged Area Is Removed To A Distance Required To Get A Good Solid Surface And Base) Outside Damaged Area And Replacing Base Course And Wearing Surface Material			
3000	Sealcoating, sealing random cracks, min 1/2" wide, 1,000 LF	LF	0.87	
3200	Sealcoating, sealing random cracks, small area,	SY	17.24	
02546 3499	Sealing, roads			
3500	Sealcoating, sealing, roads, resealing joints in conc	LF	2.74	
02546 3509	Sealing, concrete pavement			
3510	Sealcoating, sealing, conc pavement, preformed elastomeric	LF	4.29	
02579 Pavement Marking				
02580 0009	Lines on pavement Reflective Paint			
02580 0009	Acrylic waterborne			
0010	Lines on pvmt, acrylic waterborne, white or yellow, 4"	MF	118.93	
0200	Lines on pvmt, acrylic waterborne, white or yellow, 6"	MF	211.41	
0202	Lines on pvmt, acrylic waterborne, white or yellow, 8"	MF	216.64	
02580 0709	Thermoplastic			
0710	Lines on pvmt, thermoplastic, white or yellow, 4" wide	LF	0.33	
0740	Lines on pvmt, thermoplastic, white or yellow, 8" wide	LF	0.54	
0750	Rem 4"(25cm)Thermoplastic Stripe		3.07	
02580 0799	Parking Stall Painting (Per Ea), Reflective Paint			
0800	Lines on pvmt, parking stall, 4" wide, paint, white	LF	0.09	
0802	Lines on pvmt, parking stall, paint, 6" wide	LF	0.10	
02580 1099	Pavement marking letter			
1100	Lines on pvmt, letter, 6"	EA	1.21	
1110	Lines on pvmt, letter, 12"	EA	1.86	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1120	Lines on pvmt, letter, 24"	EA	3.30	
1130	Lines on pvmt, letter, 36"	EA	5.94	
1140	Lines on pvmt, letter, 42"	EA	6.09	
1150	Lines on pvmt, letter, 72"	EA	12.79	
02580 1199	Handicap symbol			
1200	Lines on pvmt, handicap symbol	EA	15.78	
02580 1999	Paint curbing			
2000	Lines on pvmt, paint curbing	LF	0.37	
02580 2999	Raised marker			
3000	Lines on pvmt, raised marker, amber/amber	EA	3.15	
3100	Lines on pvmt, raised marker, one way, reflective	EA	3.02	
3200	Lines on pvmt, raised marker, red & clear	EA	3.55	
02580 3999	Thermoplastic			
02580 3999	By hand			
4000	Lines on pvmt, thermoplastic, by hand, 4" wide	LF	0.57	0.58
4010	Lines on pvmt, thermoplastic, by hand, 8" wide	LF	1.14	0.74
4020	Lines on pvmt, thermoplastic, by hand, 12" wide	LF	1.69	0.82
4030	Lines on pvmt, thermoplastic, by hand, 24" wide	LF	3.81	0.80
02580 4039	Arrows			
4040	Lines on pvmt, thermoplastic, arrows	EA	78.58	
4048	Thermopl Pvmt Mrkg, 12" Letters	EA	4.88	
02580 4049	Letters			
4050	Lines on pvmt, thermoplastic, letters, 24"	EA	23.11	
4052	Thermopl Pvmt Mrkg, 36" Letters	EA	12.73	
02580 4059	Cross hatch			
4060	Lines on pvmt, thermoplastic, cross hatch	SY	7.44	
02580 4069	Remove stripe			
4070	Lines on pvmt, remove 4" thermoplastic stripe	LF	1.21	
9000	Lines on pvmt, remove 4" pavement stripe	LF	0.87	
02580 9500	Lettering Or Markings Greater Than 72"			
9510	Large Markings And Lettering >72 Inches, Reflective Paint	SF	0.59	
02580 9600	Glass Beads			
9610	Glass Beads On Pavement Markings	SF	0.04	
02590	Paving & Surfacing Small Projects			
02590 1000	Paving & Surfacing Less Than 10000 SF			
02600	Piped Utilities			
02640	Valves & Cocks			
02644 0010	Piping valves			
02644 3799	Gate valves, flanged			
3810	Piping, gate valve, flanged, CI, 250 PSI, w/box, 4" dia	EA	452.18	45.06
3814	Piping, gate valve, flanged, CI, 250 PSI, w/box, 6" dia	EA	541.18	55.06
3816	Piping, gate valve, flanged, CI, 250 PSI, w/box, 8" dia	EA	730.76	64.29
3818	Piping, gate valve, flanged, CI, 250 PSI, w/box, 10" dia	EA	1,055.95	94.81
3820	Piping, gate valve, flanged, CI, 250 PSI, w/box, 12" dia	EA	1,257.68	117.30
3822	14"(36cm) Cast Iron Gate Valve Includes Box	EA	6,589.99	398.59
3824	16"(41cm) Cast Iron Gate Valve Includes Box	EA	10,379.53	382.95
3826	3"(7.6cm) Cast Iron Gate Valve Includes Box	EA	777.25	83.64
3828	2" Cast Iron Gate Valve, Includes Box	EA	531.16	60.74
3830	1" Cast Iron Gate Valve, Includes Box	EA	408.26	45.60
02644 6000	Miscellaneous Accessories For Valves			
6001	For Grease Riser To Within 6" Of Grade, Add To Gate Or Plug VLV	EA	49.95	
02644 7000	Cast Iron Roadway Grade Curb/Valve Boxes			
02644 7100	Roadway Grade Curb/Valve Boxes, Round Head With 4-1/4" Shaft			
7101	Base, Top & Cover, 18" To 24"	EA	55.08	3.08
7102	Base, Top & Cover, 22" To 28"	EA	56.75	3.08
7103	Base, Top & Cover, 30" To 36"	EA	63.09	3.38
7104	Base, Top & Cover, 36" To 48"	EA	84.18	3.38
7105	Base, Top & Cover, 48" To 60"	EA	100.74	3.69
7106	18" Extension Section	EA	23.11	0.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02644 7200	Roadway Grade Water Meter Box & Cover			
7201	12"Wx16"Lx16"D Meter Box & Cover	EA	100.89	4.33
7202	9-3/4"Wx19-1/4"Lx16"D Oval Meter Box & Cover	EA	75.90	3.08
7203	Cast Iron Lid For Plastic Meter Box	EA	22.67	0.61
02644 7300	Roadway Grade Water Meter Box & Cover			
7301	One Cast Iron Valve Box, Screw Or Slip-Type, 3'-0"	EA	269.45	6.29
7302	One Cast Iron Valve Box, Screw Or Slip-Type, 4'-0"	EA	312.19	6.29
7303	One Cast Iron Valve Box, Screw Or Slip-Type, 5'-0"	EA	351.26	6.29
7304	One Cast Iron Valve Box, Screw Or Slip-Type, 6'-0"	EA	382.95	7.88
7305	One Cast Iron Valve Box, Screw Or Slip-Type, 7'-0"	EA	407.36	7.88
7306	One Cast Iron Valve Box, Screw Or Slip-Type, 8'-0"	EA	429.42	7.88
02645	Glass Lined Steel Pipe			
02645 0010	Piping, water distribution			
02645 1000	Glass Lined Steel Pipe, 150 PSIG			
02645 1000	Fire hydrants			
1002	4" x 1' Glass Lined Pipe	EA	586.96	
1003	4" x 2' Glass Lined Pipe	EA	648.19	
1004	4" x 3' Glass Lined Pipe	EA	648.19	
1005	4" x 4' Glass Lined Pipe	EA	770.67	
1006	4" x 5' Glass Lined Pipe	EA	1,095.99	
1007	4" x 10' Glass Lined Pipe	EA	1,269.48	
02645 1009	Breakable			
1010	Piping, water dist, 5' D, 4", fire hydrant, 2 way, no exc/bkfl,	EA	1,207.26	83.66
1011	6" x 1' Glass Lined Pipe	EA	491.28	
1012	6" x 2' Glass Lined Pipe	EA	1,065.37	
1013	6" x 3' Glass Lined Pipe	EA	1,065.37	
1014	6" X 4' Glass Lined Pipe	EA	1,206.97	
1015	6" X 5' Glass Lined Pipe	EA	1,948.19	
1016	6" X 10' Glass Lined Pipe	EA	2,254.66	
1020	Piping, water dist, 5' D, 6", fire hydrant, 2 way, no exc/bkfl,	EA	1,234.35	85.63
1021	8" x 1' Glass Lined Pipe	EA	1,215.41	
1022	8" x 2' Glass Lined Pipe	EA	1,464.18	
1023	8" x 3' Glass Lined Pipe	EA	1,464.18	
1024	8" x 4' Glass Lined Pipe	EA	1,684.00	
1025	8" x 5' Glass Lined Pipe	EA	2,281.45	
1026	8" x 10' Glass Lined Pipe	EA	2,593.12	
1030	Piping, water dist, 5' D, 8", fire hydrant, 2 way, no exc/bkfl,	EA	1,356.17	82.49
02645 1035	Remove & Reinstall Standard Fire Hydrant W 5'			
Note: Includes Storage And Cleaning. Excavation, Backfill And Thrust Blocking Around Fire Hydrant Is Not Included.				
1040	Site dml, hydrants, fire, remove & reset	EA	803.17	
1041	12" x 1' Glass Lined Pipe	EA	3,299.74	
1042	12" x 2' Glass Lined Pipe	EA	3,299.74	
1043	12" x 3' Glass Lined Pipe	EA	3,419.66	
1044	12" x 4' Glass Lined Pipe	EA	3,647.11	
1045	12" x 5' Glass Lined Pipe	EA	4,092.72	
1046	12" x 10' Glass Lined Pipe	EA	5,056.28	
1066	16" x 10' Glass Lined Pipe	EA	6,887.57	
02645 2000	Glass Lined Steel Pipe 90 Degree Elbow 150 PSIG			
2001	4" Glass Lined 90 Degree Bend	EA	687.41	
2002	6" Glass Lined 90 Degree Bend	EA	1,128.25	
2004	8" Glass Lined 90 Degree Bend	EA	2,095.27	
2006	10" Glass Lined 90 Degree Bend	EA	3,735.96	
2008	12" Glass Lined 90 Degree Bend	EA	5,519.45	
2012	14" Glass Lined 90 Degree Bend	EA	6,487.88	
2014	16" Glass Lined 90 Degree Bend	EA	7,456.19	
02645 3000	Glass Lined Steel Pipe 45 Degree Elbow 150 PSIG			
3001	4" Glass Lined 45 Degree Bend	EA	673.38	
3002	6" Glass Lined 45 Degree Bend	EA	1,128.25	
3004	8" Glass Lined 45 Degree Bend	EA	2,192.23	
3006	10" Glass Lined 45 Degree Bend	EA	6,231.35	
3008	12" Glass Lined 45 Degree Bend	EA	5,519.45	
3012	14" Glass Lined 45 Degree Bend	EA	6,487.88	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3014	16" Glass Lined 45 Degree Bend	EA	7,456.19	
02645 5000	Glass Lined Steel Pipe Tee, 150 PSIG			
5001	4" Glass Lined Tee	EA	1,067.95	
5002	6" Glass Lined Tee	EA	1,843.41	
5004	8" Glass Lined Tee	EA	2,741.06	
5006	10" Glass Lined Tee	EA	4,742.85	
5008	12" Glass Lined Tee	EA	6,758.04	
5012	14" Glass Lined Tee	EA	7,963.86	
5014	16" Glass Lined Tee	EA	9,151.43	
02645 5599	Post indicator valve			
5600	Piping, water dist, 5' bury, 4" adj valve, post indicator valve	EA	920.12	37.75
5610	Piping, water dist, 5' bury, 6" adj valve, post indicator valve	EA	988.37	40.68
5620	Piping, water dist, 5' bury, 8" adj valve, post indicator valve	EA	1,182.48	49.02
02646	Relining Existing Pipelines			
02646 1000	Lining Pipe W Cement Includes: Bypass & Cleanin			
1001	Lining 6" To 10" Pipe	LF	27.77	
1002	Lining 10" To 12" Pipe	LF	30.04	
1003	Lining 12" To 16" Pipe	LF	32.35	
1004	Lining 16" To 20" Pipe	LF	38.49	
1005	Lining 24" To 36" Pipe	LF	41.12	
1006	Lining 48" To 72" Pipe	LF	51.55	
02647	lining Pipelines			
02647 1000	PVC Lining System			
	Note: Prices Include Cleaning.			
02647 1100	360 Degree Liner			
1101	24" to 36" Dia Pipe Liner 500 To 1000 Lf	LF	7.01	
1102	24" to 36" Dia Pipe Liner 1000 T o 2000 Lf	LF	6.06	
1103	24" to 36" Dia Pipe Liner Over 2 000 Lf	LF	5.74	
1104	Over 36" Dia Pipe Liner 500 To 1 000 Lf	LF	7.66	
1105	Over 36" Dia Pipe Liner 1000 To 2000 Lf	LF	6.06	
1106	Over 36" Dia Pipe Liner Over 200 0 Lf	LF	5.74	
02647 1200	Crown Liner (Up To 270 Degree Coverage)			
	Note: includes Construction Of Work Platform			
1201	48" To 72" Dia. Crown Liner 500 To 1000 Lf	LF	10.21	
1202	48" To 72" Dia. Crown Liner 1000 To 2000 Lf	LF	8.93	
1203	48" To 72" Dia. Crown Liner Over 2000 Lf	LF	7.01	
1204	72" To 100" Dia. Crown Liner 500 To 1000 Lf	LF	11.16	
1205	72" To 100" Dia. Crown Liner 100 0 To 2000 Lf	LF	10.21	
1206	72" To 100" Dia. Crown Liner Ove r 2000 Lf	LF	8.93	
1207	100" To 120" Dia. Crown Liner 50 0 To 1000 Lf	LF	11.16	
1208	100" To 120" Dia. Crown Liner 10 00 To 2000 Lf	LF	10.21	
1209	100" To 120" Dia. Crown Liner Ov er 2000 Lf	LF	9.25	
02647 1300	Lateral Reinstatement			
1301	Lateral Reinstatement	EA	637.88	
02647 2000	Vinylthane Co-lining System			
	Note: Also For Tanks, Wells, Inlet Channels, Effluent Channels, GritChambers, Flow Equalization Structures, Sewer Line Joints, DiversionStructures, Steel And Concrete, Structures Exposed To H2S Corrosion, Launderers, Manholes, Screeniong Stations, Digesters, Siphons, PipeEncasements, Etc.			
2001	155Mls Co-lining, W/Mastic, PVC, Primer & Crosslink Activator	CSF	1,059.89	
2002	90 Mls Co-lining, W/Mastic, PVC, Primer & Crosslink Activator	CSF	667.07	
2003	60 Mls Co-lining, W/Mastic, PVC, Primer & Crosslink Activator	CSF	493.52	
02648	Prestressed Concrete Pipe			
02648 2001	PCCP			
2001	20"(51cm) Prestressed Conc Pipe 100 PSI	LF	53.05	2.47
2002	24"(61cm) Prestressed Conc Pipe 100 PSI	LF	30.52	3.68
2003	30"(76cm) Prestressed Conc Pipe 100 PSI	LF	39.39	4.11
2004	36"(91cm) Prestressed Conc Pipe 100 PSI	LF	53.92	4.77
2005	42"(106cm) Prestressed Conc Pipe 100 PSI	LF	63.70	5.43
2006	48"(122cm) Prestressed Conc Pipe 100 PSI	LF	74.37	5.85
2007	54"(137cm) Prestressed Conc Pipe 100 PSI	LF	106.81	10.44

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2008	60"(152cm) Prestressed Conc Pipe 100 PSI	LF	122.56	11.72
2009	66"(167cm) Prestressed Conc Pipe 100 PSI	LF	207.24	12.63
2011	72"(183cm) Prestressed Conc Pipe 100 PSI	LF	244.87	12.51
2012	78"(198cm) Prestressed Conc Pipe 100 PSI	LF	268.63	14.45
2013	84"(213cm) Prestressed Conc Pipe 100 PSI	LF	284.84	14.41
2014	90"(228cm) Prestressed Conc Pipe 100 PSI	LF	320.32	19.56
2015	96"(244cm) Prestressed Conc Pipe 100 PSI	LF	336.54	28.98
2016	102"(259cm) Prstr Concrete Pipe 100 PSI	LF	396.86	31.41
2017	108"(274cm) Prstr Concrete Pipe 100 PSI	LF	413.08	31.28
2018	114"(290cm) Prstr Concrete Pipe 100 PSI	LF	429.29	39.37
2019	120"(305cm) Prstr Concrete Pipe 100 PSI	LF	475.79	39.72
2021	126"(320cm) Prstr Concrete Pipe 100 PSI	LF	492.01	39.63
2022	132"(335cm) Prstr Concrete Pipe 100 PSI	LF	508.23	39.54
2023	138"(351cm) Prstr Concrete Pipe 100 PSI	LF	524.45	39.42
2024	144"(366cm) Prstr Concrete Pipe 100 PSI	LF	540.67	39.33

02650 Water Systems

02658 0010 Piping, water distribution, reinforced concrete 150 PSI

02658 2999 Concrete cylinder pipe

3000	Piping, water dist, 15" dia, 150 PSI, CCP, 40' L	LF	57.92	3.06
3010	Piping, water dist, 24" dia, 150 PSI, CCP, 40' L	LF	74.51	4.33
3040	Piping, water dist, 36" dia, 150 PSI, CCP, 40' L	LF	124.71	7.39
3050	Piping, water dist, 48" dia, 150 PSI, CCP, 40' L	LF	164.54	7.74

02658 3059 Prestressed concrete cylinder pipe

3060	Piping, water dist, 60" dia, 150 PSI, PCCP, 24' L	LF	206.21	11.85
3070	Piping, water dist, 72" dia, 150 PSI, PCCP, 24' L	LF	245.78	11.56
3080	Piping, water dist, 84" dia, 150 PSI, PCCP, 24' L	LF	303.17	14.12
3090	Piping, water dist, 96" dia, 150 PSI, PCCP, 24' L	LF	365.53	19.69
3100	Piping, water dist, 108" dia, 150 PSI, PCCP, 24' L	LF	618.29	44.91
3102	Piping, water dist, 120" dia, 150 PSI, PCCP, 24' L	LF	941.68	75.37
3104	Piping, water dist, 144" dia, 150 PSI, PCCP, 24' L	LF	1,203.15	83.59

02658 3109 Concrete cylinder pipe elbow, 90_

3110	Piping, water dist, 12" dia, CCP elbow, 90 deg, 150 PSI	EA	202.18	54.78
3140	Piping, water dist, 24" dia, CCP elbow, 90 deg, 150 PSI	EA	679.52	177.33
3150	Piping, water dist, 36" dia, CCP elbow, 90 deg, 150 PSI	EA	703.57	161.20
3160	Piping, water dist, 48" dia, CCP elbow, 90 deg, 150 PSI	EA	854.54	195.58

02658 3169 Prestressed concrete cylinder pipe elbow, 90_

3170	Piping, water dist, 60" dia, PCCP elbow, 90 deg, 150 PSI	EA	1,297.20	296.05
3180	Piping, water dist, 72" dia, PCCP elbow, 90 deg, 150 PSI	EA	2,299.49	502.16
3190	Piping, water dist, 84" dia, PCCP elbow, 90 deg, 150 PSI	EA	2,145.90	397.52
3200	Piping, water dist, 96" dia, PCCP elbow, 90 deg, 150 PSI	EA	16,088.87	2,912.34
3210	Piping, water dist, 108" dia, PCCP elbow, 90 deg, 150 PSI	EA	18,819.07	3,015.52
3220	Piping, water dist, 120" dia, PCCP elbow, 90 deg, 150 PSI	EA	24,724.19	4,080.01
3225	Piping, water dist, 144" dia, PCCP elbow, 90 deg, 150 PSI	EA	30,370.83	4,156.25

02658 3229 Concrete cylinder pipe elbow, 45_

3230	Piping, water dist, 12" dia, CCP elbow, 45 deg, 150 PSI	EA	224.14	61.47
3250	Piping, water dist, 24" dia, CCP elbow, 45 deg, 150 PSI	EA	679.62	190.54
3260	Piping, water dist, 36" dia, CCP elbow, 45 deg, 150 PSI	EA	1,122.78	261.17
3270	Piping, water dist, 48" dia, CCP elbow, 45 deg, 150 PSI	EA	1,311.53	308.56

02658 3279 Prestressed concrete cylinder pipe elbow, 45_

3280	Piping, water dist, 60" dia, PCCP elbow, 45 deg, 150 PSI	EA	2,011.83	455.97
3290	Piping, water dist, 72" dia, PCCP elbow, 45 deg, 150 PSI	EA	2,675.23	595.46
3300	Piping, water dist, 84" dia, PCCP elbow, 45 deg, 150 PSI	EA	3,559.01	728.13
3310	Piping, water dist, 96" dia, PCCP elbow, 45 deg, 150 PSI	EA	13,120.55	2,706.19
3320	Piping, water dist, 108" dia, PCCP elbow, 45 deg, 150 PSI	EA	15,809.29	2,926.13
3330	Piping, water dist, 120" dia, PCCP elbow, 45 deg, 150 PSI	EA	19,569.01	3,736.43
3340	Piping, water dist, 144" dia, PCCP elbow, 45 deg, 150 PSI	EA	24,183.55	3,960.42

02661 0010 Piping, water distribution, black steel Exterior

Note: Thickness Based On 2 Pct Deflection With 10 Ft (3M) Cover

02661 0990 Pipe, black stl, A53, 20' L

Note: plain end, welded joints X-Ray Testing Not Included

02661 0998 3/16" to 1/4" thick wall

0999	8"(20cm) Dia Uncoated Steel Pipe 3/16" Wall Thickness, PE, Welde	LF	31.79	7.23
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MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1000	Piping, water dist, 8" dia, blk steel, pl end, welded, 1/4" wall	LF	31.75	7.55
1009	10"(25cm) Dia Uncoat Steel Pipe 3/16" Wall Thickness, PE, Welded	LF	34.13	7.51
1010	Piping, water dist, 10" dia, blk stl, pl end, welded, 1/4" wall	LF	34.52	7.37
1019	12"(31cm) Dia Uncoat Steel Pipe 3/16" Wall Thickness, PE, Welded	LF	36.34	7.79
1020	Piping, water dist, 12" dia, blk stl, pl end, welded, 1/4" wall	LF	36.91	5.17
1024	14"(36cm) Dia Uncoat Steel Pipe 3/16" Wall Thickness, PE, Welded	LF	40.46	8.07
1026	14"(36cm) Dia Uncoat Steel Pipe 1/4" Wall Thickness, PE, Welded	LF	41.12	8.39
1028	16"(41cm) Dia Uncoat Steel Pipe 3/16" Wall Thickness, PE, Welded	LF	42.72	8.81
1029	16"(41cm) Dia Uncoat Steel Pipe 1/4" Wall Thickness, PE, Welded	LF	43.47	8.77
1030	Piping, water dist, 18" dia, blk stl, pl end, welded, 1/4" wall	LF	46.67	6.48
1032	20"(51cm) Dia Uncoat Steel Pipe 1/4" Wall Thickness, PE, Welded	LF	49.53	9.80
02661 1038 5/16" thick wall				
1040	Piping, water dist, 12" dia, blk stl, pl end, welded, 5/16" wall	LF	27.93	5.22
1042	14"(36cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	51.38	8.91
1044	16"(41cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	56.29	9.27
1048	18"(46cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	63.44	10.49
1050	20"(51cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	67.42	10.38
1052	24"(61cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	80.43	11.95
1054	30"(76cm) Dia Uncoat Steel Pipe 5/16" Wall Thickness, PE, Welded	LF	98.50	13.88
1060	Piping, water dist, 36" dia, blk stl, pl end, welded, 5/16" wall	LF	140.92	16.09
02661 1068 3/8" thick wall				
1070	Piping, water dist, 18" dia, blk stl, pl end, welded, 3/8" wall	LF	85.92	12.97
1072	20"(51cm) Dia Uncoat Steel Pipe 3/8" Wall Thickness, PE, Welded	LF	93.19	9.56
1080	Piping, water dist, 24" dia, blk stl, pl end, welded, 3/8" wall	LF	106.75	13.62
1090	Piping, water dist, 30" dia, blk stl, pl end, welded, 3/8" wall	LF	130.78	16.93
1091	36"(91cm) Dia Uncoat Steel Pipe 3/8" Wall Thickness, PE, Welded	LF	156.91	15.11
02661 1098 1/2" thick wall				
1100	Piping, water dist, 36" dia, blk stl, pl end, welded, 1/2" wall	LF	172.54	18.00
1108	42"(106cm) Dia Uncoat Steel Pipe 1/2" Wall Thickness, PE, Welded	LF	200.87	16.97
1110	Piping, water dist, 48" dia, blk stl, pl end, welded, 1/2" wall	LF	227.96	29.38
1114	54"(137cm) Dia Uncoat Steel Pipe 1/2" Wall Thickness, PE, Welded	LF	265.70	20.89
1120	Piping, water dist, 60" dia, blk stl, pl end, welded, 1/2" wall	LF	303.60	23.88
1122	66"(168cm) Dia Uncoat Steel Pipe 1/2" Wall Thickness, PE, Welded	LF	378.88	27.15
1130	Piping, water dist, 72" dia, blk stl, pl end, welded, 1/2" wall	LF	417.57	33.44
1131	78"(198cm) Dia Uncoat Steel Pipe 1/2" Wall Thickness, PE, Welded	LF	452.33	19.59
02661 1132 7/16" thick wall				
1132	24"(61cm) Dia Uncoat Steel Pipe 7/16" Wall Thickness, PE, Welded	LF	104.01	11.60
1133	30"(76cm) Dia Uncoat Steel Pipe 7/16" Wall Thickness, PE, Welded	LF	127.62	13.53
1134	36"(91cm) Dia Uncoat Steel Pipe 7/16" Wall Thickness, PE, Welded	LF	153.50	16.21
1135	Piping, water dist, 48" dia, blk stl, pl end, welded, 7/16" wall	LF	219.97	16.84
1136	42"(106cm) Dia Uncoat Steel Pipe 7/16" Wall Thickness, PE, Welded	LF	215.82	17.83
1137	54"(137cm) Dia Uncoat Steel Pipe 7/16" Wall Thickness, PE, Welded	LF	261.85	22.85
02661 1138 5/8" thick wall				
1139	42"(106cm) Dia Uncoat Steel Pipe 5/8" Wall Thickness, PE, Welded	LF	222.56	16.23
1140	Piping, water dist, 48" dia, blk stl, pl end, welded, 5/8" wall	LF	254.46	16.09
1145	54"(137cm) Dia Uncoat Steel Pipe 5/8" Wall Thickness, PE, Welded	LF	292.74	20.71
1150	Piping, water dist, 60" dia, blk stl, pl end, welded, 5/8" wall	LF	331.18	21.78
1152	66"(168cm) Dia Uncoat Steel Pipe 5/8" Wall Thickness, PE, Welded	LF	395.66	24.11
1160	Piping, water dist, 72" dia, blk stl, pl end, welded, 5/8" wall	LF	458.46	20.05
1162	78"(198cm) Dia Uncoat Steel Pipe 5/8" Wall Thickness, PE, Welded	LF	477.62	19.40
1170	Piping, water dist, 84" dia, blk stl, pl end, welded, 5/8" wall	LF	497.35	17.49
1172	90"(229cm) Dia Uncoat Steel Pipe 5/8" Wall Thickness, PE, Welded	LF	532.88	19.31
1180	Piping, water dist, 96" dia, blk stl, pl end, welded, 5/8" wall	LF	535.56	18.38
02661 1188 3/4" thick wall				
1190	Piping, water dist, 60" dia, blk stl, pl end, welded, 3/4" wall	LF	364.42	20.57
1192	66"(168cm) Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	432.59	23.97
1200	Piping, water dist, 72" dia, blk stl, pl end, welded, 3/4" wall	LF	498.90	19.03
1202	78"(198cm) Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	521.00	19.26
1210	Piping, water dist, 84" dia, blk stl, pl end, welded, 3/4" wall	LF	543.67	16.51
1212	90"(229cm) Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	584.89	20.80
1220	Piping, water dist, 96" dia, blk stl, pl end, welded, 3/4" wall	LF	626.14	17.77
1222	102"(259cm) Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	682.16	22.93
1230	Piping, water dist, 108" dia, blk stl, pl end, welded, 3/4"	LF	672.86	17.26
1232	114"(290cm) Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	703.24	20.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1240	Piping, water dist, 120" dia, blk stl, pl end, welded, 3/4"	LF	733.78	16.46
1242	126"(320cm)Dia Uncoat Steel Pipe 3/4" Wall Thickness, PE, Welded	LF	771.54	21.17
02661 1248	7/8" thick wall			
1250	Piping, water dist, 72" dia, blk stl, pl end, welded, 7/8" wall	LF	542.97	24.34
1252	78"(198cm) Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	565.70	19.49
1260	Piping, water dist, 84" dia, blk stl, pl end, welded, 7/8" wall	LF	588.94	15.67
1262	90"(229cm) Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	646.53	20.66
1270	Piping, water dist, 96" dia, blk stl, pl end, welded, 7/8" wall	LF	703.73	17.40
1272	102"(259cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	745.99	20.61
1280	Piping, water dist, 108" dia, blk stl, pl end, welded, 7/8"	LF	787.74	17.58
1282	114"(290cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	812.27	20.52
1290	Piping, water dist, 120" dia, blk stl, pl end, welded, 7/8"	LF	836.17	30.08
1291	126"(320cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	878.13	38.57
1292	132"(335cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	919.96	38.52
1293	138"(351cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	961.86	38.43
1294	144"(366cm)Dia Uncoat Steel Pipe 7/8" Wall Thickness, PE, Welded	LF	1,003.69	38.38
02661 1298	1" to 1-1/4" thick wall			
1300	Piping, water dist, 84" dia, blk stl, pl end, welded, 1" wall	LF	639.13	16.00
1302	90"(229cm) Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	673.61	22.83
1310	Piping, water dist, 96" dia, blk stl, pl end, welded, 1" wall	LF	760.30	17.58
1312	102"(259cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	796.74	22.11
1313	102"(259cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	801.57	41.83
1314	108"(274cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	831.60	22.11
1315	114"(290cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	868.30	22.06
1316	114"(290cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	874.60	41.65
1317	120"(305cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	904.87	38.48
1318	126"(320cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	939.71	41.69
1319	126"(320cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	946.03	41.51
1320	Piping, water dist, 132" dia, blk stl, pl end, welded, 1" wall	LF	976.19	29.10
1321	132"(335cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	982.75	41.41
1322	138"(351cm)Dia Uncoat Steel Pipe 1" Wall Thickness, PE, Welded	LF	1,015.67	38.29
1323	138"(351cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	1,022.09	41.37
1330	Piping, water dist, 144" dia, blk stl, pl end, welded, 1" wall	LF	1,054.80	29.10
1331	144"(366cm)Dia Uncoat Steel Pipe 1-1/8" Wall Thickness, PE, Welded	LF	1,088.19	41.32
02661 1338	1-1/4" thick wall			
1340	Piping, water dist, 1.125" wall, 108" dia, blk stl, pl end,	LF	998.52	33.25
1350	Piping, water dist, 1.125" wall, 120" dia, blk stl, pl end,	LF	1,080.66	32.88
1360	Piping, water dist, 132" dia, blk stl, pl end, welded, 1.25"	LF	1,275.89	60.30
1361	138"(351cm)Dia Uncoat Steel Pipe 1-1/4" Wall Thickness, PE, Welded	LF	1,292.05	84.74
1370	Piping, water dist, 144" dia, blk stl, pl end, welded, 1.25"	LF	1,311.58	57.32
02661 1397	Coupling dresser			
1398	2"(5cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	41.57	3.82
1399	3"(8cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	72.93	7.64
1400	Piping, water dist, blk steel, coupling, dresser, 4" pipe	EA	104.88	7.11
1410	Piping, water dist, blk steel, coupling, dresser, 6" pipe	EA	160.50	9.83
1420	Piping, water dist, blk steel, coupling, dresser, 8" pipe	EA	210.17	11.99
1430	Piping, water dist, blk steel, coupling, dresser, 10" pipe	EA	368.58	15.64
1440	Piping, water dist, blk steel, coupling, dresser, 12" pipe	EA	412.72	19.07
1442	14"(36cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	454.96	31.33
1444	16"(41cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	497.20	33.54
1450	Piping, water dist, blk steel, coupling, dresser, 18" pipe	EA	539.98	21.47
1452	20"(51cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	586.58	43.45
1460	Piping, water dist, blk steel, coupling, dresser, 24" pipe	EA	633.49	22.03
1470	Piping, water dist, blk steel, coupling, dresser, 30" pipe	EA	687.59	21.61
1480	Piping, water dist, blk steel, coupling, dresser, 36" pipe	EA	728.61	19.54
1482	42"(106cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	884.53	61.58
1490	Piping, water dist, blk steel, coupling, dresser, 48" pipe	EA	1,039.89	26.12
1492	54"(137cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	1,400.17	81.26
1500	Piping, water dist, blk steel, coupling, dresser, 60" pipe	EA	1,760.17	48.90
1502	66"(167cm) Dia Dresser Coupling For Plain End Welded Steel Pipe	EA	1,957.93	124.81
1510	Piping, water dist, blk steel, coupling, dresser, 72" pipe	EA	2,156.18	68.72
02661 1609	Pipe coating, coal tar epoxy, kraft paper wrap			
1610	Piping, water dist, kraft paper wrap, 12" OD, coating, coal tar	LF	2.60	
1612	14"(36cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	3.03	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1614	16"(41cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	3.47	
1615	Piping, water dist, kraft paper wrap, 18" OD, coating, coal tar	LF	3.91	
1618	20"(51cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	4.43	
1620	Piping, water dist, kraft paper wrap, 24" OD, coating, coal tar	LF	5.52	
1625	Piping, water dist, kraft paper wrap, 30" OD, coating, coal tar	LF	6.08	
1630	Piping, water dist, kraft paper wrap, 36" OD, coating, coal tar	LF	8.20	
1632	42"(106cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	16.93	
1635	Piping, water dist, kraft paper wrap, 48" OD, coating, coal tar	LF	33.33	
1636	54"(137cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	33.48	
1640	Piping, water dist, kraft paper wrap, 60" OD, coating, coal tar	LF	33.64	
1642	66"(167cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	36.40	
1645	Piping, water dist, kraft paper wrap, 72" OD, coating, coal tar	LF	39.16	
1647	78"(108cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	41.86	
1650	Piping, water dist, kraft paper wrap, 84" OD, coating, coal tar	LF	44.54	
1654	90"(228cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	49.78	
1655	Piping, water dist, kraft paper wrap, 96" OD, coating, coal tar	LF	55.00	
1657	102"(259cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	64.17	
1660	Piping, water dist, kraft paper wrap, 108" OD, coating, coal tar	LF	73.34	
1662	114"(290cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	83.60	
1665	Piping, water dist, kraft paper wrap, 120" OD, coating, coal tar	LF	93.85	
1667	126"(320cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	130.25	
1670	Piping, water dist, kraft paper wrap, 132" OD, coating, coal tar	LF	166.65	
1672	138"(351cm) Dia OD Pipe Coating Coal Tar Epoxy, Kraft Paper Wrap	LF	179.06	
1675	Piping, water dist, kraft paper wrap, 144" OD, coating, coal tar	LF	191.46	
02661 1709 Pipe coating, mesh reinforced cement coating				
Note: Reinforcing. Applied At Fabrication Shop At Thicknesses Ranging Between 1" And 2".				
1710	Piping, water dist, w/1"-2" mesh reinf cement coat, 12" OD, blk	LF	10.85	
1712	14"(36cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	12.08	
1714	16"(41cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	13.31	
1715	Piping, water dist, w/1"-2" mesh reinf cement coat, 18" OD, blk	LF	14.54	
1718	20"(51cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	16.51	
1720	Piping, water dist, w/1"-2" mesh reinf cement coat, 24" OD, blk	LF	20.44	
1725	Piping, water dist, w/1"-2" mesh reinf cement coat, 30" OD, blk	LF	26.49	
1730	Piping, water dist, w/1"-2" mesh reinf cement coat, 36" OD, blk	LF	33.83	
1733	42"(106cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	35.82	
1735	Piping, water dist, w/1"-2" mesh reinf cement coat, 48" OD, blk	LF	37.84	
1738	54"(137cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	39.35	
1740	Piping, water dist, w/1"-2" mesh reinf cement coat, 60" OD, blk	LF	40.86	
1742	66"(167cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	51.53	
1745	Piping, water dist, w/1"-2" mesh reinf cement coat, 72" OD, blk	LF	62.20	
1747	78"(198cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	65.57	
1750	Piping, water dist, w/1"-2" mesh reinf cement coat, 84" OD, blk	LF	68.95	
1752	90"(228cm) Dia Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	74.25	
1755	Piping, water dist, w/1"-2" mesh reinf cement coat, 96" OD, blk	LF	79.56	
1757	102"(259cm) D Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	81.41	
1760	Piping, water dist, w/1"-2" mesh reinf cement coat, 108"OD, blk	LF	83.27	
1762	114"(290cm) D Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	85.79	
1765	Piping, water dist, w/1"-2" mesh reinf cement coat, 120"OD, blk	LF	88.31	
1767	126"(320cm) D Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	90.83	
1770	Piping, water dist, w/1"-2" mesh reinf cement coat, 132"OD, blk	LF	95.86	
1772	138"(351cm) D Cement Coated Pipe 1" to 2" Cement Coating w/Mesh	LF	94.40	
1775	Piping, water dist, w/1"-2" mesh reinf cement coat, 144"OD, blk	LF	98.38	
02661 1809 Stl pipe, A53 exw, cement lined, w/coal tar enamel Backfill Not Included.				
Note: Dresser Coupling Joint On 8 In (21Cm) To 18 In (46Cm) Stab Joint On 24 In (61Cm) To 48 In (122Cm)				
1810	Piping, water dist, 8"OD, 3/16"wall, blk stl, cem lined, coal	LF	23.86	1.57
1815	Piping, water dist, 10"OD, 3/16"wall, blk stl, cem lined, coal	LF	28.24	1.65
1820	Piping, water dist, 12"OD, 1/4"wall, blk stl, cem lined, coal	LF	33.86	1.77
1822	14"(36cm) Cement Lined Stl Pipe 1/4" Wall, Coal Tar Enamel Ext	LF	47.93	1.85
1824	16"(41cm) Cement Lined Stl Pipe 1/4" Wall, Coal Tar Enamel Ext	LF	52.47	1.93
1825	Piping, water dist, 18"OD, 5/16"wall, blk stl, cem lined, coal	LF	66.34	2.01
1830	Piping, water dist, 24"OD, 3/8"wall, blk stl, cem lined, coal	LF	93.82	2.05
1835	Piping, water dist, 30"OD, 3/8"wall, blk stl, cem lined, coal	LF	104.79	2.05
1840	Piping, water dist, 36"OD, 3/8"wall, blk stl, cem lined, coal	LF	126.19	2.25
1842	42"(106cm) Cement Lined Stl Pipe 1/2" Wall, Coal Tar Enamel Ext	LF	162.36	2.33

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1845	Piping, water dist, 48"OD, 1/2"wall, blk stl, cem lined, coal	LF	177.32	2.41
02662 0010	Piping, water distribution, copper			
02662 1999	Tubing, type K			
2000	Piping, water dist, 3/4" dia, 20' joints, copper, tubing, type	LF	6.24	0.57
2500	1" Dia, Type K, Copper Tubing (2.5cm) Dia, Water Distribution	LF	3.91	0.54
3000	Piping, water dist, 1.5" dia, 20' joints, copper, tubing, type	LF	10.03	0.64
3020	Piping, water dist, 2" dia, 20' joints, copper, tubing, type K	LF	13.90	0.75
3040	Piping, water dist, 2.5" dia, 20' joints, copper, tubing, type	LF	16.09	0.78
3060	Piping, water dist, 3" dia, 20' joints, copper, tubing, type K	LF	21.21	0.82
02663 0010	Piping, water distribution, chilled water system			
02663 1007	Align and Tackweld			
Note: Insulation And Non-Metalic Casing, Unloaded, Distributed, And Placed By S.P.Hyd. Crane. Thick Insulation And Non-Metalic Casing, Unloaded, Distributed, And Placed By Hand, Align And Tackweld On Sleepers. Thick Insulation And Non-Metalic Casing, Unloaded, Distributed, And Placed By S.P.Hyd. Crane, Aligned And Tackweld On Trench Bottom				
02663 1008	Pipe, 2" insul black stl, A53, on sleepers			
1010	Piping, CHW, 2"PU insul blk stl, 20'L, 1.25"dia, align & tackweld,	LF	9.81	0.43
1020	Piping, CHW, 2"PU insul blk stl, 20'L, 1.5" dia, align & tackweld,	LF	10.81	0.43
1030	Piping, CHW, 2"PU insul blk stl, 20'L, 2" dia, align & tackweld,	LF	9.51	0.82
1040	Piping, CHW, 2"PU insul blk stl, 20'L, 2.5" dia, align & tackweld,	LF	11.04	0.82
1050	Piping, CHW, 2"PU insul blk stl, 20'L, 3" dia, align & tackweld,	LF	13.65	0.82
1060	Piping, CHW, 2"PU insul blk stl, 20'L, 4" dia, align & tackweld,	LF	16.14	1.17
1070	Piping, CHW, 2"PU insul blk stl, 20'L, 5" dia, align & tackweld,	LF	20.61	1.36
1080	Piping, CHW, 2"PU insul blk stl, 20'L, 6" dia, align & tackweld,	LF	22.99	1.51
1090	Piping, CHW, 2"PU insul blk stl, 20'L, 8" dia, align & tackweld,	LF	30.10	1.51
1092	10" Dia Insul Std Blk Stl Pipe (25cm)D Align & Tckwld on Slprs	LF	43.57	1.68
1100	Piping, CHW, 2"PU insul blk stl, 20'L, 12" dia, align & tackweld,	LF	50.24	2.10
1102	14" Dia Insul Std Blk Stl Pipe (36cm)D Align & Tckwld on Slprs	LF	73.11	2.05
1104	16" Dia Insul Std Blk Stl Pipe (41cm)D Align & Tckwld on Slprs	LF	81.77	2.05
02663 1109	Pipe, 2" insul black stl, A53, on trench bottom			
1110	Piping, CHW, 2"PU insul blk stl, 40'L, 18" dia, align & tackweld,	LF	74.52	2.02
1112	20" Dia Insul Std Blk Stl Pipe (51cm)D Align & Tckwld in Trench	LF	92.64	2.33
1120	Piping, CHW, 2"PU insul blk stl, 40'L, 24" dia, align & tackweld,	LF	108.28	2.38
1130	Piping, CHW, 2"PU insul blk stl, 40'L, 30" dia, align & tackweld,	LF	154.36	3.69
1140	Piping, CHW, 2"PU insul blk stl, 40'L, 36" dia, align & tackweld,	LF	206.30	4.99
1142	42" Dia Insul Std Blk Stl Pipe (106cm) Align & Tckwld in Trench	LF	259.14	4.93
02663 1149	Fittings, A53, on sleepers			
1150	Fitting, CHW, 2" PU insul blk stl, elbow, 1.5", tackweld,	EA	220.46	6.25
1160	Fitting, CHW, 2" PU insul blk stl, elbow, 3", tackweld, slprs	EA	313.34	12.60
1170	Fitting, CHW, 2" PU insul blk stl, elbow, 4", tackweld, slprs	EA	381.41	15.47
1180	Fitting, CHW, 2" PU insul blk stl, elbow, 6", tackweld, slprs	EA	497.52	14.02
1190	Fitting, CHW, 2" PU insul blk stl, elbow, 8", tackweld, slprs	EA	616.55	14.09
1200	Fitting, CHW, 2" PU insul blk stl, tee, 1.5", tackweld, slprs	EA	409.89	9.44
1210	Fitting, CHW, 2" PU insul blk stl, tee, 3", tackweld, slprs	EA	535.04	17.51
1220	Fitting, CHW, 2" PU insul blk stl, tee, 4", tackweld, slprs	EA	600.69	20.34
1230	Fitting, CHW, 2" PU insul blk stl, tee, 6", tackweld, slprs	EA	821.66	19.20
1240	Fitting, CHW, 2" PU insul blk stl, tee, 8", tackweld, slprs	EA	940.55	20.33
1250	Fitting, CHW, 2" PU insul blk stl, reducer, 3", tackweld,	EA	138.64	3.81
1260	Fitting, CHW, 2" PU insul blk stl, reducer, 4", tackweld,	EA	171.06	4.87
1270	Fitting, CHW, 2" PU insul blk stl, reducer, 6", tackweld,	EA	223.63	4.40
1280	Fitting, CHW, 2" PU insul blk stl, reducer, 8", tackweld,	EA	280.55	4.90
1290	Fitting, CHW, 2" PU insul blk stl, anchor, 4", tackweld, slprs	EA	393.57	14.79
1300	Fitting, CHW, 2" PU insul blk stl, anchor, 6", tackweld, slprs	EA	452.56	13.34
1310	Fitting, CHW, 2" PU insul blk stl, anchor, 8", tackweld, slprs	EA	499.06	14.31
1320	Fitting, CHW, 2" PU insul blk stl, cap, 1.5", tackweld, slprs	EA	50.79	1.49
1330	Fitting, CHW, 2" PU insul blk stl, cap, 3", tackweld, slprs	EA	89.60	3.45
1340	Fitting, CHW, 2" PU insul blk stl, cap, 4", tackweld, slprs	EA	94.79	3.70
1350	Fitting, CHW, 2" PU insul blk stl, cap, 6", tackweld, slprs	EA	120.51	3.34
1360	Fitting, CHW, 2" PU insul blk stl, cap, 8", tackweld, slprs	EA	151.02	3.74
1362	10" Dia Insul Std Blk Stl Cap (25cm)Dia, Tackweld on Sleepers	EA	186.42	3.78
1365	Fitting, CHW, 2" PU insul blk stl, cap, 12", tackweld, slprs	EA	218.27	3.81
1366	14" Dia Insul Std Blk Stl Cap (36cm)Dia, Tackweld on Sleepers	EA	254.63	4.47
1367	16" Dia Insul Std Blk Stl Cap (41cm)Dia, Tackweld on Sleepers	EA	291.00	5.08
02663 1369	Fittings, A53, on trench bottom			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1369	10" Dia Insul Std Blk Stl Elbow (25cm)Dia, Tackweld in Trench	EA	754.30	17.05
1370	Fitting, CHW, 2" PU insul blk stl, elbow, 12", tackweld,	EA	905.16	20.44
1372	14" Dia Insul Std Blk Stl Elbow (36cm)Dia, Tackweld in Trench	EA	1,089.27	23.24
1374	16" Dia Insul Std Blk Stl Elbow (41cm)Dia, Tackweld in Trench	EA	1,273.40	26.09
1380	Fitting, CHW, 2" PU insul blk stl, elbow, 18", tackweld,	EA	1,457.53	28.88
1382	20" Dia Insul Std Blk Stl Elbow (51cm)Dia, Tackweld in Trench	EA	1,856.43	34.10
1390	Fitting, CHW, 2" PU insul blk stl, elbow, 24", tackweld,	EA	2,255.30	39.26
1400	Fitting, CHW, 2" PU insul blk stl, elbow, 30", tackweld,	EA	2,992.03	43.24
1410	Fitting, CHW, 2" PU insul blk stl, elbow, 36", tackweld,	EA	4,049.44	54.11
1412	42" Dia Insul Std Blk Stl Elbow (106cm)Dia, Tackweld in Trench	EA	4,724.32	63.15
1418	10" Dia Insul Std Blk Stl Tee (25cm)Dia, Tackweld in Trench	EA	1,057.29	20.55
1420	Fitting, CHW, 2" PU insul blk stl, tee, 12", tackweld, trench	EA	1,268.74	24.63
1422	14" Dia Insul Std Blk Stl Tee (36cm)Dia, Tackweld in Trench	EA	1,526.98	28.34
1424	16" Dia Insul Std Blk Stl Tee (41cm)Dia, Tackweld in Trench	EA	1,785.23	32.11
1430	Fitting, CHW, 2" PU insul blk stl, tee, 18", tackweld, trench	EA	2,043.51	35.82
1432	20" Dia Insul Std Blk Stl Tee (51cm)Dia, Tackweld in Trench	EA	2,883.35	40.18
1440	Fitting, CHW, 2" PU insul blk stl, tee, 24", tackweld, trench	EA	3,093.06	44.54
1450	Fitting, CHW, 2" PU insul blk stl, tee, 30", tackweld, trench	EA	4,514.71	54.05
1460	Fitting, CHW, 2" PU insul blk stl, tee, 36", tackweld, trench	EA	6,493.68	74.06
1462	42" Dia Insul Std Blk Stl Tee (106cm)Dia, Tackweld in Trench	EA	7,452.20	86.43
1468	10"Dia Insul Std Blk Stl Reducer (25cm)Dia, Tackweld in Trench	EA	377.32	5.06
1470	Fitting, CHW, 2" PU insul blk stl, reducer, 12", tackweld,	EA	463.23	6.08
1472	14"Dia Insul Std Blk Stl Reducer (36cm)Dia, Tackweld in Trench	EA	514.21	7.05
1474	16"Dia Insul Std Blk Stl Reducer (41cm)Dia, Tackweld in Trench	EA	592.06	8.07
1480	Fitting, CHW, 2" PU insul blk stl, reducer, 18", tackweld,	EA	672.55	9.09
1482	20"Dia Insul Std Blk Stl Reducer (51cm)Dia, Tackweld in Trench	EA	823.40	10.27
1490	Fitting, CHW, 2" PU insul blk stl, reducer, 24", tackweld,	EA	974.23	11.46
1500	Fitting, CHW, 2" PU insul blk stl, reducer, 30", tackweld,	EA	1,416.29	13.55
1510	Fitting, CHW, 2" PU insul blk stl, reducer, 36", tackweld,	EA	1,947.91	17.53
1512	42"Dia Insul Std Blk Stl Reducer (106cm)Dia, Tackweld in Trench	EA	2,272.56	20.44
1518	10" Dia Insul Std Blk Stl Anchor (25cm) Tckwld in Trench, No Con	EA	344.10	8.01
1520	Fitting, CHW, 2" PU insul blk stl, anchor, 12", tackweld,	EA	406.40	9.63
1522	14" Dia Insul Std Blk Stl Anchor (36cm) Tckwld in Trench, No Con	EA	457.57	11.19
1524	16" Dia Insul Std Blk Stl Anchor (41cm) Tckwld in Trench, No Con	EA	518.14	12.86
1530	Fitting, CHW, 2" PU insul blk stl, anchor, 18", tackweld,	EA	586.76	17.75
1532	20" Dia Insul Std Blk Stl Anchor (51cm) Tckwld in Trench, No Con	EA	657.46	16.03
1540	Fitting, CHW, 2" PU insul blk stl, anchor, 24", tackweld,	EA	782.35	19.26
1550	Fitting, CHW, 2" PU insul blk stl, anchor, 30", tackweld,	EA	965.57	25.39
1560	Fitting, CHW, 2" PU insul blk stl, anchor, 36", tackweld,	EA	1,173.78	29.64
1562	42" Dia Insul Std Blk Stl Anchor (106cm) Tckwld in Trench, No Con	EA	1,369.38	34.58
02663 1569 Weld in place and install collar Insulation Collar, Shrink Sleeve, And Rock Sleeve.				
02663 1569 Pre-mold shrink/rock collar, on sleepers				
1570	Piping, CHW, 1.5", field weld/inst shrink collar, blk stl, no slprs	EA	110.87	21.62
1580	Piping, CHW, 3", field weld/inst shrink collar, blk stl, no slprs	EA	240.30	56.21
1590	Piping, CHW, 4", field weld/inst shrink collar, blk stl, no slprs	EA	289.04	63.57
1600	Piping, CHW, 6", field weld/inst shrink collar, blk stl, no slprs	EA	381.70	84.61
1610	Piping, CHW, 8", field weld/inst shrink collar, blk stl, no slprs	EA	449.43	96.71
1612	10" Std Fieldweld Pipe, Preinsul (25cm)Dia, On Slprs Across Trench	EA	508.21	106.77
1620	Piping, CHW, 12", field weld/inst shrink collar, blk stl, no slprs	EA	566.78	116.82
1621	14" Std Fieldweld Pipe, Preinsul (36cm)Dia, On Slprs Across Trench	EA	516.53	111.76
1622	16" Std Fieldweld Pipe, Preinsul (41cm)Dia, On Slprs Across Trench	EA	570.97	130.81
02663 1629 Pre-mold shrink/rock collar, on trench bottom				
1630	Piping, CHW, 18", field weld, trench bot, inst shrink collar, insul bl	EA	742.60	179.06
1638	20" Std Fieldweld Pipe, Preinsul (51cm) Dia, On Trench Bottom	EA	911.73	228.09
1640	Piping, CHW, 24", field weld, trench bot, inst shrink collar, insul bl	EA	1,080.12	233.06
1650	Piping, CHW, 30", field weld, trench bot, inst shrink collar, insul bl	EA	1,398.38	245.97
1660	Piping, CHW, 36", field weld, trench bot, inst shrink collar, insul bl	EA	1,474.22	258.93
1662	42" Std Fieldweld Pipe, Preinsul (106cm)Dia, On Trench Bottom	EA	2,286.14	391.76
02664 0010 Piping, water distribution, ductile iron				
02664 2000 Pipe, class 50 water piping, cement lined				
02664 2019 Mechanical joint				
2020	Piping, water dist, 4" dia, DI, cement lined, CL 50, 18' L, mech	LF	12.56	1.70
2040	Piping, water dist, 6" dia, DI, cement lined, CL 50, 18' L, mech	LF	14.45	1.86
2060	Piping, water dist, 8" dia, DI, cement lined, CL 50, 18' L, mech	LF	17.67	2.12

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2062	10" Dia Mechanical Joint, DI Pipe (25cm) Diameter	LF	24.44	2.79
2100	Piping, water dist, 12" dia, DI, cement lined, CL 50, 18' L, mec	LF	28.54	3.02
2102	14" Dia Mechanical Joint, DI Pipe (36cm) Diameter	LF	35.89	3.52
2104	16" Dia Mechanical Joint, DI Pipe (41cm) Diameter	LF	41.99	3.78
2160	Piping, water dist, 18" dia, DI, cement lined, CL 50, 18' L, mec	LF	49.87	4.58
2162	20" Dia Mechanical Joint, DI Pipe (51cm) Diameter	LF	57.81	5.39
2180	Piping, water dist, 24" dia, DI, cement lined, CL 50, 18' L, mec	LF	77.61	6.95
02664 2189 Push joint (stab)				
Note: Gaskets, Glands And Bolts For Mechanical Joint Pipe And Fittings Are Furnished In Sufficient Quantities To Provide For Each Socket Opening On Pipe And Fittings. Accessories conform to applicable requirements of ANSI/AWWA C111/A21.11. Federal Specification WW-P-421D.				
2200	Piping, water dist, 4" dia, DI, push joint (stab), no fittings	LF	9.51	0.71
2210	Piping, water dist, 6" dia, DI, push joint (stab), no fittings	LF	10.47	0.71
2220	Piping, water dist, 8" dia, DI, push joint (stab), no fittings	LF	13.53	0.71
2222	10"(25cm) Dia Mech DI Push Joint No Fittings	LF	15.65	0.81
2230	Piping, water dist, 12" dia, DI, push joint (stab), no fittings	LF	23.13	1.00
2232	14"(36cm) Dia Mech DI Push Joint No Fittings	LF	23.06	1.03
2234	16"(41cm) Dia Mech DI Push Joint No Fittings	LF	26.01	1.03
2240	Piping, water dist, 18" dia, DI, push joint (stab), no fittings	LF	36.84	1.61
2242	20"(51cm) Dia Mech DI Push Joint No Fittings	LF	32.47	1.28
2250	Piping, water dist, 24" dia, DI, push joint (stab), no fittings	LF	50.37	1.61
2260	Piping, water dist, 30" dia, DI, push joint (stab), no fittings	LF	74.50	1.77
2270	Piping, water dist, 36" dia, DI, push joint (stab), no fittings	LF	98.88	2.17
2272	42"(106cm) Dia Mech DI Push Joint No Fittings	LF	91.34	1.47
2274	48"(122cm) Dia Mech DI Push Joint No Fittings	LF	115.91	1.98
2276	54"(137cm) Dia Mech DI Push Joint No Fittings	LF	172.20	2.71
02664 2289 Mechanical restrained joint				
2300	Piping, water dist, no fittings, 4" dia, DI, mech restrained	LF	14.04	1.48
2310	Piping, water dist, no fittings, 6" dia, DI, mech restrained	LF	16.00	1.48
2320	Piping, water dist, no fittings, 8" dia, DI, mech restrained	LF	22.14	1.97
2322	10" Dia Mech DI Restrained Joint (25cm) Diameter, No Fittings	LF	22.94	2.17
2330	Piping, water dist, no fittings, 12" dia, DI, mech restrained	LF	31.57	2.37
2332	14" Dia Mech DI Restrained Joint (36cm) Diameter, No Fittings	LF	41.84	2.89
2334	16" Dia Mech DI Restrained Joint (41cm) Diameter, No Fittings	LF	49.39	3.21
2340	Piping, water dist, no fittings, 18" dia, DI, mech restrained	LF	65.09	4.02
2342	20" Dia Mech DI Restrained Joint (51cm) Diameter, No Fittings	LF	77.52	4.38
2350	Piping, water dist, no fittings, 24" dia, DI, mech restrained	LF	92.22	4.06
2360	Piping, water dist, no fittings, 30" dia, DI, mech restrained	LF	138.82	5.02
2370	Piping, water dist, no fittings, 36" dia, DI, mech restrained	LF	174.00	5.98
2372	42" Dia Mech DI Restrained Joint (106cm) Diameter, No Fittings	LF	185.10	6.83
2374	48" Dia Mech DI Restrained Joint (122cm) Diameter, No Fittings	LF	213.18	6.95
2376	54" Dia Mech DI Restrained Joint (137cm) Diameter, No Fittings	LF	291.25	6.99
02664 4500 Fittings, cement lined				
02664 4509 Mechanical joint tee				
4520	14" x 4" Mechanical Joint DI Tee	EA	1,384.65	133.45
4522	14" x 6" Mechanical Joint DI Tee	EA	1,407.66	133.82
4524	14" x 8" Mechanical Joint DI Tee	EA	1,432.97	134.55
4526	14"x 10" Mechanical Joint DI Tee	EA	1,457.14	134.92
4528	14"x 12" Mechanical Joint DI Tee	EA	1,503.17	135.28
4530	14"x 14" Mechanical Joint DI Tee	EA	1,550.34	135.50
4532	16" x 4" Mechanical Joint DI Tee	EA	1,647.36	151.85
4534	16" x 6" Mechanical Joint DI Tee	EA	1,669.22	152.50
4536	16" x 8" Mechanical Joint DI Tee	EA	1,687.63	153.16
4538	16"x 10" Mechanical Joint DI Tee	EA	1,719.85	153.82
4540	16"x 12" Mechanical Joint DI Tee	EA	1,749.77	154.37
4542	16"x 14" Mechanical Joint DI Tee	EA	1,805.00	154.70
4544	16"x 16" Mechanical Joint DI Tee	EA	1,853.33	155.11
4546	20" x 6" Mechanical Joint DI Tee	EA	2,320.13	203.40
4548	20" x 8" Mechanical Joint DI Tee	EA	2,338.54	204.21
4550	20"x 10" Mechanical Joint DI Tee	EA	2,371.91	205.01
4552	20"x 12" Mechanical Joint DI Tee	EA	2,404.12	205.82
4554	20"x 14" Mechanical Joint DI Tee	EA	2,447.85	206.62
4556	20"x 16" Mechanical Joint DI Tee	EA	2,671.08	207.39
4558	20"x 18" Mechanical Joint DI Tee	EA	2,750.48	208.20
4560	20"x 20" Mechanical Joint DI Tee	EA	2,810.31	209.01

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4562	24"x 14" Mechanical Joint DI Tee	EA	2,983.08	221.02
4564	24"x 16" Mechanical Joint DI Tee	EA	3,019.90	226.19
4566	24"x 20" Mechanical Joint DI Tee	EA	3,595.24	226.59
4568	30"x 14" Mechanical Joint DI Tee	EA	4,733.76	228.50
4570	30"x 16" Mechanical Joint DI Tee	EA	4,771.74	228.98
4572	30"x 20" Mechanical Joint DI Tee	EA	4,883.35	229.12
4574	36"x 14" Mechanical Joint DI Tee	EA	6,183.44	257.26
4576	36"x 16" Mechanical Joint DI Tee	EA	6,212.21	257.30
4578	36"x 20" Mechanical Joint DI Tee	EA	6,318.07	257.34
4580	42"x 12" Mechanical Joint DI Tee	EA	8,177.54	265.84
4582	42"x 16" Mechanical Joint DI Tee	EA	8,259.24	266.28
4584	42"x 18" Mechanical Joint DI Tee	EA	8,311.02	268.44
4586	42"x 20" Mechanical Joint DI Tee	EA	8,355.89	271.00
4588	42"x 24" Mechanical Joint DI Tee	EA	8,451.40	271.15
4590	42"x 30" Mechanical Joint DI Tee	EA	10,146.34	271.26
4592	42"x 36" Mechanical Joint DI Tee	EA	12,354.49	271.33
4594	42"x 42" Mechanical Joint DI Tee	EA	12,933.27	271.52
4596	48"x 12" Mechanical Joint DI Tee	EA	10,746.07	322.74
4598	48"x 14" Mechanical Joint DI Tee	EA	10,780.59	323.11
4600	48"x 16" Mechanical Joint DI Tee	EA	10,853.09	325.78
4602	48"x 18" Mechanical Joint DI Tee	EA	10,869.20	328.09
4604	48"x 20" Mechanical Joint DI Tee	EA	10,914.07	328.82
4606	48"x 24" Mechanical Joint DI Tee	EA	11,001.52	328.97
4608	48"x 30" Mechanical Joint DI Tee	EA	11,466.39	329.04
4610	48"x 36" Mechanical Joint DI Tee	EA	13,243.04	329.08
4612	48"x 42" Mechanical Joint DI Tee	EA	16,246.29	329.19
4614	48"x 48" Mechanical Joint DI Tee	EA	16,758.34	329.26
5010	Piping, water dist, DI, mech joint tee, 4" x 3"	EA	340.00	60.35
5015	Piping, water dist, DI, mech joint tee, 4" x 4"	EA	347.39	60.35
5020	Piping, water dist, DI, mech joint tee, 6" x 3"	EA	471.21	84.49
5030	Piping, water dist, DI, mech joint tee, 6" x 4"	EA	478.64	84.49
5035	Piping, water dist, DI, mech joint tee, 6" x 6"	EA	495.39	84.49
5040	Piping, water dist, DI, mech joint tee, 8" x 4"	EA	602.25	102.21
5050	Piping, water dist, DI, mech joint tee, 8" x 6"	EA	689.34	107.94
5055	Piping, water dist, DI, mech joint tee, 8" x 8"	EA	706.78	107.94
5060	Piping, water dist, DI, mech joint tee, 10" x 4"	EA	1,141.80	209.59
5070	Piping, water dist, DI, mech joint tee, 10" x 6"	EA	1,167.95	210.71
5080	Piping, water dist, DI, mech joint tee, 10" x 8"	EA	1,184.93	211.15
5085	Piping, water dist, DI, mech joint tee, 10" x 10"	EA	1,284.00	221.80
5090	Piping, water dist, DI, mech joint tee, 12" x 4"	EA	1,280.75	217.62
5100	Piping, water dist, DI, mech joint tee, 12" x 6"	EA	1,292.42	219.51
5110	Piping, water dist, DI, mech joint tee, 12" x 8"	EA	1,322.82	223.56
5120	Piping, water dist, DI, mech joint tee, 12" x 10"	EA	1,400.62	225.25
5125	Piping, water dist, DI, mech joint tee, 12" x 12"	EA	1,458.20	224.05
5130	Piping, water dist, DI, mech joint tee, 18" x 6"	EA	2,888.54	269.10
5140	Piping, water dist, DI, mech joint tee, 18" x 8"	EA	2,933.09	269.18
5150	Piping, water dist, DI, mech joint tee, 18" x 10"	EA	2,976.22	268.74
5160	Piping, water dist, DI, mech joint tee, 18" x 12"	EA	3,021.83	267.54
5170	Piping, water dist, DI, mech joint tee, 18" x 14"	EA	3,394.51	271.75
5180	Piping, water dist, DI, mech joint tee, 18" x 16"	EA	3,555.03	277.62
5185	Piping, water dist, DI, mech joint tee, 18" x 18"	EA	4,136.32	313.24
5190	Piping, water dist, DI, mech joint tee, 24" x 8"	EA	5,453.75	450.86
5200	Piping, water dist, DI, mech joint tee, 24" x 10"	EA	5,490.87	447.57
5210	Piping, water dist, DI, mech joint tee, 24" x 12"	EA	5,556.64	449.90
5220	Piping, water dist, DI, mech joint tee, 24" x 18"	EA	7,116.45	467.49
5225	Piping, water dist, DI, mech joint tee, 24" x 24"	EA	7,688.72	470.50
5230	Piping, water dist, DI, mech joint tee, 30" x 8"	EA	8,968.71	458.53
5240	Piping, water dist, DI, mech joint tee, 30" x 10"	EA	9,030.23	457.57
5250	Piping, water dist, DI, mech joint tee, 30" x 12"	EA	9,114.03	459.33
5260	Piping, water dist, DI, mech joint tee, 30" x 18"	EA	9,345.80	455.40
5270	Piping, water dist, DI, mech joint tee, 30" x 24"	EA	11,769.06	479.37
5275	Piping, water dist, DI, mech joint tee, 30" x 30"	EA	12,666.44	466.72
5280	Piping, water dist, DI, mech joint tee, 36" x 8"	EA	12,429.04	541.18
5290	Piping, water dist, DI, mech joint tee, 36" x 10"	EA	12,460.33	539.89
5300	Piping, water dist, DI, mech joint tee, 36" x 12"	EA	12,045.58	518.85

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5310	Piping, water dist, DI, mech joint tee, 36" x 18"	EA	13,890.20	586.31
5320	Piping, water dist, DI, mech joint tee, 36" x 24"	EA	14,603.02	601.41
5330	Piping, water dist, DI, mech joint tee, 36" x 30"	EA	16,930.80	551.05
5335	Piping, water dist, DI, mech joint tee, 36" x 36"	EA	17,739.08	550.69
02664 5339	Mechanical joint cross			
Note: See Section 02664-8500 For Additional Mechanical Joint Crosses				
5340	Piping, water dist, DI, mech joint cross, 4" x 4"	EA	329.32	52.26
5350	Piping, water dist, DI, mech joint cross, 6" x 4"	EA	436.05	68.56
5360	Piping, water dist, DI, mech joint cross, 6" x 6"	EA	468.40	68.89
5370	Piping, water dist, DI, mech joint cross, 8" x 4"	EA	543.62	86.83
5380	Piping, water dist, DI, mech joint cross, 8" x 6"	EA	619.86	88.91
5390	Piping, water dist, DI, mech joint cross, 8" x 8"	EA	657.51	87.82
5400	Piping, water dist, DI, mech joint cross, 10" x 4"	EA	1,053.97	175.25
5410	Piping, water dist, DI, mech joint cross, 10" x 6"	EA	1,085.05	181.32
5420	Piping, water dist, DI, mech joint cross, 10" x 8"	EA	1,118.46	181.56
5430	Piping, water dist, DI, mech joint cross, 10" x 10"	EA	1,209.69	183.04
5440	Piping, water dist, DI, mech joint cross, 12" x 4"	EA	1,212.25	199.67
5450	Piping, water dist, DI, mech joint cross, 12" x 6"	EA	1,244.60	197.70
5460	Piping, water dist, DI, mech joint cross, 12" x 8"	EA	1,269.53	199.23
5470	Piping, water dist, DI, mech joint cross, 12" x 10"	EA	1,374.54	201.23
5480	Piping, water dist, DI, mech joint cross, 12" x 12"	EA	1,462.05	210.27
5490	Piping, water dist, DI, mech joint cross, 18" x 6"	EA	3,270.21	330.71
5495	Piping, water dist, DI, mech joint cross, 18" x 8"	EA	3,274.84	321.71
5500	Piping, water dist, DI, mech joint cross, 18" x 10"	EA	3,404.93	325.45
5510	Piping, water dist, DI, mech joint cross, 18" x 12"	EA	3,553.43	328.46
5520	Piping, water dist, DI, mech joint cross, 18" x 18"	EA	4,412.63	327.85
5530	Piping, water dist, DI, mech joint cross, 24" x 8"	EA	5,797.60	504.75
5540	Piping, water dist, DI, mech joint cross, 24" x 10"	EA	6,037.86	512.98
5550	Piping, water dist, DI, mech joint cross, 24" x 12"	EA	6,027.78	503.31
5560	Piping, water dist, DI, mech joint cross, 24" x 18"	EA	8,541.73	556.11
5570	Piping, water dist, DI, mech joint cross, 24" x 24"	EA	9,143.17	531.74
5580	Piping, water dist, DI, mech joint cross, 30" x 8"	EA	9,505.61	512.38
5590	Piping, water dist, DI, mech joint cross, 30" x 10"	EA	9,706.09	518.45
5600	Piping, water dist, DI, mech joint cross, 30" x 12"	EA	9,627.59	506.76
5620	Piping, water dist, DI, mech joint cross, 30" x 18"	EA	8,436.92	413.91
5630	Piping, water dist, DI, mech joint cross, 30" x 24"	EA	13,344.94	538.45
5640	Piping, water dist, DI, mech joint cross, 30" x 30"	EA	14,861.80	503.31
5650	Piping, water dist, DI, mech joint cross, 36" x 8"	EA	18,226.24	852.73
5660	Piping, water dist, DI, mech joint cross, 36" x 10"	EA	16,526.94	763.01
5670	Piping, water dist, DI, mech joint cross, 36" x 12"	EA	17,104.51	782.77
5680	Piping, water dist, DI, mech joint cross, 36" x 18"	EA	17,472.05	764.18
5690	Piping, water dist, DI, mech joint cross, 36" x 24"	EA	18,500.44	771.77
5700	Piping, water dist, DI, mech joint cross, 36" x 30"	EA	22,473.43	704.34
5710	Piping, water dist, DI, mech joint cross, 36" x 36"	EA	23,630.69	681.69
02664 5716	Reducer, mechanical joint x mechanical joint			
5717	8" x 4" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	279.80	47.66
5718	10" x 4" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	447.65	82.00
5719	10" x 8" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	465.24	80.65
5720	Piping, water dist, DI, reducer, nj x nj, 12" x 10"	EA	795.64	145.83
5721	12" x 4" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	578.66	106.09
5722	12" x 8" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	723.36	132.60
5725	14" x 6" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	877.02	106.92
5726	14" x 8" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	964.79	117.62
5730	Piping, water dist, DI, reducer, nj x nj, 14" x 10"	EA	1,052.49	128.30
5740	Piping, water dist, DI, reducer, nj x nj, 14" x 12"	EA	1,220.12	136.90
5745	16" x 6" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	1,309.41	158.63
5747	16" x 8" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	1,370.05	162.64
5750	Piping, water dist, DI, reducer, nj x nj, 16" x 10"	EA	1,430.67	163.08
5760	Piping, water dist, DI, reducer, nj x nj, 16" x 12"	EA	1,495.37	164.05
5770	Piping, water dist, DI, reducer, nj x nj, 16" x 14"	EA	1,797.15	186.38
5775	18" x 8" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	1,849.75	164.77
5777	18" x 10" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	1,934.11	177.46
5780	Piping, water dist, DI, reducer, nj x nj, 18" x 12"	EA	2,168.50	189.95
5790	Piping, water dist, DI, reducer, nj x nj, 18" x 14"	EA	2,018.41	202.80
5800	Piping, water dist, DI, reducer, nj x nj, 18" x 16"	EA	2,079.22	215.45

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5802	20" x 10" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	2,047.27	190.07
5803	20" x 12" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	2,125.23	202.76
5804	20" x 14" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	2,203.18	215.45
5805	20" x 16" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	2,281.13	228.14
5806	20" x 18" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	2,359.09	240.79
5810	Piping, water dist, DI, reducer, nj x nj, 24" x 12"	EA	2,925.42	296.05
5814	24" x 14" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	3,028.45	312.43
5816	24" x 16" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	3,131.48	328.90
5820	Piping, water dist, DI, reducer, nj x nj, 24" x 18"	EA	3,796.46	342.92
5830	Piping, water dist, DI, reducer, nj x nj, 24" x 20"	EA	3,997.47	346.81
5840	Piping, water dist, DI, reducer, nj x nj, 30" x 18"	EA	5,422.98	374.60
5850	Piping, water dist, DI, reducer, nj x nj, 30" x 20"	EA	5,691.34	378.50
5860	Piping, water dist, DI, reducer, nj x nj, 30" x 24"	EA	6,185.12	383.96
5870	Piping, water dist, DI, reducer, nj x nj, 36" x 20"	EA	9,335.32	464.40
5880	Piping, water dist, DI, reducer, nj x nj, 36" x 24"	EA	9,527.85	502.51
5890	Piping, water dist, DI, reducer, nj x nj, 36" x 30"	EA	10,454.40	524.51
5892	42" x 20" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	5,031.01	492.34
5893	42" x 24" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	5,293.36	524.51
5894	42" x 30" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	6,001.03	572.18
5895	42" x 36" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	6,553.35	619.89
5896	48" x 30" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	7,374.31	619.89
5897	48" x 36" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	7,991.07	667.56
5898	48" x 42" Mech Joint DI Reducer Mech Joint x Mech Joint	EA	8,779.28	715.23
02664 5899	Solid sleeve, mechanical joint x mech. joint			
5900	Piping, water dist, DI, solid sleeve, nj x nj, 4" dia	EA	189.38	14.16
5910	Piping, water dist, DI, solid sleeve, nj x nj, 6" dia	EA	263.78	21.63
5920	Piping, water dist, DI, solid sleeve, nj x nj, 8" dia	EA	317.88	23.98
5925	10" Dia Mech Jnt DI Solid Sleeve (25cm) D Mech Joint x Mech Joint	EA	446.07	35.51
5930	Piping, water dist, DI, solid sleeve, nj x nj, 12" dia	EA	538.58	39.19
5935	14" Dia Mech Jnt DI Solid Sleeve (36cm) D Mech Joint x Mech Joint	EA	754.75	39.32
5937	16" Dia Mech Jnt DI Solid Sleeve (41cm) D Mech Joint x Mech Joint	EA	889.21	44.26
5940	Piping, water dist, DI, solid sleeve, nj x nj, 18" dia	EA	1,691.95	77.14
5950	Piping, water dist, DI, solid sleeve, nj x nj, 20" dia	EA	1,887.67	79.39
5960	Piping, water dist, DI, solid sleeve, nj x nj, 24" dia	EA	2,395.88	97.50
5970	Piping, water dist, DI, solid sleeve, nj x nj, 30" dia	EA	4,311.24	91.64
5980	Piping, water dist, DI, solid sleeve, nj x nj, 36" dia	EA	5,689.45	121.69
5982	42" Dia Mech Jnt DI Solid Sleeve (106cm) D Mech Joint x Mech Joint	EA	5,350.51	106.70
5984	48" Dia Mech Jnt DI Solid Sleeve (122cm) D Mech Joint x Mech Joint	EA	6,437.88	123.96
02664 5989	Adapter, mechanical joint x mechanical joint			
5990	Piping, water dist, DI, adapter, nj x nj, 4" dia	EA	170.63	13.26
6010	Piping, water dist, DI, adapter, nj x nj, 6" dia	EA	232.77	18.20
6020	Piping, water dist, DI, adapter, nj x nj, 8" dia	EA	294.89	20.61
6025	10" Dia Mech Joint DI Adapter (25cm) D Mech Joint x Mech Joint	EA	485.81	35.10
6030	Piping, water dist, DI, adapter, nj x nj, 12" dia	EA	526.25	35.37
6034	14" Dia Mech Joint DI Adapter (36cm) D Mech Joint x Mech Joint	EA	754.75	39.32
6038	16" Dia Mech Joint DI Adapter (41cm) D Mech Joint x Mech Joint	EA	892.27	44.26
6040	Piping, water dist, DI, adapter, nj x nj, 18" dia	EA	1,638.64	73.13
6045	20" Dia Mech Joint DI Adapter (51cm) D Mech Joint x Mech Joint	EA	1,307.45	51.52
6050	Piping, water dist, DI, adapter, nj x nj, 24" dia	EA	2,861.00	112.20
6060	Piping, water dist, DI, adapter, nj x nj, 30" dia	EA	4,467.87	108.31
6070	Piping, water dist, DI, adapter, nj x nj, 36" dia	EA	4,958.75	129.95
6072	42" Dia Mech Joint DI Adapter (106cm) D Mech Joint x Mech Joint	EA	5,935.52	151.64
6074	48" Dia Mech Joint DI Adapter (122cm) D Mech Joint x Mech Joint	EA	7,184.38	173.28
02664 6079	Mechanical joint adapt., mech. joint x plain end			
6080	Piping, water dist, DI, mech joint adapter, nj x pe, 4" dia	EA	86.74	8.80
6090	Piping, water dist, DI, mech joint adapter, nj x pe, 6" dia	EA	97.94	10.43
6100	Piping, water dist, DI, mech joint adapter, nj x pe, 8" dia	EA	322.68	32.77
6105	10" Dia Mech Joint DI Adapter (25cm) Dia Mech Jnt x Plain End	EA	363.00	36.83
6110	Piping, water dist, 12" dia, DI, mech joint adapter, nj x pe	EA	503.32	41.31
6112	14" Dia Mech Joint DI Adapter (36cm) Dia Mech Jnt x Plain End	EA	514.71	41.22
6114	16" Dia Mech Joint DI Adapter (41cm) Dia Mech Jnt x Plain End	EA	603.87	43.60
6120	Piping, water dist, 18" dia, DI, mech joint adapter, nj x pe	EA	1,196.69	95.72
6130	Piping, water dist, 20" dia, DI, mech joint adapter, nj x pe	EA	1,484.59	102.37
6140	Piping, water dist, 24" dia, DI, mech joint adapter, nj x pe	EA	1,948.98	130.96
6150	Piping, water dist, 30" dia, DI, mech joint adapter, nj x pe	EA	2,256.94	131.28

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6160	Piping, water dist, 36" dia, DI, mech joint adapter, mj x pe	EA	2, 876. 71	131. 56
6162	42" Dia Mech Joint DI Adapter (106cm) Dia Mech Jnt x Plain End	EA	2, 788. 83	130. 81
6164	48" Dia Mech Joint DI Adapter (122cm) Dia Mech Jnt x Plain End	EA	3, 469. 14	151. 26
02664 6169	Cap, mechanical joint			
6170	Piping, water dist, DI, cap, 4" dia	EA	96. 72	13. 39
6180	Piping, water dist, DI, cap, 6" dia	EA	106. 99	14. 19
6190	Piping, water dist, DI, cap, 8" dia	EA	193. 42	24. 65
6192	10"(25cm) Dia Mech Joint DI Cap	EA	206. 07	24. 40
6200	Piping, water dist, DI, cap, 12" dia	EA	277. 56	26. 55
6202	14"(36cm) Dia Mech Joint DI Cap	EA	353. 69	27. 34
6204	16"(41cm) Dia Mech Joint DI Cap	EA	442. 47	29. 57
6210	Piping, water dist, DI, cap, 18" dia	EA	723. 37	45. 33
6212	20"(51cm) Dia Mech Joint DI Cap	EA	1, 205. 75	62. 11
6220	Piping, water dist, DI, cap, 24" dia	EA	1, 568. 35	80. 28
6230	Piping, water dist, DI, cap, 30" dia	EA	2, 241. 78	88. 83
6240	Piping, water dist, DI, cap, 36" dia	EA	3, 324. 51	97. 38
6242	42"(106cm) Dia Mech Joint DI Cap	EA	3, 212. 82	113. 37
6244	48"(122cm) Dia Mech Joint DI Cap	EA	4, 170. 72	129. 57
02664 6249	Offset, mechanical joint x plain end			
6250	Piping, water dist, DI, offset, mj x pe, 4" dia x 6"	EA	400. 84	24. 36
6260	Piping, water dist, DI, offset, mj x pe, 4" dia x 12"	EA	410. 04	24. 14
6270	Piping, water dist, DI, offset, mj x pe, 6" dia x 6"	EA	542. 90	33. 48
6280	Piping, water dist, DI, offset, mj x pe, 6" dia x 12"	EA	553. 93	31. 46
6290	Piping, water dist, DI, offset, mj x pe, 6" dia x 18"	EA	639. 45	32. 39
6300	Piping, water dist, DI, offset, mj x pe, 8" dia x 6"	EA	736. 33	40. 41
6310	Piping, water dist, DI, offset, mj x pe, 8" dia x 12"	EA	951. 19	42. 63
6320	Piping, water dist, DI, offset, mj x pe, 8" dia x 18"	EA	932. 31	38. 91
6322	10" Dia x 6" Mech Jnt DI Offset Mech Joint x Plain End	EA	670. 59	25. 61
6324	10" Dia x 12" Mech Jnt DI Offset Mech Joint x Plain End	EA	868. 71	25. 30
6326	10" Dia x 18" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 066. 82	25. 11
6330	Piping, water dist, DI, offset, mj x pe, 12" dia x 6"	EA	1, 375. 06	48. 03
6340	Piping, water dist, DI, offset, mj x pe, 12" dia x 12"	EA	1, 547. 96	48. 51
6350	Piping, water dist, DI, offset, mj x pe, 12" dia x 18"	EA	1, 863. 15	48. 67
6352	14" Dia x 6" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 239. 29	48. 03
6354	14" Dia x 12" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 604. 19	52. 57
6356	14" Dia x 18" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 987. 35	64. 70
6358	16" Dia x 6" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 366. 29	48. 03
6360	16" Dia x 12" Mech Jnt DI Offset Mech Joint x Plain End	EA	1, 738. 93	56. 58
6362	16" Dia x 18" Mech Jnt DI Offset Mech Joint x Plain End	EA	2, 111. 56	68. 71
02664 6439	Push joint elbow (stab)			
6440	Piping, water dist, DI, push joint (stab) elbow, 4" dia	EA	165. 27	23. 88
6450	Piping, water dist, DI, push joint (stab) elbow, 6" dia	EA	252. 10	36. 43
6460	Piping, water dist, DI, push joint (stab) elbow, 8" dia	EA	315. 63	42. 31
6462	10" Dia Mech DI Push Joint Elbow (25cm) Diameter	EA	476. 82	63. 54
6470	Piping, water dist, DI, push joint (stab) elbow, 12" dia	EA	739. 43	97. 18
6472	14" Dia Mech DI Push Joint Elbow (35cm) Diameter	EA	911. 94	84. 20
6474	16" Dia Mech DI Push Joint Elbow (41cm) Diameter	EA	1, 000. 90	86. 51
6480	Piping, water dist, DI, push joint (stab) elbow, 18" dia	EA	1, 852. 85	140. 07
02664 6489	Push joint tee (stab)			
6490	Piping, water dist, DI, push joint (stab) tee, 4" dia	EA	185. 27	27. 32
6500	Piping, water dist, DI, push joint (stab) tee, 6" dia	EA	255. 34	38. 30
6510	Piping, water dist, DI, push joint (stab) tee, 8" dia	EA	431. 42	58. 55
6512	10" Dia Mech DI Push Joint Tee (25cm) Diameter	EA	712. 16	93. 14
6520	Piping, water dist, DI, push joint (stab) tee, 12" dia	EA	1, 032. 93	102. 12
6522	14" Dia Mech DI Push Joint Tee (36cm) Diameter	EA	1, 104. 31	110. 69
6524	16" Dia Mech DI Push Joint Tee (41cm) Diameter	EA	1, 441. 97	121. 91
6530	Piping, water dist, DI, push joint (stab) tee, 18" dia	EA	2, 879. 03	198. 06
02664 8005	Mechanical restrained joint, 90 deg bend or elbows			
8006	Piping, water dist, DI, 90 deg bend or elbow, 4" dia	EA	134. 31	20. 51
8020	Piping, water dist, DI, 90 deg bend or elbow, 6" dia	EA	201. 54	29. 27
8040	Piping, water dist, DI, 90 deg bend or elbow, 8" dia	EA	293. 69	42. 41
8045	10"Dia 90 Deg Ductile Iron Elbow (25cm) Diameter	EA	343. 69	43. 94
8080	Piping, water dist, DI, 90 deg bend or elbow, 12" dia	EA	501. 32	56. 91
8083	14"Dia 90 Deg Ductile Iron Elbow (36cm) Diameter	EA	732. 77	70. 28

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8086	16"Dia 90 Deg Ductile Iron Elbow (41cm) Diameter	EA	833.85	80.32
8140	Piping, water dist, DI, 90 deg bend or elbow, 18" dia	EA	1,106.75	83.69
8145	20"Dia 90 Deg Ductile Iron Elbow (51cm) Diameter	EA	1,411.62	94.78
8180	Piping, water dist, DI, 90 deg bend or elbow, 24" dia	EA	1,925.01	106.78
8182	Piping, water dist, DI, 90 deg bend or elbow, 30" dia	EA	8,412.66	165.77
8184	Piping, water dist, DI, 90 deg bend or elbow, 36" dia	EA	9,470.80	173.69
8190	42"Dia 90 Deg Ductile Iron Elbow (106cm) Diameter	EA	11,484.05	261.19
8195	48"Dia 90 Deg Ductile Iron Elbow (122cm) Diameter	EA	42,101.77	302.99
02664 8381	Mechanical restrained joint, 22-1/2_ bends			
8382	Piping, water dist, DI, 22.5 deg bend, 4" dia	EA	183.15	33.77
8383	14" Dia 22-1/2 Degree DI Elbow (36cm) Diameter	EA	874.52	135.83
8384	Piping, water dist, DI, 22.5 deg bend, 6" dia	EA	255.54	45.07
8386	Piping, water dist, DI, 22.5 deg bend, 8" dia	EA	340.20	57.40
8387	10" Dia 22-1/2 Degree DI Elbow (25cm) Diameter	EA	493.67	78.78
8388	Piping, water dist, DI, 22.5 deg bend, 12" dia	EA	748.64	127.15
8389	Piping, water dist, DI, 22.5 deg bend, 18" dia	EA	1,784.34	175.13
8390	16" Dia 22-1/2 Degree DI Elbow (41cm) Diameter	EA	973.85	117.58
8391	20" Dia 22-1/2 Degree DI Elbow (51cm) Diameter	EA	1,768.42	159.72
8392	Piping, water dist, DI, 22.5 deg bend, 24" dia	EA	4,360.24	363.28
8393	48" Dia 22-1/2 Degree DI Elbow (122cm) Diameter	EA	9,216.58	291.05
8394	Piping, water dist, DI, 22.5 deg bend, 30" dia	EA	7,257.52	379.18
8395	42" Dia 22-1/2 Degree DI Elbow (106cm) Diameter	EA	7,049.20	238.72
8396	Piping, water dist, DI, 22.5 deg bend, 36" dia	EA	10,100.97	415.28
02664 8397	Mechanical restrained joint, 45_ bends			
8398	Piping, water dist, DI, 45 deg bend, 4" dia	EA	205.84	41.09
8400	Piping, water dist, DI, 45 deg bend, 6" dia	EA	173.16	34.25
8405	Piping, water dist, DI, 45 deg bend, 8" dia	EA	271.81	49.69
8407	10"Dia 45 Deg Ductile Iron Elbow (25cm) Diameter	EA	480.34	79.59
8410	Piping, water dist, DI, 45 deg bend, 12" dia	EA	395.68	71.59
8412	14"Dia 45 Deg Ductile Iron Elbow (36cm) Diameter	EA	831.94	115.09
8414	16"Dia 45 Deg Ductile Iron Elbow (41cm) Diameter	EA	1,054.72	115.31
8422	Piping, water dist, DI, 45 deg bend, 18" dia	EA	1,739.79	208.27
8438	20"Dia 45 Deg Ductile Iron Elbow (51cm) Diameter	EA	1,848.88	158.44
8440	Piping, water dist, DI, 45 deg bend, 24" dia	EA	1,702.22	116.94
8442	Piping, water dist, DI, 45 deg bend, 30" dia	EA	4,521.17	315.49
8444	Piping, water dist, DI, 45 deg bend, 36" dia	EA	8,095.38	423.23
8446	42"Dia 45 Deg Ductile Iron Elbow (106cm) Diameter	EA	7,048.05	238.72
8447	48"Dia 45 Deg Ductile Iron Elbow (122cm) Diameter	EA	9,217.73	291.05
02664 8449	Mechanical restrained joint, decesaser			
8450	Piping, water dist, DI, reducer, nj x nj, 6" x 4" dia	EA	179.57	34.57
8460	Piping, water dist, DI, reducer, nj x nj, 8" x 6" dia	EA	243.29	46.00
8470	Piping, water dist, DI, reducer, nj x nj, 10" x 6" dia	EA	291.71	60.76
8480	Piping, water dist, DI, reducer, nj x nj, 12" x 6" dia	EA	352.78	72.74
02664 8500	Mechanical			
Note: See Section 02664-5339 For Additional Mechanical Joint Crosses				
8502	4" x 3" Mech Joint DI Cross	EA	301.45	46.42
8504	6" x 3" Mech Joint DI Cross	EA	411.86	59.23
8506	14" x 4" Mech Joint DI Cross	EA	1,515.87	153.75
8508	14" x 6" Mech Joint DI Cross	EA	1,553.84	152.94
8510	14" x 8" Mech Joint DI Cross	EA	1,596.42	152.14
8512	14" x 10" Mech Joint DI Cross	EA	1,658.55	151.04
8514	14" x 12" Mech Joint DI Cross	EA	1,729.89	149.90
8516	14" x 14" Mech Joint DI Cross	EA	1,825.40	148.58
8518	16" x 4" Mech Joint DI Cross	EA	1,508.65	183.32
8520	16" x 6" Mech Joint DI Cross	EA	1,835.44	175.19
8522	16" x 8" Mech Joint DI Cross	EA	1,884.92	174.27
8524	16" x 10" Mech Joint DI Cross	EA	1,949.36	173.17
8526	16" x 12" Mech Joint DI Cross	EA	2,011.49	172.22
8528	16" x 14" Mech Joint DI Cross	EA	2,107.00	170.86
8530	16" x 16" Mech Joint DI Cross	EA	2,193.30	169.80
8532	18" x 14" Mech Joint DI Cross	EA	2,580.18	206.00
8534	18" x 16" Mech Joint DI Cross	EA	2,679.14	204.83
8536	20" x 6" Mech Joint DI Cross	EA	2,509.00	233.37
8538	20" x 8" Mech Joint DI Cross	EA	2,560.78	232.46

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8540	20" x 10" Mech Joint DI Cross	EA	2,611.41	231.65
8542	20" x 12" Mech Joint DI Cross	EA	2,678.15	230.59
8544	20" x 14" Mech Joint DI Cross	EA	2,766.76	229.31
8546	20" x 16" Mech Joint DI Cross	EA	3,041.77	225.93
8548	20" x 18" Mech Joint DI Cross	EA	3,187.90	224.43
8550	20" x 20" Mech Joint DI Cross	EA	3,312.17	223.30
8552	24" x 14" Mech Joint DI Cross	EA	3,322.17	257.01
8554	24" x 16" Mech Joint DI Cross	EA	3,399.27	256.13
8556	24" x 20" Mech Joint DI Cross	EA	4,149.51	249.57
8558	30" x 14" Mech Joint DI Cross	EA	5,057.61	253.16
8560	30" x 16" Mech Joint DI Cross	EA	5,137.01	252.79
8562	30" x 20" Mech Joint DI Cross	EA	5,363.69	251.84
8564	36" x 14" Mech Joint DI Cross	EA	6,528.77	284.20
8566	36" x 16" Mech Joint DI Cross	EA	6,601.26	283.94
8568	36" x 20" Mech Joint DI Cross	EA	6,811.84	283.24
8570	42" x 12" Mech Joint DI Cross	EA	8,520.76	305.85
8572	42" x 16" Mech Joint DI Cross	EA	8,673.80	305.48
8574	42" x 18" Mech Joint DI Cross	EA	8,777.36	305.26
8576	42" x 20" Mech Joint DI Cross	EA	8,877.47	305.04
8578	42" x 24" Mech Joint DI Cross	EA	9,066.18	304.68
8580	42" x 30" Mech Joint DI Cross	EA	11,265.12	301.20
8582	42" x 36" Mech Joint DI Cross	EA	13,817.31	298.63
8584	42" x 42" Mech Joint DI Cross	EA	14,973.74	297.75
8586	48" x 12" Mech Joint DI Cross	EA	11,097.83	381.33
8588	48" x 14" Mech Joint DI Cross	EA	11,149.61	381.22
8590	48" x 16" Mech Joint DI Cross	EA	11,242.82	381.04
8592	48" x 18" Mech Joint DI Cross	EA	11,347.53	380.82
8594	48" x 20" Mech Joint DI Cross	EA	11,438.43	380.64
8596	48" x 24" Mech Joint DI Cross	EA	11,622.54	380.27
8598	48" x 30" Mech Joint DI Cross	EA	12,544.23	378.66
8600	48" x 36" Mech Joint DI Cross	EA	14,614.29	375.84
8602	48" x 42" Mech Joint DI Cross	EA	18,087.03	372.65
8604	48" x 48" Mech Joint DI Cross	EA	19,091.56	371.95
02667 0010 Piping, water distribution, polyvinyl chloride				
02667 3958 Pressure pipe, class 200, SDR 21				
02667 3959 No trenching or backfill				
3960	Piping, water dist, 3/4", PVC, press pipe, class 200, SDR 21	LF	0.81	0.18
3980	Piping, water dist, 1", PVC, press pipe, class 200, SDR 21	LF	0.83	0.18
3985	1-1/4" Dia SDR 21 PVC Press Pipe (3.1cm) Dia, Class 200	LF	1.08	0.18
4000	Piping, water dist, 1.5", PVC, press pipe, class 200, SDR 21	LF	1.20	0.25
4010	Piping, water dist, 2", PVC, press pipe, class 200, SDR 21	LF	1.42	0.25
4020	Piping, water dist, 2.5", PVC, press pipe, class 200, SDR 21	LF	1.71	0.29
4030	Piping, water dist, 3", PVC, press pipe, class 200, SDR 21	LF	2.17	0.29
4040	Piping, water dist, 4", PVC, press pipe, class 200, SDR 21	LF	2.80	0.36
4050	Piping, water dist, 6", PVC, press pipe, class 200, SDR 21	LF	4.36	0.39
4060	Piping, water dist, 8", PVC, press pipe, class 200, SDR 21	LF	6.55	0.43
02667 4089 W trenching to 3', no backfill				
4090	Piping, wtr dist, SDR 21 w/trench to 3'D, 3/4", PVC, press	LF	4.53	0.39
4100	Piping, wtr dist, SDR 21 w/trench to 3'D, 1", PVC, press	LF	4.88	0.44
4110	Piping, wtr dist, SDR 21 w/trench to 3'D, 1.5", PVC,	LF	5.35	0.50
4120	Piping, wtr dist, SDR 21 w/trench to 3'D, 2", PVC, press	LF	6.42	0.50
4130	Piping, wtr dist, SDR 21 w/trench to 3'D, 2.5", PVC,	LF	7.21	0.50
4140	Piping, wtr dist, SDR 21 w/trench to 3'D, 3", PVC, press	LF	8.41	0.61
4150	Piping, wtr dist, SDR 21 w/trench to 3'D, 4", PVC, press	LF	10.24	0.61
4160	Piping, wtr dist, SDR 21 w/trench to 3'D, 6", PVC, press	LF	13.48	0.61
02667 4165 Fittings, with rubber gaskets				
02667 4169 Elbow				
4170	Piping, water dist, 90 deg, 3/4", PVC, press pipe, CL200,	EA	6.43	0.92
4180	Piping, water dist, 90 deg, 1", PVC, press pipe, CL200, SDR 21	EA	6.49	1.46
4185	1-1/4"D SDR 21 PVC 90 Deg Elbow (3.1cm)Dia, Class 200, Press Pipe	EA	7.22	1.53
4190	Piping, water dist, 90 deg, 1.5", PVC, press pipe, CL200,	EA	7.91	1.60
4200	Piping, water dist, 90 deg, 2", PVC, press pipe, CL200, SDR 21	EA	10.53	1.63
4205	2-1/2"D SDR 21 PVC 90 Deg Elbow (6.3cm)Dia, Class 200, Press Pipe	EA	29.38	3.55
4210	Piping, water dist, 90 deg, 3", PVC, press pipe, CL200, SDR 21	EA	48.23	5.46

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4220	Piping, water dist, 90 deg, 4", PVC, press pipe, CL200, SDR 21	EA	58.30	7.95
4230	Piping, water dist, 90 deg, 6", PVC, press pipe, CL200, SDR 21	EA	67.13	7.98
4240	Piping, water dist, 90 deg, 8", PVC, press pipe, CL200, SDR 21	EA	69.79	8.48
4242	10" Dia SDR 21 PVC 90 Deg Elbow Class 200, Pressure Pipe	EA	75.53	10.57
4244	12" Dia SDR 21 PVC 90 Deg Elbow Class 200, Pressure Pipe	EA	76.96	12.70
4250	Piping, water dist, 45 deg, 3/4", PVC, press pipe, CL200,	EA	6.59	1.17
4260	Piping, water dist, 45 deg, 1", PVC, press pipe, CL200, SDR 21	EA	6.64	1.46
4265	1-1/4"D SDR 21 PVC 45 Deg Elbow (3.1cm)Dia, Class 200, Press Pipe	EA	7.52	1.46
4270	Piping, water dist, 45 deg, 1.5", PVC, press pipe, CL200,	EA	8.09	1.60
4280	Piping, water dist, 45 deg, 2", PVC, press pipe, CL200, SDR 21	EA	10.72	1.60
4290	Piping, water dist, 45 deg, 2.5", PVC, press pipe, CL200,	EA	14.60	1.99
4300	Piping, water dist, 45 deg, 3", PVC, press pipe, CL200, SDR 21	EA	50.39	8.52
4310	Piping, water dist, 45 deg, 4", PVC, press pipe, CL200, SDR 21	EA	62.30	9.40
4320	Piping, water dist, 45 deg, 6", PVC, press pipe, CL200, SDR 21	EA	77.79	9.79
4330	Piping, water dist, 45 deg, 8", PVC, press pipe, CL200, SDR 21	EA	96.99	10.18
4332	10" Dia SDR 21 PVC 45 Deg Elbow Class 200, Pressure Pipe	EA	109.53	10.57
4334	12" Dia SDR 21 PVC 45 Deg Elbow Class 200, Pressure Pipe	EA	121.30	12.70
02667 4339 Tee				
4340	Piping, water dist, 3/4", PVC, press pipe, CL200, SDR 21 tee	EA	13.36	2.91
4350	Piping, water dist, 1", PVC, press pipe, CL200, SDR 21 tee	EA	13.49	3.12
4355	1-1/4"(3.1cm) Dia SDR 21 PVC Tee Class 200, Pressure Pipe	EA	14.60	3.12
4360	Piping, water dist, 1.5", PVC, press pipe, CL200, SDR 21 tee	EA	20.82	3.16
4370	Piping, water dist, 2", PVC, press pipe, CL200, SDR 21 tee	EA	25.49	3.51
4380	Piping, water dist, 2.5", PVC, press pipe, CL200, SDR 21 tee	EA	35.09	5.18
4390	Piping, water dist, 3", PVC, press pipe, CL200, SDR 21 tee	EA	60.25	9.19
4400	Piping, water dist, 4", PVC, press pipe, CL200, SDR 21 tee	EA	81.99	11.78
4410	Piping, water dist, 6", PVC, press pipe, CL200, SDR 21 tee	EA	118.18	11.92
4420	Piping, water dist, 8", PVC, press pipe, CL200, SDR 21 tee	EA	146.23	12.84
4422	10" Dia SDR 21 PVC Tee, Class 200 Pressure Pipe	EA	158.39	16.04
4424	12" Dia SDR 21 PVC Tee, Class 200, Pressure Pipe	EA	172.95	19.27
02667 4429 Coupling				
4430	Piping, water dist, 3/4", PVC, press pipe, CL200, SDR 21	EA	6.42	1.63
4440	Piping, water dist, 1", PVC, press pipe, CL200, SDR 21	EA	6.48	1.63
4445	1-1/4" Dia SDR 21 PVC Coupling (3.1cm)Dia, Class 200 Press Pipe	EA	6.59	1.67
4450	Piping, water dist, 1.5", PVC, press pipe, CL200, SDR 21	EA	7.82	1.67
4460	Piping, water dist, 2", PVC, press pipe, CL200, SDR 21	EA	10.35	1.70
4470	Piping, water dist, 2.5", PVC, press pipe, CL200, SDR 21	EA	13.48	2.34
4480	Piping, water dist, 3", PVC, press pipe, CL200, SDR 21	EA	48.66	9.30
4490	Piping, water dist, 4", PVC, press pipe, CL200, SDR 21	EA	58.74	10.25
4500	Piping, water dist, 6", PVC, press pipe, CL200, SDR 21	EA	70.30	10.50
4510	Piping, water dist, 8", PVC, press pipe, CL200, SDR 21	EA	75.64	10.64
4512	10" Dia SDR 21 PVC Coupling Class 200, Pressure Pipe	EA	82.84	13.30
4514	12" Dia SDR 21 PVC Coupling Class 200, Pressure Pipe	EA	89.28	15.97
02667 4519 Class 150, SDR 18, AWWA C900				
4520	Piping, water dist, PVC, class 150, SDR 18, AWWA C900, 4"	LF	9.35	1.92
4522	4"Dia 90 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	56.16	9.77
4524	4"Dia 45 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	65.29	9.78
4526	4"Dia Tee, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	85.53	9.77
4528	4"Dia Coupling, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	128.34	9.77
4530	Piping, water dist, PVC, class 150, SDR 18, AWWA C900, 6"	LF	11.47	1.99
4532	6"Dia 90 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	71.89	11.35
4534	6"Dia 45 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	77.16	11.35
4536	6"Dia Tee, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	107.11	11.35
4538	6"Dia Coupling, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	159.31	11.35
4540	Piping, water dist, PVC, class 150, SDR 18, AWWA C900, 8"	LF	14.64	2.16
4542	8"Dia 90 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	115.25	12.65
4544	8"Dia 45 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	105.74	12.65
4546	8"Dia Tee, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	139.02	12.65
4548	8"Dia Coupling, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	171.10	12.65
4550	Piping, water dist, PVC, class 150, SDR 18, AWWA C900, 10"	LF	18.92	2.48
4552	10"Dia 90 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	125.54	14.06
4554	10"Dia 45 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	133.65	14.06
4556	10"Dia Tee, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	166.30	14.06
4558	10"Dia Coupling, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	201.60	14.06
4560	Piping, water dist, PVC, class 150, SDR 18, AWWA C900, 12"	LF	26.76	3.41

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4562	12"Dia 90 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	139.99	14.46
4564	12"Dia 45 Degree Elbow, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	152.06	14.46
4566	12"Dia Tee, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	188.85	14.46
4568	12"Dia Coupling, PVC SDR 18, Class 150 Pipe, AWWA, C900	EA	209.29	14.46
02667 4569 Schedule 40				
02667 4569 Pipe				
4570	Piping, water dist, PVC, sched 40, 1"	LF	2.18	0.99
4580	Piping, water dist, PVC, sched 40, 1.5"	LF	2.86	1.03
4590	Piping, water dist, PVC, sched 40, 2"	LF	3.69	1.06
4600	Piping, water dist, PVC, sched 40, 2.5"	LF	5.79	1.20
4610	Piping, water dist, PVC, sched 40, 3"	LF	6.52	1.25
4620	Piping, water dist, PVC, sched 40, 4"	LF	8.93	2.07
4630	Piping, water dist, PVC, sched 40, 6"	LF	15.36	3.05
02667 4639 Elbow				
4640	Piping, water dist, PVC, sched 40, elbow, 90 deg, 1"	EA	6.74	1.67
4650	Piping, water dist, PVC, sched 40, elbow, 90 deg, 1.5"	EA	13.62	3.09
4660	Piping, water dist, PVC, sched 40, elbow, 90 deg, 2"	EA	17.48	4.08
4670	Piping, water dist, PVC, sched 40, elbow, 90 deg, 2.5"	EA	28.55	6.03
4680	Piping, water dist, PVC, sched 40, elbow, 90 deg, 3"	EA	50.29	11.11
4690	Piping, water dist, PVC, sched 40, elbow, 90 deg, 4"	EA	60.74	12.67
4700	Piping, water dist, PVC, sched 40, elbow, 90 deg, 6"	EA	80.56	12.84
4710	Piping, water dist, PVC, sched 40, elbow, 45 deg, 1"	EA	6.96	1.67
4720	Piping, water dist, PVC, sched 40, elbow, 45 deg, 1.5"	EA	14.34	3.16
4730	Piping, water dist, PVC, sched 40, elbow, 45 deg, 2"	EA	18.17	4.19
4740	Piping, water dist, PVC, sched 40, elbow, 45 deg, 2.5"	EA	28.52	5.89
4750	Piping, water dist, PVC, sched 40, elbow, 45 deg, 3"	EA	53.28	11.75
4760	Piping, water dist, PVC, sched 40, elbow, 45 deg, 4"	EA	61.29	12.67
4770	Piping, water dist, PVC, sched 40, elbow, 45 deg, 6"	EA	79.99	13.09
02667 4779 Tee				
4780	Piping, water dist, PVC, sched 40, tee, 1"	EA	13.67	3.16
4790	Piping, water dist, PVC, sched 40, tee, 1.5"	EA	20.91	4.90
4800	Piping, water dist, PVC, sched 40, tee, 2"	EA	25.59	5.78
4810	Piping, water dist, PVC, sched 40, tee, 2.5"	EA	36.61	7.70
4820	Piping, water dist, PVC, sched 40, tee, 3"	EA	60.16	12.77
4830	Piping, water dist, PVC, sched 40, tee, 4"	EA	81.67	17.28
4840	Piping, water dist, PVC, sched 40, tee, 6"	EA	121.32	19.09
02667 4849 Coupling				
4850	Piping, water dist, PVC, sched 40, coupling, 1"	EA	6.64	1.67
4860	Piping, water dist, PVC, sched 40, coupling, 1.5"	EA	13.48	3.12
4870	Piping, water dist, PVC, sched 40, coupling, 2"	EA	17.07	4.12
4880	Piping, water dist, PVC, sched 40, coupling, 2.5"	EA	25.74	5.78
4890	Piping, water dist, PVC, sched 40, coupling, 3"	EA	49.93	11.50
4900	Piping, water dist, PVC, sched 40, coupling, 4"	EA	58.57	13.59
4910	Piping, water dist, PVC, sched 40, coupling, 6"	EA	71.19	14.05
02667 4919 Reducer				
4920	Piping, water dist, PVC, sched 40, reducer, 4" x 2"	EA	3.03	
4930	Piping, water dist, PVC, sched 40, reducer, 6" x 4"	EA	19.38	
4940	Piping, water dist, PVC, sched 40, reducer, 8" x 6"	EA	28.11	
4950	Piping, water dist, PVC, sched 40, reducer, 10" x 8"	EA	56.59	
4960	Piping, water dist, PVC, sched 40, reducer, 8" x 4"	EA	31.45	
4970	Piping, water dist, PVC, sched 40, reducer, 12" x 8"	EA	70.02	
02667 4979 Flange assemblies				
4980	Piping, water dist, PVC, sched 40, flange assemblies, 3"	EA	8.74	
4990	Piping, water dist, PVC, sched 40, flange assemblies, 4"	EA	10.97	
5000	Piping, water dist, PVC, sched 40, flange assemblies, 6"	EA	17.47	
5010	Piping, water dist, PVC, sched 40, flange assemblies, 8"	EA	24.70	
5020	Piping, water dist, PVC, sched 40, flange assemblies, 10"	EA	38.83	
02667 5029 Schedule 80				
02667 5029 Pipe				
5030	Piping, water dist, PVC, sched 80, 1"	LF	2.24	0.57
5040	Piping, water dist, PVC, sched 80, 1.5"	LF	2.47	0.57
5050	Piping, water dist, PVC, sched 80, 2"	LF	3.10	0.64
5060	Piping, water dist, PVC, sched 80, 2.5"	LF	3.50	0.64

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5070	Piping, water dist, PVC, sched 80, 3"	LF	6.15	0.85
5080	Piping, water dist, PVC, sched 80, 4"	LF	6.92	1.14
5090	Piping, water dist, PVC, sched 80, 6"	LF	9.61	1.28
02667 5099	Elbow			
5100	Piping, water dist, PVC, sched 80, elbow, 90 deg, 1"	EA	7.48	1.67
5110	Piping, water dist, PVC, sched 80, elbow, 90 deg, 1.5"	EA	14.87	2.87
5120	Piping, water dist, PVC, sched 80, elbow, 90 deg, 2"	EA	18.70	3.69
5130	Piping, water dist, PVC, sched 80, elbow, 90 deg, 2.5"	EA	29.38	5.46
5140	Piping, water dist, PVC, sched 80, elbow, 90 deg, 3"	EA	52.59	11.75
5150	Piping, water dist, PVC, sched 80, elbow, 90 deg, 4"	EA	64.79	12.31
5160	Piping, water dist, PVC, sched 80, elbow, 90 deg, 6"	EA	83.99	14.83
5170	Piping, water dist, PVC, sched 80, elbow, 45 deg, 1"	EA	8.42	1.67
5180	Piping, water dist, PVC, sched 80, elbow, 45 deg, 1.5"	EA	16.38	2.87
5190	Piping, water dist, PVC, sched 80, elbow, 45 deg, 2"	EA	20.83	3.69
5200	Piping, water dist, PVC, sched 80, elbow, 45 deg, 2.5"	EA	33.34	5.46
5210	Piping, water dist, PVC, sched 80, elbow, 45 deg, 3"	EA	57.84	11.75
5220	Piping, water dist, PVC, sched 80, elbow, 45 deg, 4"	EA	75.75	12.31
5230	Piping, water dist, PVC, sched 80, elbow, 45 deg, 6"	EA	88.00	14.83
02667 5239	Tee			
5240	Piping, water dist, PVC, sched 80, tee, 1"	EA	14.99	3.02
5250	Piping, water dist, PVC, sched 80, tee, 1.5"	EA	25.23	4.58
5260	Piping, water dist, PVC, sched 80, tee, 2"	EA	30.90	5.50
5270	Piping, water dist, PVC, sched 80, tee, 2.5"	EA	39.20	7.52
5280	Piping, water dist, PVC, sched 80, tee, 3"	EA	65.22	13.16
5290	Piping, water dist, PVC, sched 80, tee, 4"	EA	84.47	17.38
5300	Piping, water dist, PVC, sched 80, tee, 6"	EA	130.46	20.76
02667 5309	Coupling			
5310	Piping, water dist, PVC, sched 80, coupling, 1"	EA	7.54	1.63
5320	Piping, water dist, PVC, sched 80, coupling, 1.5"	EA	15.23	3.02
5330	Piping, water dist, PVC, sched 80, coupling, 2"	EA	18.86	3.09
5340	Piping, water dist, PVC, sched 80, coupling, 2.5"	EA	15.95	4.01
5350	Piping, water dist, PVC, sched 80, coupling, 3"	EA	25.06	5.25
5360	Piping, water dist, PVC, sched 80, coupling, 4"	EA	31.34	6.63
5370	Piping, water dist, PVC, sched 80, coupling, 6"	EA	43.59	14.37

02670 Water Wells

02674 0010 Wells

Note: Quantity Is Based On 3" Space Between Casing And Well Screen.

02674 0010 Domestic water

0205	Well, domestic water, 6" dia, drilled hole in nml soil, sand,	LF	14.59	
0206	Well, domestic water, 8" dia, drilled hole in nml soil, sand,	LF	21.88	
0208	10"(25cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	25.50	
0210	Well, domestic water, 12" dia, drilled hole in nml soil, sand,	LF	26.04	
0212	14"(36cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	29.84	
0214	16"(41cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	35.39	
0220	Well, domestic water, 18" dia, drilled hole in nml soil, sand,	LF	42.07	
0222	20"(51cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	47.19	
0224	22"(56cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	54.12	
0230	Well, domestic water, 24" dia, drilled hole in nml soil, sand,	LF	64.35	
0232	26"(66cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	74.94	
0234	28"(71cm) Water Well Hole Drilled in Nml Soil, Sand, Gvl, OB	LF	89.52	
0240	Well, domestic water, 30" dia, drilled hole in nml soil, sand,	LF	109.39	
0250	Well, domestic water, 36" dia, drilled hole in nml soil, sand,	LF	198.88	

02674 0260 Domestic Water - Drilled And Cased - Including Casing

0262	8"(21cm) Domestic Water Well Drilled and Cased, Incl Casing	VLF	30.98	
0264	4"(10cm) to 6"(15cm) Water Well Drilled and Cased, Incl Casing	VLF	22.38	

02674 0270 Gravel Pack Well 40 Ft (12M) Deep, Including Gravel And Casing, Complete

0272	24"(61cm) Gravel Pack Water Well 40'(12M) Deep, Gravel and Casin	EA	53,210.48	
0274	36"(91cm) Gravel Pack Water Well 40'(12M) Deep, Gravel and Casin	EA	66,750.27	

02674 0299 Drilled in rock

0300	Well, domestic water, drilled in rock, 6" dia	LF	156.26	
0310	Well, domestic water, drilled in rock, 8" dia	LF	182.31	
0312	10"(25cm) Water Well Hole Drilled in Rock	LF	200.54	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0320	Well, domestic water, drilled in rock, 12" dia	LF	218.77	
0322	14"(36cm) Water Well Hole Drilled in Rock	LF	237.31	
0324	16"(41cm) Water Well Hole Drilled in Rock	LF	255.25	
0330	Well, domestic water, drilled in rock, 18" dia	LF	273.47	
0332	20"(51cm) Water Well Hole Drilled in Rock	LF	336.16	
0334	22"(56cm) Water Well Hole Drilled in Rock	LF	398.13	
0340	Well, domestic water, drilled in rock, 24" dia	LF	460.58	
02674 7999 Steel well casing				
8000	Well, domestic water, steel well casing	LB	0.98	
02674 8109 Well screen assembly				
02674 8109 Stainless steel				
8110	Well, domestic water, screen assembly, sst, 2" dia	LF	42.48	1.02
8120	Well, domestic water, screen assembly, sst, 3" dia	LF	57.12	1.24
8130	Well, domestic water, screen assembly, sst, 4" dia	LF	66.03	1.60
8140	Well, domestic water, screen assembly, sst, 5" dia	LF	77.60	1.82
8150	Well, domestic water, screen assembly, sst, 6" dia	LF	94.16	1.97
8160	Well, domestic water, screen assembly, sst, 8" dia	LF	122.78	3.28
8170	Well, domestic water, screen assembly, sst, 10" dia	LF	155.51	3.65
8180	Well, domestic water, screen assembly, sst, 12" dia	LF	182.87	4.59
8190	Well, domestic water, screen assembly, sst, 14" dia	LF	207.25	5.25
8200	Well, domestic water, screen assembly, sst, 16" dia	LF	230.00	6.42
8210	Well, domestic water, screen assembly, sst, 18" dia	LF	285.09	7.73
8220	Well, domestic water, screen assembly, sst, 20" dia	LF	331.53	8.97
8230	Well, domestic water, screen assembly, sst, 24" dia	LF	414.03	11.38
8240	Well, domestic water, screen assembly, sst, 26" dia	LF	457.43	12.54
02674 8299 Slotted PVC				
8300	Well, domestic water, 1.25" dia, screen assembly, slotted PVC	LF	4.21	0.58
8310	Well, domestic water, 1.5" dia, screen assembly, slotted PVC	LF	4.49	0.58
8320	Well, domestic water, screen assembly, slotted PVC, 2" dia	LF	7.56	1.02
8330	Well, domestic water, screen assembly, slotted PVC, 3" dia	LF	8.60	1.02
8340	Well, domestic water, screen assembly, slotted PVC, 4" dia	LF	11.12	1.39
8350	Well, domestic water, screen assembly, slotted PVC, 5" dia	LF	13.70	1.60
8360	Well, domestic water, screen assembly, slotted PVC, 6" dia	LF	17.07	2.11
8370	Well, domestic water, screen assembly, slotted PVC, 8" dia	LF	23.30	2.70
02674 8399 Artificial gravel pack				
8400	Well, domestic water, 6" casing, 2" screen, artificial gravel	LF	11.32	1.79
8405	Well, domestic water, 8" casing, 2" screen, artificial gravel	LF	17.96	2.77
8410	Well, domestic water, 10" casing, 2" screen, artificial	LF	26.67	4.08
8415	Well, domestic water, 12" casing, 2" screen, artificial	LF	33.35	5.05
8420	Well, domestic water, 14" casing, 2" screen, artificial	LF	39.92	6.03
8425	Well, domestic water, 16" casing, 2" screen, artificial	LF	49.71	7.42
8430	Well, domestic water, 18" casing, 2" screen, artificial	LF	56.26	8.48
8435	Well, domestic water, 20" casing, 2" screen, artificial	LF	68.54	9.38
8440	Well, domestic water, 24" casing, 2" screen, artificial	LF	78.58	10.27
8445	Well, domestic water, 26" casing, 2" screen, artificial	LF	83.37	12.39
8450	Well, domestic water, 30" casing, 2" screen, artificial	LF	102.84	15.16
8455	Well, domestic water, 36" casing, 2" screen, artificial	LF	125.38	18.43
02674 8499 Develop well				
8500	Well, domestic water, develop well	HR	390.17	
02674 8549 Pump test well				
8550	Well, domestic water, pump test well	HR	278.42	
02674 8559 Standby well				
8560	Well, domestic water, standby well	HR	260.24	
02674 8579 Surface seal well, concrete filled				
8580	Well, domestic water, surface seal well, conc filled	LS	2,122.51	
02674 8589 Well test pump				
8590	Well, domestic water, well test pump, install & remove	LS	1,532.08	
02674 8599 Well sterilization, chlorine				
8600	Well, domestic water, well sterilization, chlorine	LS	669.64	

02682 Gas Distribution Lines

Note: Excavation And Backfill Not Included.

02684 0010 Piping, gas service & distribution, polyethylene

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02684 0999 Coils				
1000	Piping, gas & dist, polthn, 60 PSI coils, cplg@100' .5" dia, SDR	LF	2.02	0.32
1040	Piping, gas & dist, polthn, 60 PSI coils, cplg@100' 1.25" dia,	LF	2.43	0.39
1042	1-1/2"(3.7cm) Gas Dist Line Polyethylene, 60 PSI, Coils	LF	3.18	0.43
1100	Piping, gas & dist, polthn, 60 PSI coils, cplg@100' 2" dia, SDR	LF	2.88	0.45
1160	Piping, gas & dist, polthn, 60 PSI coils, cplg@100' 3" dia, SDR	LF	4.14	0.48
02684 1499 40' joints with couplings				
1500	Piping, gas & dist, 3" dia, SDR 11, 40' jt w/cplg, 60 PSI,	LF	5.55	0.48
1540	Piping, gas & dist, 4" dia, SDR 11, 40' jt w/cplg, 60 PSI,	LF	8.06	1.32
1600	Piping, gas & dist, 6" dia, SDR 11, 40' jt w/cplg, 60 PSI,	LF	16.35	1.92
1640	Piping, gas & dist, 8" dia, SDR 11, 40' jt w/cplg, 60 PSI,	LF	21.63	2.17
02684 3000 Gas Line Taps				
02684 3100 Polyethylene, 60 PSI				
3101	1 1/4" - 4" Gas Taps, PE Pipe, 60 PSI to 1/2"-1" Service Line	EA	59.91	16.02
3102	1 1/4" - 4" Gas Taps, PE Pipe, 60 PSI 1-1/4" to 2" Service Line	EA	208.78	16.02
02684 3200 Steel, Schedule 40				
Note: For Punch Steel Service Tee				
3201	1/2" IPS Weld Base, 1/2" IPS Comp./P.E. Pipe outlet	EA	70.85	22.45
3202	3/4" IPS Weld Base, 1/2" IPS Comp./P.E. Pipe Outlet	EA	72.16	22.80
3203	3/4" IPS Weld Base, 3/4" IPS Comp./P.E. Pipe Outlet	EA	78.87	24.94
3204	3/4" IPS Weld Base, 1" IPS Comp./P.E. Pipe Outlet	EA	85.49	26.96
3205	1" IPS Weld Base, 1" IPS Comp./P.E. Pipe Outlet	EA	87.43	27.17
3206	1 1/4" IPS Weld Base, 1" IPS Comp./P.E. Pipe Outlet	EA	88.83	27.52
3207	1 1/4" IPS Weld Base, 1 1/4" IPS Comp./P.E. Pipe Outlet	EA	97.14	30.03
02684 4000 Protective Pipe And Fitting Wap				
02684 4100 Corrosion Resistance Wap & Coat - Pipe				
Note: For Underground Utilities				
4101	1/2" Pipe Wrap	LF	0.83	
4102	3/4" Pipe Wrap	LF	0.83	
4103	1" Pipe Wrap	LF	0.83	
4104	1-1/4" Pipe Wrap	LF	0.85	
4105	1-1/2" Pipe Wrap	LF	0.85	
4106	2" Pipe Wrap	LF	0.88	
4107	2-1/2" Pipe Wrap	LF	0.96	
4108	3" Pipe Wrap	LF	0.96	
4109	4" Pipe Wrap	LF	0.96	
4111	6" Pipe Wrap	LF	1.03	
02684 4200 Corrosion Resistance Wap & Coat - Fittings				
Note: Field Applied				
4201	1/2" Fitting Wrap	EA	6.71	
4202	3/4" Fitting Wrap	EA	6.71	
4203	1" Fitting Wrap	EA	8.23	
4204	1-1/4" Fitting Wrap	EA	9.39	
4205	1-1/2" Fitting Wrap	EA	9.39	
4206	2" Fitting Wrap	EA	11.12	
4207	2-1/2" Fitting Wrap	EA	14.80	
4208	3" Fitting Wrap	EA	21.07	
4209	4" Fitting Wrap	EA	21.43	
4211	6" Fitting Wrap	EA	24.79	
02686 0010 Piping, gas service & distribution, steel				
02686 4000 Steel Schedule 40, plain end Coal Tar Enamal & Wapped				
4040	Piping, gas & dist, pl end, 1" dia, steel, tar ctd & wrapped,	LF	6.31	1.16
4080	Piping, gas & dist, pl end, 2" dia, steel, tar ctd & wrapped,	LF	7.93	1.23
4120	Piping, gas & dist, pl end, 3" dia, steel, tar ctd & wrapped,	LF	10.66	1.57
4160	Piping, gas & dist, pl end, 4" dia, steel, tar ctd & wrapped,	LF	15.20	2.64
4200	Piping, gas & dist, pl end, 5" dia, steel, tar ctd & wrapped,	LF	19.91	3.15
4240	Piping, gas & dist, pl end, 6" dia, steel, tar ctd & wrapped,	LF	24.36	3.81
4280	Piping, gas & dist, pl end, 8" dia, steel, tar ctd & wrapped,	LF	35.49	5.09
02688 0010 Piping, valves, gas distribution				
02688 0299 Gas pressure regulator				
0300	Piping, valve, gas dist, screwed end, 3/4", pressure rgltr	EA	73.74	6.01

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0310	Piping, valve, gas dist, screwed end, 1", pressure rgltr	EA	80.13	6.47
0320	Piping, valve, gas dist, screwed end, 1.25", pressure rgltr	EA	84.66	7.79
0330	Piping, valve, gas dist, screwed end, 1.5", pressure rgltr	EA	327.68	10.25
0340	Piping, valve, gas dist, screwed end, 2", pressure rgltr	EA	554.20	12.82
02688 0600 Pressure regulator valves				
0700	Piping, valve, 3" dia, gas dist, pressure rgltr, iron & bronze	EA	1,742.13	54.07
0740	Piping, valve, 4" dia, gas dist, pressure rgltr, flanged end	EA	3,665.59	109.92
02688 2999 Gas meter Digital Reading				
NOTE: Maximum Working Pressures 5Lbs To 100Lbs, Threaded Connections Note: Pressure And Temperature Comp-ensation Are Not Included				
3000	Piping, valve, 5# press, gas dist, thd, 250 CF/hr, meter,	EA	188.54	23.24
3010	Piping, valve, 10# press, gas dist, thd, 425 CF/hr, meter,	EA	350.38	32.78
3020	Piping, valve, 25# press, gas dist, thd, 425 CF/hr, meter,	EA	419.17	33.07
3030	Piping, valve, 20# press, gas dist, thd, 800 CF/hr, meter,	EA	953.14	42.01
3040	Piping, valve, 100# press, gas dist, thd, 800 CF/hr, meter,	EA	1,479.15	56.34
3050	Piping, valve, 25# press, gas dist, thd, 1000 CF/hr, meter,	EA	1,168.45	43.04
3060	Piping, valve, 100# press, gas dist, thd, 1000 CF/hr, meter,	EA	1,494.82	48.50
3070	Piping, valve, 100# press, gas dist, thd, 1400 CF/hr, meter,	EA	2,300.11	57.26
3080	Piping, valve, 100# press, gas dist, thd, 2300 CF/hr, meter,	EA	3,249.72	67.31
3090	Piping, valve, 100# press, gas dist, thd, 5000 CF/hr, meter,	EA	4,873.85	108.89
02688 3999 Gas turbine meter, digital				
4000	Piping, valve, 4" flgd end, gas dist, 175PSI, 18KCF/hr, turb	EA	4,117.11	95.01
4010	Piping, valve, 6" flgd end, gas dist, 175PSI, 30KCF/hr, turb	EA	6,754.33	129.82
4020	Piping, valve, 8" flgd end, gas dist, 175PSI, 60KCF/hr, turb	EA	7,608.17	153.56
4030	Piping, valve, 12" flgd end, gas dist, 175PSI, 150KCF/hr, turb	EA	17,661.90	140.92

02689 Elec/Communication Structures

02689 3000 Electric & Telephone Site Work

3001	Elec & tel sitewk, underground marking tape, 6" wide	LF	0.34	
3002	hand holes, prcst conc, W/conc cov, 2' x 2' x 3' D	EA	417.13	
3003	hand holes, precast conc, w/conc cov, 3' x 3' x 3' D	EA	544.49	
3004	hand holes, precast conc, w/cov er, 4' x 4' x 4' D	EA	658.27	
3005	mhs, prcst Wiron racks&pulling irons, &cov, 4' x6' x7' D	EA	2,197.17	
3006	mhs, prcst Wiron racks&pulling irons, &cov, 6' x8' x7' D	EA	2,538.92	
3007	mhs, prcst Wiron racks&pulling irons, &cov, 6' x10' x7' D	EA	2,780.15	
3008	ps, wd, treatment, see also div 16520, 20' hi	EA	281.75	
3009	Electric & tel sitework, ps, wd, treatment, 25' high	EA	298.76	
3010	Electric & tel sitework, ps, wd, treatment, 30' high	EA	323.85	
3011	Electric & tel sitework, ps, wd, treatment, 35' high	EA	411.83	
3012	Electric & tel sitework, ps, wd, treatment, 40' high	EA	498.46	
3013	Electric & tel sitework, ps, wd, treatment, 45' high	EA	614.17	
3014	ps, cross arms W hdwe & insulators, 4' L	EA	130.86	
3015	ps, cross arms W hdwe & insulators, 5' L	EA	150.54	
3016	ps, cross arms W hdwe & insulators, 6' L	EA	172.05	
3017	Elec & tel sitewk, ugn duct, PV C, type EB, 1 @ 2" dia	LF	0.75	
3018	Elec & tel sitewk, ugn duct, PV C, type EB, 2 @ 2" dia	LF	1.51	
3019	Elec & tel sitewk, ugn duct, PV C, type EB, 4 @ 2" dia	LF	3.02	
3020	Elec & tel sitewk, ugn duct, PV C, type EB, 1 @ 3" dia	LF	1.01	
3021	Elec & tel sitewk, ugn duct, PV C, type EB, 2 @ 3" dia	LF	2.02	
3022	Elec & tel sitewk, ugn duct, PV C, type EB, 4 @ 3" dia	LF	4.03	
3023	Elec & tel sitewk, ugn duct, PV C, type EB, 1 @ 4" dia	LF	1.50	
3024	Elec & tel sitewk, ugn duct, PV C, type EB, 2 @ 4" dia	LF	3.02	
3025	Elec & tel sitewk, ugn duct, PV C, type EB, 4 @ 4" dia	LF	6.05	
3026	Elec & tel sitewk, ugn duct, PV C, type EB, 6 @ 4" dia	LF	9.05	
3027	Elec & tel sitewk, ugn duct, PV C, type EB, 1 @ 5" dia	LF	2.17	
3028	Elec & tel sitewk, ugn duct, PV C, type EB, 2 @ 5" dia	LF	4.34	
3029	Elec & tel sitewk, ugn duct, PV C, type EB, 4 @ 5" dia	LF	8.60	
3030	Elec & tel sitewk, ugn duct, PV C, type EB, 6 @ 5" dia	LF	12.77	
3031	Elec & tel sitewk, ugn duct, PV C, type EB, 1 @ 6" dia	LF	3.09	
3032	Elec & tel sitewk, ugn duct, PV C, type EB, 2 @ 6" dia	LF	6.17	
3033	Elec & tel sitewk, ugn duct, PV C, type EB, 4 @ 6" dia	LF	12.40	
3034	Elec & tel sitewk, ugn duct, PV C, type EB, 6 @ 6" dia	LF	18.80	
3035	ugnd duct banks, rgd galv st, 2 @ 2" dia	LF	10.25	
3036	ugnd duct banks, rgd galv st, 4 @ 2" dia	LF	20.52	
3037	ugnd duct banks, rgd galv st, 2 @ 3" dia	LF	22.46	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3038	ugnd duct banks, rgd galv st, 4 @ 3" dia	LF	44.91	
3039	ugnd duct banks, rgd galv st, 2 @ 4" dia	LF	32.31	
3040	ugnd duct banks, rgd galv st, 4 @ 4" dia	LF	64.67	
3041	ugnd duct banks, rgd galv st, 6 @ 4" dia	LF	96.56	
3042	ugnd duct banks, rgd galv st, 2 @ 5" dia	LF	65.88	
3043	ugnd duct banks, rgd galv st, 4 @ 5" dia	LF	131.77	
3044	ugnd duct banks, rgd galv st, 6 @ 5" dia	LF	196.99	
3045	ugnd duct banks, rgd galv st, 2 @ 6" dia	LF	92.46	
3046	ugnd duct banks, rgd galv st, 4 @ 6" dia	LF	184.94	
3047	ugnd duct banks, rgd galv st, 6 @ 6" dia	LF	277.68	
3048	underground duct banks, under 1 C.Y.	CY	118.57	
3049	underground duct banks, 1 C.Y. - 5 C.Y.	CY	106.07	
3050	underground duct banks, over 5 C.Y.	CY	87.72	
3051	Elec&tel sitewk, ugnd duct banks , for reinf rods - add, #4 to #	TON	1,052.18	
3052	ugnd duct banks, for reinf rods - add, #8 to #14	TON	930.02	
3053	ugnd duct banks, ftg, PVC type EB, elb, 2" dia	EA	12.83	
3054	ugnd duct banks, ftg, PVC type EB, elb, 3" dia	EA	13.72	
3055	ugnd duct banks, ftg, PVC type EB, elb, 4" dia	EA	18.82	
3056	ugnd duct banks, ftngs, PVC typ e EB, elb, 5" dia	EA	38.02	
3057	ugnd duct banks, ftngs, PVC typ e EB, elb, 6" dia	EA	69.71	
3058	ugnd duct banks, ftngs, PVC typ e EB, cplg, 2" dia	EA	1.42	
3059	ugnd duct banks, ftngs, PVC typ e EB, cplg, 3" dia	EA	2.08	
3060	ugnd duct banks, ftngs, PVC typ e EB, cplg, 4" dia	EA	3.37	
3061	ugnd duct banks, ftngs, PVC typ e EB, cplg, 5" dia	EA	6.10	
3062	ugnd duct banks, ftngs, PVC typ e EB, cplg, 6" dia	EA	9.71	
3063	ugnd duct banks, ftg, PVC type EB, adapter, 2" dia	EA	3.32	
3064	ugnd duct banks, ftg, PVC type EB, adapter, 3" dia	EA	7.39	
3065	ugnd duct banks, ftg, PVC type EB, adapter, 4" dia	EA	9.59	
3066	ugnd duct banks, ftngs, PVC typ e EB, adapter, 5" dia	EA	21.40	
3067	ugnd duct banks, ftngs, PVC typ e EB, adapter, 6" dia	EA	28.48	
3068	ugnd duct banks, ftngs, PVC type E B, end bell, 2" dia	EA	6.49	
3069	ugnd duct banks, ftngs, PVC type E B, end bell, 3" dia	EA	7.65	
3070	ugnd duct banks, ftngs, PVC type E B, end bell, 4" dia	EA	9.01	
3071	ugnd duct banks, ftngs, PVC type E B, end bell, 5" dia	EA	12.67	
3072	ugnd duct banks, ftngs, PVC type E B, end bell, 6" dia	EA	19.49	
3073	ugnd duct banks, ftngs, PVC type E B, 5< angle cplg, 2" dia	EA	8.42	
3074	ugnd duct banks, ftngs, PVC type E B, 5< angle cplg, 3" dia	EA	11.05	
3075	ugnd duct banks, ftngs, PVC type E B, 5< angle cplg, 4" dia	EA	13.20	
3076	ugnd duct banks, ftngs, PVC type E B, 5< angle cplg, 5" dia	EA	14.72	
3077	ugnd duct banks, ftngs, PVC type E B, 5< angle cplg, 6" dia	EA	15.85	
3078	ugnd duct banks, ftngs, PVC typ e EB, exp jt, 2" dia	EA	23.97	
3079	ugnd duct banks, ftngs, PVC typ e EB, exp jt, 3" dia	EA	40.69	
3080	ugnd duct banks, ftngs, PVC typ e EB, exp jt, 4" dia	EA	58.65	
3081	ugnd duct banks, ftngs, PVC typ e EB, exp jt, 5" dia	EA	85.76	
3082	ugnd duct banks, ftngs, PVC typ e EB, exp jt, 6" dia	EA	114.75	
3083	ugnd duct banks, ftngs, PVC type E B, ht bender, 2" dia	EA	355.35	
3084	ugnd duct banks, ftngs, PVC type E B, ht bender, 6" dia	EA	1,018.31	
3085	Elec&tel sitewk, ugnd duct banks , ftngs, PVC type EB, cem quar	EA	10.50	
3086	Elec & tel sitewk, nylon polyeth ylene pull rope, 1/4"	LF	0.12	

02700 Sewerage & Drainage

02701 Drainage

02704 0010 Drainage

02704 0099 Fabric, laid in trench, polypropylene

0130	Drainage, fabric, 60 mil thick, laid in trench, polypropylene	SY	1.14	
0140	Drainage, fabric, 120 mil thick, laid in trench, polypropylene	SY	2.07	

02704 0149 Fabric, in underground drain lines, plastic

0150	Drainage, plastic filter fabric, in underground drains	CSF	108.98	
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02704 0299 Drainage material, fill in trench, gravel

0300	Drainage, drainage mtl, 3/4" gravel fill in trench	CY	19.16	
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02704 0499 Capillary water barrier

0501	Drainage, capillary water barrier, 4" compacted thickness	SY	9.55	
0512	Drainage, capillary water barrier, 6" compacted thickness	SY	14.46	
0522	Drainage, capillary water barrier, 8" compacted thickness	SY	19.10	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02705 Subdrainage Systems				
02709 0010 Piping, subdrainage, corrugated plastic				
02709 2099 Perforated PVC, schedule 40				
2100	Piping, subdrainage, perforated PVC, 4" dia	LF	5.91	1.57
2110	Piping, subdrainage, perforated PVC, 6" dia	LF	7.08	1.76
2120	Piping, subdrainage, perforated PVC, 8" dia	LF	7.53	1.79
2130	Piping, subdrainage, perforated PVC, 10" dia	LF	9.01	1.86
2140	Piping, subdrainage, perforated PVC, 12" dia	LF	10.60	1.91
02710 0010 Piping, subdrainage, corrugated metal				
02710 2010 Aluminum perforated				
2020	Piping, subdrainage, 18 ga, corr metal, al, perforated, 6" dia	LF	6.70	0.66
2200	Piping, subdrainage, 16 ga, corr metal, al, perforated, 8" dia	LF	8.00	0.72
2220	Piping, subdrainage, 16 ga, corr metal, al, perforated, 10" dia	LF	9.10	0.79
2240	Piping, subdrainage, 16 ga, corr metal, al, perforated, 12" dia	LF	10.78	0.97
2260	Piping, subdrainage, 16 ga, corr metal, al, perforated, 18" dia	LF	15.60	1.41
02712 0010 Piping, subdrainage, vitrified clay				
02712 0999 Foundation drain, non-perforated				
1000	Piping, subdrainage, 6" dia, vitrified clay, non-perforated	LF	7.19	0.66
1010	Piping, subdrainage, 8" dia, vitrified clay, non-perforated	LF	8.02	0.78
1012	10" (25cm) Dia Clay Pipe, Fdn Drain	LF	9.93	0.82
1020	Piping, subdrainage, 12" dia, vitrified clay, non-perforated	LF	13.81	1.13
02712 2999 Foundation drain, perforated				
3000	Piping, subdrainage, C700, 4" dia, 5' L, vitrified clay,	LF	5.51	1.07
3020	Piping, subdrainage, C700, 6" dia, 5' L, vitrified clay,	LF	7.77	1.07
3040	Piping, subdrainage, C700, 8" dia, 5' L, vitrified clay,	LF	9.05	1.10
3060	Piping, subdrainage, C700, 12" dia, 5' L, vitrified clay,	LF	13.84	1.16
02712 3100 Perforated Concrete Pipe				
3101	6" Dia Perf Conc Pipe, Fdn Drain (15cm) Diameter	LF	10.34	0.69
3102	8" Dia Perf Conc Pipe, Fdn Drain (21cm) Diameter	LF	11.90	0.69
3103	10" Dia Perf Conc Pipe, Fdn Drain (25cm) Diameter	LF	13.19	0.72
3104	12" Dia Perf Conc Pipe, Fdn Drain (36cm) Diameter	LF	15.51	0.72
02750 Sewage Systems				
02752 0010 Catch basins or manholes				
Note: Grout Included; Not Including Frame And Grate, Excavation And Backfill				
02752 0049 Brick				
0050	CB or manholes, brick, 4' inside dia, 4' deep, 8" wall	EA	736.14	171.94
0100	CB or manholes, brick, 4' inside dia, 6' deep, 8" wall	EA	1,047.59	257.92
0150	CB or manholes, brick, 4' inside dia, 8' deep, 8" wall	EA	1,421.91	343.90
0152	4' ID Brick Manhole 8" (20cm) Wall, (1.2M) ID, Depth Over 8' Add	VLF	246.07	42.74
02752 0720 Concrete				
02752 0720 Grate Inlets, Light Duty 3Ft. 8In. X 3Ft. 8In. X 6In. Thick Wall, Cast In Place				
0721	3'-8"x3'-8"x2' Dp CIP Grate Inlet 6" Thick Wall, Storm Drainage	EA	874.80	80.29
0722	3'-8"x3'-8"x3' Dp CIP Grate Inlet 6" Thick Wall, Storm Drainage	EA	1,068.43	108.20
0723	3'-8"x3'-8"x4' Dp CIP Grate Inlet 6" Thick Wall, Storm Drainage	EA	1,341.20	149.68
0724	3'-8"x3'-8"x5' Dp CIP Grate Inlet 6" Thick Wall, Storm Drainage	EA	1,651.19	173.05
0725	3'-8"x3'-8"x6' Dp CIP Grate Inlet 6" Thick Wall, Storm Drainage	EA	1,869.43	199.11
02752 0739 Cast in place Heavy Duty				
0740	CB or manholes, 4' x 4', 8" thick, conc, cast in place, 2'	EA	662.21	55.86
0760	CB or manholes, 4' x 4', 8" thick, conc, cast in place, 3'	EA	920.52	77.63
0800	CB or manholes, 4' x 4', 8" thick, conc, cast in place, 4'	EA	1,122.68	105.29
0820	CB or manholes, 4' x 4', 8" thick, conc, cast in place, 5'	EA	1,395.02	130.72
0900	CB or manholes, 4' x 4', 8" thick, conc, cast in place, 6'	EA	1,534.53	146.90
1010	CB or manholes, 4' dia, 8" thick, conc, cast in place, 4'	EA	1,168.71	110.15
1020	CB or manholes, 4' dia, 8" thick, conc, cast in place, 5'	EA	1,591.75	146.90
1030	CB or manholes, 4' dia, 8" thick, conc, cast in place, 6'	EA	2,288.48	220.34
1100	CB or manholes, conc, cast in place, for depths over 6' add	VLF	280.18	35.42
02752 1109 Precast, ASTM C478, including base				
1110	CB or manholes, conc, precast, 4' ID, 4' deep	EA	608.74	39.39
1120	CB or manholes, conc, precast, 4' ID, 6' deep	EA	825.96	53.84
1130	CB or manholes, conc, precast, 4' ID, 8' deep	EA	1,070.29	80.78

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1140	CB or manholes, conc, precast, 4' ID, for depths over 8' add	VLF	154.55	20.39
02752 1250	Slab tops, precast			
1300	CB or manholes, conc, slab tops, precast, 8" thick, 4' dia	EA	262.44	30.26
1400	CB or manholes, conc, slab tops, precast, 8" thick, 5' dia	EA	343.01	32.04
1500	CB or manholes, conc, slab tops, precast, 8" thick, 6' dia	EA	421.56	32.31
02752 1599	Frames, covers and steps			
1620	CB or manholes, frames & covers, CI, 24" square, 400 lb	EA	290.60	13.43
1625	CB or manholes, frames & covers, CI, 24" sq, 500 lb, reg type	EA	328.65	13.77
2900	CB or manholes, frames & covers, 3 piece, 10" deep, 1200 lb	EA	817.23	67.68
02752 3320	Raise existing frames and covers for paving			
3340	CB or manholes, to 12" wide, brick, conc collar, frames &	EA	79.52	
3350	CB or manholes, raise 2" w/brick/stl collar, to 12"W	EA	183.91	
3390	CB or manholes, frs & covs, conc grade rings, 24" dia, 6" H	EA	91.87	
02752 3399	Inverts			
02752 3399	Single channel			
3400	CB or manholes, inverts, single channel, brick	EA	211.93	26.55
02752 3599	Triple channel			
3600	CB or manholes, inverts, triple channel, brick	EA	317.04	39.86
3700	CB or manholes, inverts, triple channel, conc	EA	208.84	26.58
02752 3909	Steps, heavyweight cast iron			
3910	CB or manholes, steps, 10" x 10", heavyweight CI, for precast MH	EA	6.33	0.09
3920	CB or manholes, steps, 12" x 10-1/2", heavyweight CI, all	EA	19.64	0.62
02752 4499	Catch basin			
02752 4499	Round			
4504	Catch basin, CI, frame & cover, 26" dia	EA	295.44	14.05
4506	Catch basin, CI, frame & cover, 24" dia	EA	272.19	14.29
02752 4507	Square			
4508	Catch basin, CI, frame & cover, square, 23" x 23"	EA	403.63	12.20
4510	Catch basin, CI, frame & cover, square, 27" x 20"	EA	475.76	13.67
4520	Catch basin, CI, frame & cover, square, 24" x 24"	EA	407.88	11.99
4530	Catch basin, CI, frame & cover, square, 26" x 26"	EA	559.56	16.99
02752 4539	Curb inlet type			
4540	Catch basin, CI, frame & cover, curb inlet type, 27" x 27"	EA	1,135.54	16.10
4550	Catch basin, CI, frame & cover, curb inlet type, 22" x 24"	EA	314.53	12.20
4560	Catch basin, CI, frame & cover, curb inlet type, 36" x 24"	EA	341.05	13.02
4580	Catch basin, CI, frame & cover, curb inlet type, 20" x 22"	EA	402.57	10.07
02752 4589	Manhole cover & frame			
02752 4589	Cast iron & Aluminum			
4590	Manhole cover & frame, CI, city type, 18" dia x 100 lb	EA	201.66	16.69
4600	Manhole cover & frame, CI, city type, 24" dia x 200 lb	EA	265.84	18.74
4603	Manhole cover & frame, CI, city type, 24" dia x 300 lb	EA	258.70	22.55
4606	Manhole cover & frame, city type, CI, 24" dia x 400 lb	EA	293.36	22.79
4610	Manhole cover & frame, CI, city type, 26" dia x 475 lb	EA	316.05	25.53
4620	Manhole cover & frame, CI, city type, 30" dia x 620 lb	EA	468.96	29.78
4630	Manhole cover & frame, CI, city type, square, 8" x 8" x 75 lb	EA	207.07	29.78
4640	Manhole cover & frame, CI, city type, square, 24" x 24" x 126 lb	EA	268.43	22.31
4641	Manhole cover & frame, CI, city type, square, 24"x24"x500 lb	EA	316.67	20.32
4642	Manhole cover & frame, aluminum, 12" x 12"	EA	336.31	8.36
4644	Manhole cover & frame, aluminum, 18" x 18"	EA	413.75	6.13
4648	Manhole cover & frame, aluminum, 24" x 24"	EA	687.95	8.29
02752 4649	Watertight			
4650	Manhole cover & frame, watertight, 20" dia x 200 lb	EA	246.37	13.50
4660	Manhole cover & frame, watertight, 24" dia x 350 lb	EA	345.07	16.96
02752 4669	Step type			
4670	Manhole cover & frame, step type, iron, 7" x 9"	EA	271.84	11.62
4680	Manhole cover & frame, step type, iron, 8" x 9"	EA	313.63	13.39
4690	Manhole cover & frame, step type, CI, standard size	EA	322.38	6.58
02752 5004	Box, trench sections, precast, not incl grates Pipe Not Included			
5005	CB, box, trench sections, precast conc, 2' x 2' ID	LF	118.90	7.06
5010	CB, box, trench sections, precast conc, 2.5' x 2' ID	LF	127.35	7.47
5020	CB, box, trench sections, precast conc, 3' x 2' ID	LF	137.44	7.79

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5030	CB, box, trench sections, precast conc, 3.5' x 2' ID	LF	147.69	8.20
5040	CB, box, trench sections, precast conc, 4' x 2' ID	LF	154.61	8.79
5050	CB, box, trench sections, precast conc, 5' x 2' ID	LF	180.72	9.61
5060	CB, box, trench sections, precast conc, 6' x 2' ID	LF	206.06	9.61
5070	CB, box, trench sections, precast conc, 4' x 2.5' ID	LF	158.34	9.61
5080	CB, box, trench sections, precast conc, 5' x 2.5' ID	LF	188.56	9.61
5090	CB, box, trench sections, precast conc, 6' x 2.5' ID	LF	213.36	10.83
02752 5149	Temporary trench drain			
5150	CB or manholes, exc gravity run off, temp trench drain, 2' x 3'	CY	8.23	1.85
5160	12"Dia Corr Metal Pipe, Temp Drn (36cm)D,Inst & Rem w/Exc, 3 Use	LF	10.07	2.27
5170	18"Dia Corr Metal Pipe, Temp Drn (46cm)D,Inst & Rem w/Exc, 3 Use	LF	12.17	2.38
02752 6000	Precast Catch Basins			
6001	Prec Catch Basin,Sgl or Dbl Wing Slab Top w/Throat	EA	521.69	112.52
6002	Prec Catch Basin,4' x 4' Weir Box 4' x 4' Weir Box	EA	288.77	10.58
6003	Prec Catch Basin, 4' Dia Inlets Round to Square Adapter	EA	153.13	11.86
02753 0010	Headwall			
02753 0099	Cast in place			
0100	Headwall, conc, CIP, 12" dia pipe, 30 deg skewed wingwall	EA	668.62	210.35
0102	CIP Concrete Headwall, 15" Pipe 30 Degree Skewed Headwall	EA	787.39	238.58
0110	Headwall, conc, CIP, 18" dia pipe, 30 deg skewed wingwall	EA	906.05	265.14
0120	Headwall, conc, CIP, 24" dia pipe, 30 deg skewed wingwall	EA	1,238.27	331.55
0130	Headwall, conc, CIP, 30" dia pipe, 30 deg skewed wingwall	EA	1,626.53	420.10
0140	Headwall, conc, CIP, 36" dia pipe, 30 deg skewed wingwall	EA	2,121.04	645.82
0142	CIP Concrete Headwall, 42" Pipe 30 Degree Skewed Wingwall	EA	2,755.99	886.97
0150	Headwall, conc, CIP, 48" dia pipe, 30 deg skewed wingwall	EA	3,538.74	1,128.08
0152	CIP Concrete Headwall, 54" Pipe 30 Degree Skewed Wingwall	EA	4,069.14	1,403.20
0160	Headwall, conc, CIP, 60" dia pipe, 30 deg skewed wingwall	EA	5,317.02	1,737.35
02753 0199	Precast			
0200	Headwall, precast, 12" dia pipe	EA	333.18	59.45
0202	Precast Conc Headwall, 15" Pipe	EA	411.88	65.39
0210	Headwall, precast, 18" dia pipe	EA	379.24	76.20
0220	Headwall, precast, 24" dia pipe	EA	437.58	77.47
0230	Headwall, precast, 30" dia pipe	EA	567.75	87.76
0240	Headwall, precast, 36" dia pipe	EA	687.98	107.29
0242	Precast Conc Headwall, 42" Pipe	EA	1,023.10	118.30
0250	Headwall, precast, 48" dia pipe	EA	1,001.71	118.52
0252	Precast Conc Headwall, 54" Pipe	EA	1,200.10	136.15
0260	Headwall, precast, 60" dia pipe	EA	1,398.49	154.22
0262	Precast Conc Headwall, 84" Pipe	EA	1,957.90	215.92
02762 0010	Piping, drainage & sewage, concrete			
02762 1000	Non-reinforced conc pipe (NRCP), extra strength			
1010	Piping, drainage & sewage, NRCP, extra str,b&s/T&G,6" dia	LF	9.30	2.04
1012	8" Unreinf Extra Stngh Conc Pipe (21cm) Diameter	LF	10.57	2.11
1014	10"Unreinf Extra Stngh Conc Pipe (25cm) Diameter	LF	11.62	2.14
1040	Piping, drainage & sewage, NRCP, extra str,b&s/T&G,12" dia	LF	12.95	2.20
1042	15"Unreinf Extra Stngh Conc Pipe (38cm) Diameter	LF	15.88	2.45
1060	Piping, drainage & sewage, NRCP, extra str,b&s/T&G,18" dia	LF	18.22	2.92
1062	21"Unreinf Extra Stngh Conc Pipe (53cm) Diameter	LF	24.73	2.98
1080	Piping, drainage & sewage, NRCP, extra str,b&s/T&G,24" dia	LF	26.80	3.05
02762 2000	Reinforced concrete pipe (RCP)			
02762 2000 Class 3, ASTM C-76				
2010	Piping, drainage & sewage, 12" dia, RCP, class 3, no gaskets	LF	15.63	4.71
2020	15"(38cm) Dia Cl III Conc Pipe Reinforced without Gaskets	LF	18.99	5.24
2030	Piping, drainage & sewage, 18" dia, RCP, class 3, no gaskets	LF	23.67	5.81
2035	Piping, drainage & sewage, 21" dia, RCP, class 3, no gaskets	LF	28.18	6.34
2040	Piping, drainage & sewage, 24" dia, RCP, class 3, no gaskets	LF	32.42	6.88
2045	Piping, drainage & sewage, 27" dia, RCP, class 3, no gaskets	LF	47.24	7.39
2050	Piping, drainage & sewage, 30" dia, RCP, class 3, no gaskets	LF	52.61	7.97
2060	Piping, drainage & sewage, 36" dia, RCP, class 3, no gaskets	LF	68.80	9.12
2070	Piping, drainage & sewage, 42" dia, RCP, class 3, no gaskets	LF	79.89	10.65
2080	Piping, drainage & sewage, 48" dia, RCP, class 3, no gaskets	LF	94.78	12.14
2090	Piping, drainage & sewage, 60" dia, RCP, class 3, no gaskets	LF	124.21	15.19
2100	Piping, drainage & sewage, 72" dia, RCP, class 3, no gaskets	LF	166.87	18.25

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02762 2300 Porous Concrete Pipe Std. Strength				
2301	4"Dia Std Stngh Porous Conc Pipe (10cm) Diameter	LF	6.66	1.02
2302	6"Dia Std Stngh Porous Conc Pipe (15cm) Diameter	LF	7.10	1.02
2303	8"Dia Std Stngh Porous Conc Pipe (21cm) Diameter	LF	8.47	1.09
2304	12"D Std Stngh Porous Conc Pipe (31cm) Diameter	LF	12.63	1.22
2305	15"D Std Stngh Porous Conc Pipe (38cm) Diameter	LF	15.00	1.22
2306	18"D Std Stngh Porous Conc Pipe (46cm) Diameter	LF	20.30	1.71
02762 2600 Class 5, ASIMC-76				
2630	Piping, drainage & sewage, RCP, class 5, 60" dia	LF	173.57	17.46
2632	Piping, drainage & sewage, RCP, class 5, 72" dia	LF	236.92	20.97
02762 2899 Precast flared end				
2900	Piping, drainage & sewage, RCP, precast end section, 18" dia	EA	279.43	25.35
2902	Piping, drainage & sewage, RCP, precast end section, 12" dia	EA	249.50	17.37
2905	Piping, drainage & sewage, RCP, precast end section, 21" dia	EA	436.08	29.90
2908	Piping, drainage & sewage, RCP, precast end section, 27" dia	EA	539.02	34.84
2910	Piping, drainage & sewage, RCP, precast end section, 24" dia	EA	352.95	40.37
2960	Piping, drainage & sewage, RCP, precast end section, 30" dia	EA	440.88	46.23
4300	Piping, drainage & sewage, RCP, precast end section, 36" dia	EA	651.82	59.14
4400	Piping, drainage & sewage, RCP, precast end section, 42" dia	EA	931.25	75.79
4800	Piping, drainage & sewage, RCP, precast end section, 48" dia	EA	1,148.16	95.03
4900	Piping, drainage & sewage, RCP, precast end section, 60" dia	EA	1,984.69	135.94
5000	Piping, drainage & sewage, RCP, precast end section, 72" dia	EA	3,286.27	187.60
5100	Piping, drainage & sewage, RCP, round, 48" dia, precast flared	EA	1,203.10	106.71
5200	Piping, drainage & sewage, RCP, round, 60" dia, precast flared	EA	2,262.60	148.45
02764 0010 Piping, storm drainage, corr metal, w/o exc/bkfl				
02764 2000 Corrugated metal pipe, galvanized and coated				
02764 2020 Bituminous coated with paved invert, pipe				
2040	Piping, storm drain, 8" dia, 20' L, 16ga, CMP, bitum ctd w/paved	LF	12.42	1.29
2042	10" (25CM) 16 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	16.39	2.01
2080	Piping, storm drain, 12" dia, 20' L, 16ga, CMP, bitum ctd	LF	20.34	2.26
2082	15" (38cm) 16 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	21.27	2.48
2120	Piping, storm drain, 18" dia, 20' L, 16ga, CMP, bitum ctd	LF	22.19	2.73
2140	Piping, storm drain, 24" dia, 20' L, 14ga, CMP, bitum ctd	LF	30.31	3.17
2160	Piping, storm drain, 30" dia, 20' L, 14ga, CMP, bitum ctd	LF	47.44	4.66
2180	Piping, storm drain, 36" dia, 20' L, 12ga, CMP, bitum ctd	LF	69.36	7.43
2182	42" (106cm) 12 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	79.36	7.80
2200	Piping, storm drain, 48" dia, 20' L, 12ga, CMP, bitum ctd	LF	89.34	8.21
2202	54" (137cm) 12 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	116.70	9.70
2220	Piping, storm drain, 60" dia, 20' L, 10ga, CMP, bitum ctd	LF	143.97	11.19
2222	66" (167cm) 10 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	174.48	13.54
2240	Piping, storm drain, 72" dia, 20' L, 8ga, CMP, bitum ctd w/paved	LF	204.98	15.85
2242	78" (198cm) 10 Ga Corr Metal Pipe Galv Or Alum Bituminous Coated	LF	222.06	11.11
02764 2249 Bituminous coated w/paved invert, end sections				
2250	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 8" dia	EA	107.00	23.28
2255	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 10" dia	EA	110.50	23.28
2260	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 12" dia	EA	122.36	25.88
2265	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 15" dia	EA	128.59	25.88
2270	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 18" dia	EA	160.65	29.09
2275	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 24" dia	EA	241.53	44.58
2280	Piping, storm drain, 16 ga, CMP, bitum ctd, end section, 30" dia	EA	349.73	50.77
2285	Piping, storm drain, 14 ga, CMP, bitum ctd, end section, 36" dia	EA	439.59	50.77
2290	Piping, storm drain, 14 ga, CMP, bitum ctd, end section, 48" dia	EA	858.26	71.33
2292	Piping, storm drain, 14 ga, CMP, bitum ctd, end section, 60" dia	EA	1,468.14	124.56
2294	Piping, storm drain, 14 ga, CMP, bitum ctd, end section, 72" dia	EA	1,795.63	149.53
2296	Piping, storm drain, 14 ga, CMP, bitum ctd, end section, 84" dia	EA	2,117.47	186.91
2298	Piping, storm drain, 18" x 11", 16 ga, CMP, bitum ctd, end	EA	268.67	77.52
02764 2299 Bituminous coated w/paved invert, bends or elbows With Paved Invert.				
2300	Piping, storm drain, CMP, bitum ctd, 90 deg bend/elbow, 8" dia	EA	113.60	9.61
2340	Piping, storm drain, 12" dia, 16 ga, CMP, bitum ctd, 90 deg	EA	155.47	12.82
2342	Piping, storm drain, 18" dia, 16 ga, CMP, bitum ctd, 90 deg	EA	234.90	13.88
2344	Piping, storm drain, 24" dia, 14 ga, CMP, bitum ctd, 90 deg	EA	325.13	19.60
2346	Piping, storm drain, 30" dia, 14 ga, CMP, bitum ctd, 90 deg	EA	443.31	25.41
2348	Piping, storm drain, 36" dia, 14 ga, CMP, bitum ctd, 90 deg	EA	602.08	42.93

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2350	Piping, storm drain, 48" dia, 12 ga, CMP, bitum ctd, 90 deg	EA	977.72	60.14
2352	Piping, storm drain, 60" dia, 10 ga, CMP, bitum ctd, 90 deg	EA	1,491.29	67.78
2354	Piping, storm drain, 72" dia, 10 ga, CMP, bitum ctd, 90 deg	EA	2,261.16	104.15
02764 2359	Bituminous coated w/paved invert, wyes or tees			
2360	Piping, storm drain, CMP, bitum ctd, wye/tee, 8" dia	EA	88.50	6.20
2400	Piping, storm drain, 16 ga, 12" dia, CMP, bitum ctd, w/paved	EA	181.98	14.35
2401	15"(38cm) 16 Ga Galv 90 Deg Bend Bituminous Coated w/Paved Invert	EA	175.80	9.54
2402	15"(38cm) 16 Ga Galvanized Tee Bituminous Coated w/Paved Invert	EA	199.91	12.66
2403	42"(106cm) 12Ga Galv 90 Deg Bend Bituminous Coated w/Paved Invert	EA	641.22	28.63
2404	54"(137cm) 12Ga Galv 90 Deg Bend Bituminous Coated w/Paved Invert	EA	954.81	36.86
2405	66"(167cm) 10Ga Galv 90 Deg Bend Bituminous Coated w/Paved Invert	EA	1,307.70	51.56
2410	Piping, storm drain, 16 ga, 18" dia, CMP, bitum ctd, w/paved	EA	331.59	26.35
2412	Piping, storm drain, 14 ga, 24" dia, CMP, bitum ctd, w/paved	EA	433.87	31.91
2414	Piping, storm drain, 14 ga, 30" dia, CMP, bitum ctd, w/paved	EA	633.08	40.91
2416	Piping, storm drain, 14 ga, 36" dia, CMP, bitum ctd, w/paved	EA	794.84	70.38
2417	42"(106cm) 12 Ga Galvanized Tee Bituminous Coated w/Paved Invert	EA	719.33	46.40
2418	Piping, storm drain, 12 ga, 48" dia, CMP, bitum ctd, w/paved	EA	1,128.93	77.44
2419	54"(137cm) 12 Ga Galvanized Tee Bituminous Coated w/Paved Invert	EA	1,055.97	56.59
2420	Piping, storm drain, 10 ga, 60" dia, CMP, bitum ctd, w/paved	EA	1,791.25	103.03
2421	66"(167cm) 10 Ga Galvanized Tee Bituminous Coated w/Paved Invert	EA	1,483.21	78.59
2422	Piping, storm drain, 10 ga, 72" dia, CMP, bitum ctd, w/paved	EA	2,533.97	144.81
2423	78"(198cm) 10 Ga Galvanized Tee Bituminous Coated w/Paved Invert	EA	2,048.52	122.75
2424	78"(198cm) 10Ga Galv 90 Deg Bend Bituminous Coated w/Paved Invert	EA	1,792.03	90.34
02764 2500	Corrugated metal pipe, galvanized			
02764 2500	Pipe			
2520	Piping, storm drain, 16 ga, CMP, galv, 20' lengths, 8" dia	LF	10.83	1.44
2540	10"(25cm) 16 Ga Corr Metal Pipe Galv Or Alum Plain	LF	13.36	1.82
2560	Piping, storm drain, 16 ga, CMP, galv, 20' lengths, 12" dia	LF	15.86	2.61
2562	13"Dia 16Ga Galv Corr Metal Pipe (33cm) Diameter	LF	17.10	2.73
2570	15"(38cm) 16 Ga Corr Metal Pipe Galv Or Alum Plain	LF	18.34	2.74
2600	Piping, storm drain, 16 ga, CMP, galv, 20' lengths, 18" dia	LF	19.60	2.58
2620	Piping, storm drain, 14 ga, CMP, galv, 20' lengths, 24" dia	LF	29.63	3.67
2640	Piping, storm drain, 14 ga, CMP, galv, 20' lengths, 30" dia	LF	39.21	4.90
2660	Piping, storm drain, 12 ga, CMP, galv, 20' lengths, 36" dia	LF	61.89	7.72
2670	42"(106cm) 12Ga Corr Metal Pipe Galv Or Alum Plain	LF	71.73	8.71
2680	Piping, storm drain, 12 ga, CMP, galv, 20' lengths, 48" dia	LF	81.55	8.87
2690	54"(137cm) 12Ga Corr Metal Pipe Galv Or Alum Plain	LF	103.36	9.70
2700	Piping, storm drain, 10 ga, CMP, galv, 20' lengths, 60" dia	LF	125.14	10.82
2701	66"(167cm) 10Ga Corr Metal Pipe Galv Or Alum Plain	LF	137.63	11.89
2702	78"(198cm) 10Ga Corr Metal Pipe Galv Or Alum Plain	LF	162.67	12.80
2705	Piping, storm drain, 10 ga, CMP, galv, 20' lengths, 72" dia	LF	142.50	16.27
02764 2709	Bends or elbows			
2711	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 12" dia, 16	EA	144.42	12.63
2712	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 15" dia, 16	EA	175.94	12.82
2714	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 18" dia, 16	EA	214.65	16.15
2716	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 24" dia, 14	EA	293.40	19.47
2718	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 30" dia, 14	EA	395.32	25.22
2720	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 36" dia, 14	EA	485.60	38.10
2721	42"(106cm) 12Ga Galv 90 Deg Bend Plain	EA	644.43	45.82
2722	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 48" dia, 12	EA	798.85	53.87
2723	54"(137cm) 12Ga Galv 90 Deg Bend Plain	EA	1,046.37	59.23
2724	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 60" dia, 10	EA	1,293.90	64.60
2725	66"(167cm) 10Ga Galv 90 Deg Bend Plain	EA	1,546.62	77.81
2726	Piping, storm drain, CMP, plain, 90 deg bend/elbow, 72" dia, 10	EA	1,799.33	91.02
2727	78"(198cm) 10Ga Galv 90 Deg Bend Plain	EA	1,949.27	98.57
02764 2728	Wyes or tees			
2728	Piping, storm drain, CMP, plain, wye/tee, 12" dia, 16 ga	EA	209.28	18.12
2729	15"(38cm) 16 Ga Galvanized Tee Plain	EA	258.41	22.30
2730	Piping, storm drain, CMP, plain, wye/tee, 18" dia, 16 ga	EA	307.49	26.45
2732	Piping, storm drain, CMP, plain, wye/tee, 24" dia, 14 ga	EA	392.77	31.19
2734	Piping, storm drain, CMP, plain, wye/tee, 30" dia, 14 ga	EA	492.08	37.72
2736	Piping, storm drain, CMP, plain, wye/tee, 36" dia, 14 ga	EA	666.14	61.26
2737	42"(106cm) 12 Ga Galvanized Tee Plain	EA	825.29	69.39
2738	Piping, storm drain, CMP, plain, wye/tee, 48" dia, 12 ga	EA	984.42	77.56

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2739	54"(137cm) 12 Ga Galvanized Tee Plain	EA	1,273.99	87.84
2740	Piping, storm drain, CMP, plain, wye/tee, 60" dia, 10 ga	EA	1,563.57	98.08
2741	66"(167cm) 10 Ga Galvanized Tee Plain	EA	1,889.26	113.81
2742	Piping, storm drain, CMP, plain, wye/tee, 72" dia, 10 ga	EA	2,214.92	138.70
2743	78"(198cm) 10 Ga Galvanized Tee Plain	EA	2,399.50	150.26
02764 2779 End sections				
2780	Piping, storm drain, CMP, plain, end section, 8" dia	EA	117.45	7.51
2790	Piping, storm drain, CMP, plain, end section, 12" dia	EA	109.83	7.51
2792	15"(38cm) Corr Metal Pipe Ends	EA	118.40	7.54
2800	Piping, storm drain, CMP, plain, end section, 18" dia	EA	126.98	7.60
2802	21"(53cm) Corr Metal Pipe Ends	EA	148.86	7.92
2810	Piping, storm drain, CMP, plain, end section, 24" dia	EA	170.73	8.23
2820	Piping, storm drain, CMP, plain, end section, 30" dia	EA	276.39	9.23
2825	Piping, storm drain, CMP, plain, end section, 36" dia	EA	391.25	11.03
2827	42"(106cm) Corr Metal Pipe Ends	EA	621.26	17.68
2830	Piping, storm drain, CMP, plain, end section, 48" dia	EA	851.28	24.37
2832	54"(137cm) Corr Metal Pipe Ends	EA	1,183.76	28.43
2835	Piping, storm drain, CMP, plain, end section, 60" dia	EA	1,516.21	32.48
2837	66"(167cm) Corr Metal Pipe Ends	EA	1,675.49	37.63
2840	Piping, storm drain, CMP, plain, end section, 72" dia	EA	1,834.81	42.78
02764 2849 Couplings				
2850	Piping, storm drain, CMP, plain, coupling, 12" dia	EA	9.11	
2855	Piping, storm drain, CMP, plain, coupling, 18" dia	EA	15.14	
2860	Piping, storm drain, CMP, plain, coupling, 24" dia	EA	28.15	
2865	Piping, storm drain, CMP, plain, coupling, 30" dia	EA	41.09	
2870	Piping, storm drain, CMP, plain, coupling, 36" dia	EA	64.25	
2872	42" Dia Galv Corr Metal Coupling (106cm) Diameter	EA	119.96	
2875	Piping, storm drain, CMP, plain, coupling, 48" dia	EA	175.68	
2877	54" Dia Galv Corr Metal Coupling (137cm) Diameter	EA	249.07	
2880	Piping, storm drain, CMP, plain, coupling, 60" dia	EA	322.46	
2882	66" Dia Galv Corr Metal Coupling (167cm) Diameter	EA	736.71	
2885	Piping, storm drain, CMP, plain, coupling, 72" dia	EA	680.04	
2887	78" Dia Galv Corr Metal Coupling (198cm) Diameter	EA	46.29	
02764 2899 Nestable				
2899	8"(21cm) 16 Ga Corr Metal Pipe Nestable	LF	11.42	
2900	Piping, storm drain, CMP, nestable, 20' L, 10" dia, 16 ga	LF	15.16	1.70
2902	12"(31cm) 16 Ga Corr Metal Pipe Nestable	LF	16.73	1.82
2910	Piping, storm drain, CMP, nestable, 20' L, 15" dia, 16 ga	LF	18.28	2.39
2920	Piping, storm drain, CMP, nestable, 20' L, 18" dia, 16 ga	LF	19.51	2.48
2925	Piping, storm drain, CMP, nestable, 20' L, 24" dia, 16 ga	LF	27.86	2.86
2930	Piping, storm drain, CMP, nestable, 20' L, 30" dia, 16 ga	LF	30.22	2.92
2935	Piping, storm drain, CMP, nestable, 20' L, 36" dia, 14 ga	LF	50.18	4.37
2937	41"(106cm) 14 Ga Corr Metal Pipe Nestable	LF	67.41	5.86
2940	Piping, storm drain, CMP, nestable, 20' L, 48" dia, 14 ga	LF	84.62	7.31
02764 3000 Corrugated galv or al arch culverts, ctd & paved				
3038	18"x 11" 16Ga Corr Mtl Arch Culv Oval, Stl or Alum Coated & Pave	LF	28.59	3.27
3040	Piping, 16 ga, 21"x15", 18"equiv, ctd&paved, corr galv/al oval	LF	38.11	4.37
3078	29"x 18" 14Ga Corr Mtl Arch Culv Oval, Stl or Alum Coated & Pave	LF	52.69	5.53
3080	Piping, 14 ga, 35"x24", 30"equiv, ctd&paved, corr galv/al oval	LF	67.28	6.69
3138	43"x 27" 12Ga Corr Mtl Arch Culv Oval, Stl or Alum Coated & Pave	LF	83.71	8.10
3139	50"x 31" 12Ga Corr Mtl Arch Culv Oval, Stl or Alum Coated & Pave	LF	100.09	9.52
3140	Piping, 12 ga, 57"x38", 48"equiv, ctd&paved, corr galv/al oval	LF	123.11	14.40
02764 3150 Corrugated galv or al arch culverts				
3198	18"x 11" 16Ga Corr Mtl Arch Culv Oval, Steel or Aluminum Plain	LF	24.14	2.67
3200	Piping, corr stl, 18" equiv, 21" x 15", 16 ga, plain oval arch	LF	24.49	3.30
3238	29"x 18" 14Ga Corr Mtl Arch Culv Oval, Steel or Aluminum Plain	LF	47.31	3.80
3240	Piping, corr stl, 30" equiv, 35" x 24", 14 ga, plain oval arch	LF	52.06	5.70
3296	43"x 27" 12Ga Corr Mtl Arch Culv Oval, Steel or Aluminum Plain	LF	80.94	6.40
3298	50"x 31" 12Ga Corr Mtl Arch Culv Oval, Steel or Aluminum Plain	LF	93.34	7.06
3300	Piping, corr stl, 48" equiv, 57" x 38", 12 ga, plain oval arch	LF	81.98	7.76
02764 3310 Corrugated Metal Culverts				
3312	18"x11" 16 Ga Corr Metal Culvert	LF	14.63	1.25
3314	22"x13" 16 Ga Corr Metal Culvert	LF	17.97	1.74
3316	29"x18" 14 Ga Corr Metal Culvert	LF	24.75	1.94

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3318	36"x22" 14 Ga Corr Metal Culvert	LF	32.25	2.70
3320	43"x27" 12 Ga Corr Metal Culvert	LF	43.08	2.60
02766 0010	Piping, drainage & sewage, plastic, w/o exc/bkfl			
02766 5799	Smooth wall			
6010	Piping, D&S, 20' sect, 4", corr polthn, type S, smooth wall	LF	5.94	1.79
6020	Piping, D&S, 20' sect, 6", corr polthn, type S, smooth wall	LF	7.02	1.82
6030	Piping, D&S, 20' sect, 8", corr polthn, type S, smooth wall	LF	8.42	1.95
6040	Piping, D&S, 20' sect, 10", corr polthn, type S, smooth wall	LF	10.21	1.95
6050	Piping, D&S, 20' sect, 12", corr polthn, type S, smooth wall	LF	11.91	2.32
6052	15"(38cm) Corr Polyethylene Pipe	LF	14.88	2.48
6060	Piping, D&S, 20' sect, 18", corr polthn, type S, smooth wall	LF	17.84	2.67
6070	Piping, D&S, 20' sect, 24", corr polthn, type S, smooth wall	LF	23.13	2.20
02766 6079	Couplers			
6080	Piping, D&S, corr polthn, coupler, 4"	EA	1.16	
6090	Piping, D&S, corr polthn, coupler, 6"	EA	2.04	
6110	Piping, D&S, corr polthn, coupler, 8"	EA	3.19	
6115	Piping, D&S, corr polthn, coupler, 10"	EA	4.53	
6120	Piping, D&S, corr polthn, coupler, 12"	EA	5.56	
6122	15"(38cm) Corr Polyeth Coupler	EA	7.28	
6130	Piping, D&S, corr polthn, coupler, 18"	EA	10.46	
6140	Piping, D&S, corr polthn, coupler, 24"	EA	14.88	
02766 9799	ABS, truss type			
	Note: 20' Sections, Bell End			
9800	Piping, drainage & sewage, plastic, ABS, truss type, 4"	LF	4.66	1.52
9810	Piping, drainage & sewage, plastic, ABS, truss type, 6"	LF	5.65	1.53
9820	Piping, drainage & sewage, plastic, ABS, truss type, 8"	LF	9.85	1.64
9830	Piping, drainage & sewage, plastic, ABS, truss type, 10"	LF	12.63	1.65
9840	Piping, drainage & sewage, plastic, ABS, truss type, 12"	LF	16.42	1.81
9850	Piping, drainage & sewage, plastic, ABS, truss type, 15"	LF	24.90	2.89
02767 1100	Drainage Pipe Fittings			
02767 1120	90 Degree Elbows			
1121	4" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	53.24	14.86
1122	6" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	79.24	14.86
1123	8" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	101.00	14.86
1124	10" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	117.61	18.98
1125	12" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	126.62	18.98
1126	15" 90 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	161.64	18.98
02767 1140	45 Degree Elbows			
1141	4" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	61.08	13.12
1142	6" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	70.73	13.12
1143	8" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	94.18	13.12
1144	10" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	120.61	20.65
1145	12" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	145.17	20.65
1146	15" 45 Degree Elbow ABS Plastic Drain Pipe Truss Type	EA	162.91	20.65
02767 1160	Tees			
1161	4" Tee ABS Plastic Drain Pipe Truss Type	EA	44.25	9.47
1162	6" Tee ABS Plastic Drain Pipe Truss Type	EA	65.75	9.47
1163	8" Tee ABS Plastic Drain Pipe Truss Type	EA	92.20	9.47
1164	10" Tee ABS Plastic Drain Pipe Truss Type	EA	140.39	19.15
1165	12" Tee ABS Plastic Drain Pipe Truss Type	EA	171.56	19.15
1166	15" Tee ABS Plastic Drain Pipe Truss Type	EA	206.16	19.15
02767 1180	Couplings			
1181	4" Coupling ABS Plastic Drain Pipe Truss Type	EA	2.49	1.00
1182	6" Coupling ABS Plastic Drain Pipe Truss Type	EA	5.77	1.01
1183	8" Coupling ABS Plastic Drain Pipe Truss Type	EA	10.24	1.00
1184	10" Coupling ABS Plastic Drain Pipe Truss Type	EA	11.73	2.38
1185	12" Coupling ABS Plastic Drain Pipe Truss Type	EA	14.33	2.38
1186	15" Coupling ABS Plastic Drain Pipe Truss Type	EA	16.86	2.38
02767 3000	Mscellaneous Fittings			
02767 3100	Couplings			
	Note: Mechanical Joint. For Cast Iron, Concrete Or Plastic To Cast Iron, Concrete Or Plastic.			
3101	4"x4" Coupling	EA	61.25	14.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3102	6"x6" Coupling	EA	62.04	14.06
3103	8"x8" Coupling	EA	62.82	14.06
3104	10"x10" Coupling	EA	63.43	14.06
3105	12"x12" Coupling	EA	64.94	14.06
3106	15"x15" or 16"x16" Coupling	EA	65.89	14.06
02768 0010 Piping, drainage & sewage, PVC, w/o exc/bkfl				
02768 1993 Drain or sewer pipe, PVC, 10' lengths				
1994	Piping, drainage & sewage, SDR 35, 3" dia, PVC, no exc/bkfill, 10'	LF	4.06	2.77
1995	Piping, drainage & sewage, SDR 35, 4" dia, PVC, no exc/bkfill, 10'	LF	4.67	3.16
2045	Piping, drainage & sewage, SDR 35, 6" dia, PVC, no exc/bkfill, 10'	LF	8.78	6.96
02768 2070 PVC SDR 35 Solvent Weld Pipe				
2072	4" PVC SDR-35 Solvent Weld Pipe	LF	3.55	0.64
2074	6" PVC SDR-35 Solvent Weld Pipe	LF	4.68	1.43
2076	8" PVC SDR-35 Solvent Weld Pipe	LF	6.28	1.50
02768 3081 Fittings				
02768 3081 Elbow				
3082	Piping, 3" dia, PVC, no exc/bkfill, elbow, 90 deg.	EA	13.35	5.71
3084	Piping, 4" dia, PVC, no exc/bkfill, elbow, 90 deg.	EA	16.94	5.75
3086	Piping, 6" dia, PVC, no exc/bkfill, elbow, 90 deg.	EA	26.50	7.49
3088	Piping, 3" dia, PVC, no exc/bkfill, elbow, 45 deg.	EA	13.03	5.71
3090	Piping, 4" dia, PVC, no exc/bkfill, elbow, 45 deg.	EA	16.41	5.75
3092	Piping, 6" dia, PVC, no exc/bkfill, elbow, 45 deg.	EA	25.70	7.49
3094	Piping, 4" dia, PVC, no exc/bkfill, elbow, 22.5 deg.	EA	17.12	5.75
3096	Piping, 6" dia, PVC, no exc/bkfill, elbow, 22.5 deg.	EA	25.77	7.49
02768 3117 Tees				
3118	Piping, drainage & sewage, PVC, no exc/bkfill, tee, 3" dia	EA	19.63	9.15
3119	Piping, drainage & sewage, PVC, no exc/bkfill, tee, 4" dia	EA	22.09	10.04
3155	Piping, drainage & sewage, PVC, no exc/bkfill, tee, 6" dia	EA	34.25	13.31
02768 3179 Tees, sanitary				
3180	Piping, 3" dia, PVC, no exc/bkfill, tee, sanitary,	EA	21.82	10.18
3185	Piping, 4" dia, PVC, no exc/bkfill, tee, sanitary,	EA	28.16	12.10
02768 3189 Wyes				
3190	Piping, drainage & sewage, PVC, no exc/bkfill, wye, 3" dia	EA	20.34	9.01
3210	Piping, drainage & sewage, PVC, no exc/bkfill, wye, 4" dia	EA	25.24	11.07
3220	Piping, drainage & sewage, PVC, no exc/bkfill, wye, 6" dia	EA	42.05	13.98
3250	Piping, drainage & sewage, 6" x 6" x 4", PVC, no exc/bkfill, wye	EA	39.84	11.82
02768 3299 Coupling				
3300	Piping, drainage & sewage, 3", PVC, no exc/bkfill, coupling	EA	12.80	5.82
3310	Piping, drainage & sewage, 4", PVC, no exc/bkfill, coupling	EA	16.18	6.67
3320	Piping, drainage & sewage, 6", PVC, no exc/bkfill, coupling	EA	23.43	6.92
02768 3399 Reducer				
3400	Piping, drainage & sewage, 4" x 3", PVC, no exc/bkfill, reducer	EA	17.06	5.89
3410	Piping, drainage & sewage, 6" x 4", PVC, no exc/bkfill, reducer	EA	24.74	6.78
3420	Piping, drainage & sewage, 8" x 6", PVC, no exc/bkfill, reducer	EA	41.12	9.51
3430	Piping, drainage & sewage, 10" x 4", PVC, no exc/bkfill, reducer	EA	64.53	12.10
3440	Piping, drainage & sewage, 10" x 6", PVC, no exc/bkfill, reducer	EA	84.59	12.10
3450	Piping, drainage & sewage, 10" x 8", PVC, no exc/bkfill, reducer	EA	78.76	12.10
02768 3499 PP x MP				
3500	Piping, polyprop x MP, 4" male, PVC, no exc/bkfill, drainage &	EA	19.76	8.00
02768 3599 Hub, CI x PP				
3600	Piping, 4", PVC, no exc/bkfill, hub, CI x polyprop, drainage &	EA	34.58	15.15
02768 3609 Spigot, clay x PP				
3610	Piping, drainage & sewage, clay x polyprop, 4", PVC, no exc/bkfill,	EA	35.70	15.12
3640	Piping, drainage & sewage, fiber x polyprop, 4", PVC, no exc/bkfill,	EA	53.05	25.73
02768 3649 Cap				
3650	Piping, drainage & sewage, PVC, no exc/bkfill, cap, 3"	EA	6.74	1.31
3660	Piping, drainage & sewage, PVC, no exc/bkfill, cap, 4"	EA	8.37	1.35
3670	Piping, drainage & sewage, PVC, no exc/bkfill, cap, 6"	EA	13.40	1.53
02768 3679 Plug				
3680	Piping, drainage & sewage, PVC, no exc/bkfill, plug, 4"	EA	8.60	1.56
02768 3689 Reducing bushing				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3690	Piping, drainage & sewage, 6" x 4", PVC, no exc/bkfill, rdcg	EA	21.25	4.54
02768 3699	Drain grate			
3700	Piping, drainage & sewage, drain grate, 4", PVC, no exc/bkfill	EA	16.59	6.92
02768 3709	Cleanout, FIP x PP			
3710	Piping, drainage & sewage, FIP x polyprop, 3", PVC, no exc/bkfill,	EA	25.31	10.43
3711	1-1/2" FIP x Pp Cleanout, Drain & Sewer W Plug	EA	24.63	12.58
3712	2" FIP x Pp Cleanout, Drain & Sewer W Plug	EA	25.02	12.58
3720	Piping, drainage & sewage, FIP x polyprop, 4", PVC, no exc/bkfill,	EA	30.72	10.97
3730	Piping, drainage & sewage, FIP x polyprop, 6", PVC, no exc/bkfill,	EA	56.63	17.03
02769 2040	PVC SDR 35 Gasketed Pipe			
2042	4" PVC SDR 35 Gasketed Pipe	LF	3.31	1.18
2044	6" PVC SDR 35 Gasketed Pipe	LF	4.25	1.30
2046	8" PVC SDR 35 Gasketed Pipe	LF	5.34	1.37
2048	10" PVC SDR 35 Gasketed Pipe	LF	7.38	1.70
2050	12" PVC SDR 35 Gasketed Pipe	LF	9.06	1.70
2052	15" PVC SDR 35 Gasketed Pipe	LF	14.23	2.90
2054	18" PVC ASTM F679 Gasketed Pipe	LF	25.22	3.67
2056	21" PVC ASTM F679 Gasketed Pipe	LF	33.07	4.30
2058	24" PVC ASTM F679 Gasketed Pipe	LF	40.40	4.91
2060	27" PVC ASTM F679 Gasketed Pipe	LF	49.49	5.50
02769 7300	PVC Gasketed Sewer Fittings			
02769 7310	1/4 Bend			
7311	6" 1/4 Bend, Short, PVC Gasketed Sewer Fitting	EA	18.78	25.78
7312	8" 1/4 Bend, Short, PVC Gasketed Sewer Fitting	EA	30.85	25.78
7313	10" 1/4 Bend, Short, PVC Gasketed Sewer Fitting	EA	71.61	29.33
7314	12" 1/4 Bend, Short, PVC Gasketed Sewer Fitting	EA	90.50	32.23
02769 7320	1/8 Bend			
7321	4" 1/8 Bend, PVC Gasketed Sewer Fitting	EA	12.88	22.92
7322	6" 1/8 Bend, PVC Gasketed Sewer Fitting	EA	17.08	25.78
7323	8" 1/8 Bend, PVC Gasketed Sewer Fitting	EA	28.78	25.78
7324	10" 1/8 Bend, PVC Gasketed Sewer Fitting	EA	53.67	32.23
7325	12" 1/8 Bend, PVC Gasketed Sewer Fitting	EA	72.75	32.23
02769 7330	Sanitary Tee			
7331	4" Sanitary Tee, PVC Gasketed Sewer Fitting	EA	17.60	28.65
7332	6x4 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	24.83	32.24
7333	8x4 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	32.28	37.23
7334	8x6 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	34.09	40.08
7335	10x4 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	67.01	46.51
7336	10x6 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	68.92	49.32
7337	10x8 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	98.62	53.72
7338	12x4 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	85.13	63.63
7339	12x6 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	92.15	69.99
7341	12x8 Sanitary Tee, Reducing, PVC Gasketed Sewer Fitting	EA	117.32	78.78
02769 7350	WE			
7351	4" WE, PVC Gasketed Sewer Fitting	EA	17.40	28.65
7352	6x4 WE, PVC Gasketed Sewer Fitting, Reducing	EA	24.90	32.24
7353	6" WE, PVC Gasketed Sewer Fitting	EA	27.29	34.36
7354	8x4 WE, PVC Gasketed Sewer Fitting, Reducing	EA	31.33	37.23
7355	8x6 WE, PVC Gasketed Sewer Fitting, Reducing	EA	36.49	40.08
7356	8x8 WE, PVC Gasketed Sewer Fitting, Reducing	EA	51.78	42.95
7357	10x4 WE, PVC Gasketed Sewer Fitting, Reducing	EA	64.70	46.54
7358	10x6 WE, PVC Gasketed Sewer Fitting, Reducing	EA	66.59	49.41
7359	10x8 WE, PVC Gasketed Sewer Fitting, Reducing	EA	94.03	53.72
7361	10" WE, PVC Gasketed Sewer Fitting	EA	113.42	58.00
7362	12x4 WE, PVC Gasketed Sewer Fitting, Reducing	EA	90.70	63.63
7363	12x6 WE, PVC Gasketed Sewer Fitting, Reducing	EA	95.68	70.18
7364	12x8 WE, PVC Gasketed Sewer Fitting, Reducing	EA	131.29	78.78
7365	12x10 WE, PVC Gasketed Sewer Fitting, Reducing	EA	154.48	83.68
7366	12" WE, PVC Gasketed Sewer Fitting	EA	161.94	88.77
02769 7370	Coupling			
7371	4" Coupling, PVC Gasketed Sewer Fitting	EA	13.91	22.60
7372	6" Coupling, PVC Gasketed Sewer Fitting	EA	18.98	25.75
7373	8" Coupling, PVC Gasketed Sewer Fitting	EA	24.15	25.75

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7374	10" Coupling, PVC Gasketed Sewer Fitting	EA	38.36	29.33
7375	12" Coupling, PVC Gasketed Sewer Fitting	EA	51.26	32.20
02769 7380 Increaser				
7381	6x4 Increaser, PVC Gasketed Sewer Fitting	EA	19.43	32.24
7382	8x4 Increaser, PVC Gasketed Sewer Fitting	EA	30.42	37.23
7383	8x6 Increaser, PVC Gasketed Sewer Fitting	EA	33.35	40.08
7384	10x6 Increaser, PVC Gasketed Sewer Fitting	EA	56.15	49.41
7385	10x8 Increaser, PVC Gasketed Sewer Fitting	EA	66.46	53.72
7386	12x6 Increaser, PVC Gasketed Sewer Fitting	EA	76.37	70.15
7387	12x8 Increaser, PVC Gasketed Sewer Fitting	EA	87.32	78.75
7388	12x10 Increaser, PVC Gasketed Sewer Fitting	EA	95.59	83.74
02769 7390 Clean Out Assemblies				
7391	4" PVC SDR 35 Clean Out Assembly, w/Plug	EA	37.41	35.83
7392	6" PVC SDR 35 Clean Out Assembly w/Plug	EA	46.99	35.82
7393	8" PVC SDR 35 Clean Out Assembly w/Plug	EA	117.48	37.57
02769 7400 Corrugated, Perforated Polyethylene Drain Pipe				
7401	3" Corr. Perf. Poly Pipe	LF	2.52	1.34
7402	4" Corr. Perf. Poly Pipe	LF	2.57	1.34
7403	5" Corr. Perf. Poly Pipe	LF	3.31	1.53
7404	6" Corr. Perf. Poly Pipe	LF	3.40	1.53
7405	8" Corr. Perf. Poly Pipe	LF	4.68	1.72
7411	3" Elbow	EA	12.17	4.77
7412	4" Elbow	EA	12.56	4.77
7413	5" Elbow	EA	13.51	4.77
7414	6" Elbow	EA	15.26	4.77
7415	8" Elbow	EA	17.03	4.77
7421	3" Tee	EA	13.71	5.73
7422	4" Tee	EA	14.16	5.73
7423	5" Tee	EA	15.04	5.73
7424	6" Tee	EA	16.77	5.73
7425	8" Tee	EA	18.52	5.73
7431	3" End Cap	EA	9.39	4.77
7432	4" End Cap	EA	9.57	4.77
7433	6" End Cap	EA	10.27	4.77
7434	8" End Cap	EA	12.83	4.77
7441	3" Coupling	EA	9.30	4.77
7442	4" Coupling	EA	9.35	4.77
7443	5" Coupling	EA	9.74	4.77
7444	6" Coupling	EA	21.63	4.77
7445	8" Coupling	EA	12.34	4.77
7451	3" Wye	EA	13.61	5.73
7452	4" Wye	EA	14.29	5.73
7453	5" Wye	EA	15.25	5.73
7454	6" Wye	EA	16.76	5.73
7455	8" Wye	EA	18.25	5.73
02769 8000 Waste Water Collection System Taps				
Note: Includes Grout & 4x4 Sheet of Plywood.				
02769 8100 Brick Manhole Taps - Includes Grout & 4x4 Sheet of Plywood.				
8101	4" Tap In 6" Brick Manhole	EA	169.20	67.59
8102	6" Tap In 6" Brick Manhole	EA	188.15	76.11
8103	8" Tap In 6" Brick Manhole	EA	206.76	84.49
8104	10" Tap In 6" Brick Manhole	EA	225.33	92.86
8105	12" Tap In 6" Brick Manhole	EA	250.15	101.38
8106	15" Tap In 6" Brick Manhole	EA	268.68	109.72
02769 8200 Precast Concrete Manhole Tap - Includes Grout & 4x4 Sheet Plywood.				
8201	4" Tap In 8" Precast Concrete Manhole	EA	241.58	101.38
8202	6" Tap In 8" Precast Concrete Manhole	EA	270.00	114.19
8203	8" Tap In 8" Precast Concrete Manhole	EA	302.92	126.73
8204	10" Tap In 8" Precast Concrete Manhole	EA	330.77	139.27
8205	12" Tap In 8" Precast Concrete Manhole	EA	358.57	151.78
8206	15" Tap In 8" Precast Concrete Manhole	EA	387.04	164.58
02769 8300 Collection Pipe Taps				
02769 8310 Cast Iron Pipe Saddle Taps				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8311	2" Tee Saddle Tap w/U-Bolt, Cast Iron	EA	51.86	26.29
8312	3" Tee Saddle Tap w/U-Bolt, Cast Iron	EA	60.98	32.39
8313	4" Tee Saddle Tap w/U-Bolt, Cast Iron	EA	75.31	39.58
8314	6" Tee Saddle Tap w/U-Bolt, Cast Iron	EA	93.62	43.85
8315	3x2 Tee Saddle Tap w/U-Bolt, Cast Iron	EA	58.38	30.70
8316	4x2 Tee Saddle Tap w/U-Bolt, Cast Iron	EA	66.25	35.03
8317	4x3 Tee Saddle Tap w/U-Bolt, Cast Iron	EA	71.45	37.61
8318	6x2 Tee Saddle Tap w/U-Bolt, Cast Iron	EA	80.93	39.58
8321	2" WE Saddle Tap w/U-Bolt, Cast Iron	EA	61.63	26.29
8322	3" WE Saddle Tap w/U-Bolt, Cast Iron	EA	72.65	32.39
8323	4" WE Saddle Tap w/U-Bolt, Cast Iron	EA	86.98	39.58
8324	6" WE Saddle Tap w/U-Bolt, Cast Iron	EA	111.41	43.85
8325	3x2 WE Saddle Tap w/U-Bolt, Cast Iron	EA	65.22	30.70
8326	4x2 WE Saddle Tap w/U-Bolt, Cast Iron	EA	77.19	35.03
8327	4x3 WE Saddle Tap w/U-Bolt, Cast Iron	EA	83.19	37.61
8328	5x4 WE Saddle Tap w/U-Bolt, Cast Iron	EA	99.33	41.27
8331	3x1 1/2 Tee Saddle Tap, Tapped w/ U-Bolt, Cast Iron	EA	61.74	29.51
8332	3x2 Tee Saddle Tap, Tapped w/U-Bolt, Cast Iron	EA	63.57	30.70
8333	4x1 1/2 Tee Saddle Tap, Tapped w/ U-Bolt, Cast Iron	EA	70.03	34.90
8334	4x2 Tee Saddle Tap, Tapped w/U-Bolt, Cast Iron	EA	70.28	35.03
8335	4x1 1/2 WE Saddle Tap, Tapped w/U-Bolt, Cast Iron	EA	69.30	34.90
8336	4x2 WE Saddle Tap, Tapped w/U-Bolt, Cast Iron	EA	69.55	35.03
02769 8340 PVC Pipe Saddle Taps				
8341	6x4" PVC Saddle Tap	EA	48.30	26.06
8342	8x4" PVC Saddle Tap	EA	50.92	26.37
8343	8x6" PVC Saddle Tap	EA	55.13	28.32
8344	10x4" PVC Saddle Tap	EA	59.49	26.51
8345	10x6" PVC Saddle Tap	EA	67.11	29.27
02770 Existing Manholes				
02770 1000 Raise Manhole 2 to 12"				
02770 1100 Manhole Rings 20 to 26"				
1101	2" Adjusting Ring, 20 to 26" in Diameter	EA	197.00	
1102	3" Adjusting Ring, 20 to 26" in Diameter	EA	224.99	
02770 1200 Manhole Rings 30 to 36" in Diameter				
1201	2" in Adjusting Ring, 30 to 36" in Diameter	EA	288.15	
1202	3" in Adjusting Ring, 30 to 36" in Diameter	EA	324.50	
02770 2000 Raise Manhole 1 ft. or Greater				
02770 2100 Manhole Precast Concrete and Brick				
2101	Riser Addition to 4 ft. Diameter Precast Manhole	VL	62.37	
2102	Riser Addition to 5 ft. Diameter Precast Manhole	VL	127.29	
2103	Riser Addition to 6 ft. Diameter Precast Manhole	VL	186.44	
02772 0010 Piping, drainage & sewage, vitrified clay				
02772 4030 Extra strength, compression joints, C425				
5000	Piping, D&S, 4" dia x 4' L, vit clay, no exc/bkfill, ex str,	LF	4.46	1.69
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		1.34	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		2.33	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-0.43	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-0.34	
5020	Piping, D&S, 6" dia x 5' L, vit clay, no exc/bkfill, ex str,	LF	6.41	2.48
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		1.92	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		3.29	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-0.70	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-0.56	
5040	Piping, D&S, 8" dia x 5' L, vit clay, no exc/bkfill, ex str,	LF	9.02	3.16
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		2.71	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		4.61	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-1.00	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-0.80	
5060	Piping, D&S, 10" dia x 5' L, vit clay, no exc/bkfill, ex str,	LF	11.81	3.19
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		3.54	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		5.78	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-1.63	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-1.30	
5080	Piping, D&S, 12" dia x 6' L, vit clay, no exc/bkfill, ex str,	LF	15.21	4.12

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		4.56	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		7.42	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-2.13	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-1.70	
5100	Piping, D&S, 15" dia x 7' L, vit clay, no exc/bkfill, ex str,	LF	25.36	5.74
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		7.61	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		11.97	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-4.06	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-3.25	
5120	Piping, D&S, 18" dia x 7' L, vit clay, no exc/bkfill, ex str,	LF	34.44	8.04
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		10.33	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		16.06	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-5.76	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-4.60	
5140	Piping, D&S, 24" dia x 7' L, vit clay, no exc/bkfill, ex str,	LF	73.77	22.74
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		22.13	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		33.97	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-12.86	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-10.29	
5160	Piping, D&S, 30" dia x 7' L, vit clay, no exc/bkfill, ex str,	LF	126.42	33.77
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		37.93	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		58.13	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-22.16	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-17.72	
5180	Piping, D&S, 36" dia x 7' L, vit clay, no exc/bkfill, ex str,	LF	189.39	52.17
6000	Piping, drainage & sewage, vitrified clay, for 3' lengths, add		56.82	
6020	Piping, drainage & sewage, vitrified clay, for 2' lengths, add		87.47	
6060	Pipe, drainage & sewage, vitrified clay, for plain joints, deduct		-32.71	
6080	Pipe, drainage & sewage, vitrified clay, for std strength, deduct		-26.16	
02776 0010	Sewage treatment and water treatment			
02776 2499	Sewage lift station			
2500	Sewage trtmt, no fencing/ext piping, 200,000 GPD, sewage lift	EA	121,845.78	
2510	Sewage trtmt, no fencing/ext piping, 500,000 GPD, sewage lift	EA	140,783.51	
2520	Sewage trtmt, no fencing/ext piping, 800,000 GPD, sewage lift	EA	168,506.34	
02776 2999	Surface aerator, mechanical			
Note: Electric Mtor, Ductile Iron Deflector, Carbon Steel Core, Ss Impeller And Shaft, Fiberglass Float, Mrse Mbreflex Radial Coupling And Cutless Rubber Bearing				
3000	Sewage trtmt, no fencing/ext piping, 5 HP, 1800 RPM surf	EA	7,883.45	542.82
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		2,253.53	
3002	7.5HP, 1800RPM Mech Surf Aerator w/DI Deflector & Carbon Stl Core	EA	6,482.85	442.54
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		1,895.08	
3100	Sewage trtmt, no fencing/ext piping, 10 HP, 1800 RPM surf	EA	9,924.32	717.06
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		2,799.28	
3102	15HP, 1200RPM Mech Surf Aerator w/DI Deflector & Carbon Stl Core	EA	8,869.39	589.57
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		2,605.74	
3200	Sewage trtmt, no fencing/ext piping, 20 HP, 1200 RPM surf	EA	14,004.63	764.58
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		4,227.39	
3202	25HP, 1200RPM Mech Surf Aerator w/DI Deflector & Carbon Stl Core	EA	12,051.47	785.19
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		3,553.28	
3300	Sewage trtmt, no fencing/ext piping, 30 HP, 1200 RPM surf	EA	18,999.30	1,114.87
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		5,750.78	
3400	Sewage trtmt, no fencing/ext piping, 40 HP, 1200 RPM surf	EA	21,257.98	1,005.52
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		6,428.95	
3500	Sewage trtmt, no fencing/ext piping, 50 HP, 900 RPM surf	EA	27,508.35	1,410.55
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		8,472.10	
3600	Sewage trtmt, no fencing/ext piping, 60 HP, 900 RPM surf	EA	30,361.73	1,326.47
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		9,470.79	
3700	Sewage trtmt, no fencing/ext piping, 75 HP, 900 RPM surf	EA	33,832.68	1,625.08
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		10,492.98	
3800	Sewage trtmt, no fencing/ext piping, 100 HP, 900 RPM surf	EA	49,441.17	2,436.80
3900	Sewage trtmt, surf aerator, mech, for sst deflector & core, add		15,686.26	
02776 3999	Surface aerator, mechanical low speed			
Note: Electric Mtor Gear Reduction Box, Coupling, Impeller/Shaft, And Adjusting Studs				
4000	Sewage trtmt, no fencing/ext piping, low sp, 15 HP, surf	EA	33,748.47	933.66
5100	Sewage trtmt, surf aerator, for float unit, platorm & ballast, add		27,434.06	
4100	Sewage trtmt, no fencing/ext piping, low sp, 20 HP, surf	EA	50,720.26	1,244.16
5100	Sewage trtmt, surf aerator, for float unit, platorm & ballast, add		41,860.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4200	Sewage trtmt, no fencing/ext piping, low sp, 25 HP, surf	EA	55,878.84	1,389.58
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		45,994.45	
4300	Sewage trtmt, no fencing/ext piping, low sp, 30 HP, surf	EA	59,061.05	1,307.40
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		48,699.33	
4400	Sewage trtmt, no fencing/ext piping, low sp, 40 HP, surf	EA	66,743.06	1,474.37
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		55,062.08	
4500	Sewage trtmt, no fencing/ext piping, low sp, 50 HP, surf	EA	73,637.85	1,508.51
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		60,922.65	
4600	Sewage trtmt, no fencing/ext piping, low sp, 60 HP, surf	EA	80,853.69	1,646.01
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		66,847.43	
4700	Sewage trtmt, no fencing/ext piping, low sp, 75 HP, surf	EA	88,809.22	1,601.55
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		73,609.63	
4800	Sewage trtmt, no fencing/ext piping, low sp, 100 HP, surf	EA	101,420.48	1,777.94
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		84,060.89	
4900	Sewage trtmt, no fencing/ext piping, low sp, 125 HP, surf	EA	113,638.97	2,041.47
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		94,088.85	
5000	Sewage trtmt, no fencing/ext piping, low sp, 150 HP, surf	EA	127,958.92	1,814.26
5100	Sewage trtmt, surf aerator, for float unit, platom & ballast, add		106,260.81	
02776 6999 Grinder Systems JOC				
NOTE: Includes check valve, tank, standard controls with alarm disconnect panel with wire. Does not include excavation				
7010	Simplex 9 Gpm at 60 Psig, 60 Gal Tank	EA	3,512.52	
1025	For Each VLF of Manway, Add		152.00	
1035	For Salt Water Core, Add		151.00	
7020	Simplex 9 Gpm at 60 Psig, 120 Gal Tank	EA	4,470.59	
1025	For Each VLF of Manway, Add		152.00	
1035	For Salt Water Core, Add		151.00	
7030	Duplex 18 Gpm at 60 Psig, 120 Gal Tank	EA	5,935.34	
1025	For Each VLF of Manway, Add		152.00	
1035	For Salt Water Core, Add		151.00	
02777 Wastewater Treatment				
02778 0009 Waste water treatment system				
0010	Wastewater treatment system fiberglass, 1,000 gal	EA	3,536.38	
1000	Wastewater treatment system treatment at POTW	KGA	1.50	
02779 Septic Systems				
02780 0009 Septic tanks				
Note: Does Not Include Excavation Or Piping - Precast, Includes External Coating				
02780 0009 Precast				
0010	Septic tanks, no exc or piping, precast, 1,000 gal	EA	571.08	30.10
0100	Septic tanks, no exc or piping, precast, 2,000 gal	EA	1,091.93	69.74
0200	Septic tanks, no exc or piping, precast, 5,000 gal	EA	4,506.00	221.46
0320	Septic tanks, no exc or piping, precast, 16,250 gal	EA	13,570.04	317.77
0400	Septic tanks, no exc or piping, precast, 25,000 gal	EA	19,568.29	462.16
0500	Septic tanks, no exc or piping, precast, 40,000 gal	EA	31,465.80	660.67
02780 0979 Distribution box, concrete				
0980	Septic tanks, no exc/piping, 5 outlets, distribution box, conc	EA	95.30	10.90
1110	Septic tanks, no exc/piping, 12 outlets, distribution box, conc	EA	218.20	41.57
02780 1149 Leaching field chambers				
1150	Septic tanks, no exc/piping, 13' x 3' -7" x 1' -4", leaching fld	EA	829.72	44.42
1300	Septic tanks, no exc/piping, 13' x 3' -9" x 1' -6", leaching fld	EA	871.51	52.80
02780 1399 Leaching pit, precast concrete				
1400	Septic tanks, no exc/piping, 3' dia, 3'D, leaching pit, precast	EA	271.42	23.07
1500	Septic tanks, no exc/piping, 6' dia, 3'D, leaching pit, precast	EA	581.81	45.28
02800 Site Improvements				
02810 Irrigation Systems				
02810 0010 Sprinkler irrigation system				
02810 1079 Pop up bubbler head w/risers				
1080	Sprinkler irr sys, 4" hi-pop head, pop up bubbler head	EA	10.87	2.06
1090	Sprinkler irr sys, 6" hi-pop head, pop up bubbler head	EA	15.31	2.20
1100	Sprinkler irr sys, 12" hi-pop head, pop up bubbler head	EA	16.89	2.23
02810 1109 Impact full/part circle sprinklers				
1110	Sprinkler irr sys, spaced 28' -54' @ 25-60 PSI, impact full/part	EA	21.63	4.77

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1120	Sprinkler irr sys, spaced 37'-49' @ 25-50 PSI, impact full/part	EA	36.92	5.53
1130	Sprinkler irr sys, spaced 43'-61' @ 30-60 PSI, impact full/part	EA	54.39	5.57
1140	Sprinkler irr sys, spaced 54'-78' @ 40-80 PSI, impact full/part	EA	99.06	5.90
02810 1145 Impact rotor pop-up full/part commercial circle				
1150	Sprinkler irr sys, spaced 42'-65' @ 35-80 PSI, pop-up full/part ci	EA	50.85	3.66
1160	Sprinkler irr sys, spaced 48'-76' @ 45-85 PSI, pop-up full/part ci	EA	28.54	1.83
02810 1165 Impact rotor pop-up partial commercial circle				
02810 1169 Plastic case metal cover				
1170	Sprinkler, 53'-75', 55-100 PSI, pop-up part cir, w/plstc cs, met	EA	132.17	8.89
02810 1179 Plastic case rubber cover				
1180	Sprinkler, 53'-75', 55-100 PSI, pop-up part cir, w/plstc cs, rbr	EA	141.61	8.96
02810 1189 Iron case metal cover				
1190	Sprinkler, 53'-75', 55-100 PSI, pop-up part cir, w/iron cs, met	EA	175.38	10.23
02810 1199 Iron case rubber cover				
1200	Sprinkler, 53'-75', 55-100 PSI, pop-up part cir, w/iron cs, rbr	EA	184.79	10.26
02810 1282 Impact rotor pop-up full circle commercial				
02810 1283 Plastic case metal cover				
1284	Sprinkler, 39'-99', 30-100 PSI, pop-up full cir, w/plstc cs, met	EA	126.12	9.09
02810 1285 Plastic case rubber cover				
1286	Sprinkler, 39'-99', 30-100 PSI, pop-up full cir, w/plstc cs, rbr	EA	134.85	9.09
02810 1287 Iron case metal cover				
1288	Sprinkler, 39'-99', 30-100 PSI, pop-up full cir, w/iron cs, met	EA	175.38	10.53
02810 1289 Iron case rubber cover				
1290	Sprinkler, 39'-99', 30-100 PSI, pop-up full cir, w/iron cs, rbr	EA	184.79	10.56
02810 1291 2 nozzle plastic case metal cover				
1292	Sprinkler irr sys, 2 noz, met cov, pop-up full cir, coml,	EA	133.06	10.03
02810 1293 2 nozzle plastic case rubber cover				
1294	Sprinkler irr sys, 2 noz, rubber cov, pop-up full cir, coml,	EA	142.47	10.09
02810 1295 2 nozzle iron case metal cover				
1296	Sprinkler irr sys, 2 noz, met cov, pop-up full cir, coml,	EA	173.07	11.03
02810 1297 2 nozzle iron case rubber cover				
1298	Sprinkler irr sys, 2 noz, rubber cov, pop-up full cir, coml,	EA	183.19	11.13
02810 1304 Electric valve				
1305	Sprinkler irr sys, plstc, 3/4", 5-30 GPM 15-125 PSI, elec rmt	EA	42.72	9.33
1310	Sprinkler irr sys, plstc, 1", 5-30 GPM 15-125 PSI, elec rmt	EA	56.83	12.83
1320	Sprinkler irr sys, plstc, 1.5", 5-30 GPM 15-125 PSI, elec rmt	EA	72.95	8.46
1330	Sprinkler irr sys, plstc, 2", 5-30 GPM 15-125 PSI, elec rmt	EA	92.44	8.70
02810 1334 Quick coupling valve Construction With Locking Cover				
1340	Sprinkler irr sys, inlet cplg v, 3/4", brass, locking cov, quick	EA	77.47	8.16
1350	Sprinkler irr sys, inlet cplg v, 1", brass, locking cov, quick	EA	80.83	10.30
02810 1359 Controller valve boxes				
1360	Sprinkler irr sys, controller valve boxes, 6" round boxes	EA	34.27	12.29
1370	Sprinkler irr sys, controller valve boxes, 10" round boxes	EA	45.86	14.53
1380	Sprinkler irr sys, controller valve boxes, 12" square box	EA	69.36	19.79
02810 1388 Electromechanical control				
Note: (See Also 02810-2000 For Mbr Controllers) Station Time: Variable Stations With 6-60 Minutes In 2 Minute Increments. Automatic Starts: 1-23 Per Day. Programming Schedule: 14-Day Calendar Dial For Every Day, Every Other Day Starts, Etc. For A Two Week Period.				
1390	Sprinkler, 14 day, auto start 23/day, 4 sta, 3-60 min,	EA	626.80	132.91
1410	Sprinkler, 14 day, auto start 23/day, 12 sta, 3-60 min,	EA	1,534.31	322.64
1420	Sprinkler irr sys, 18 station, dual programs, electromech cntrl	EA	3,480.95	895.51
1430	Sprinkler irr sys, 23 station, dual programs, electromech cntrl	EA	4,826.76	1,304.48
02810 1435 Backflow preventer				
Note: Assemblies With Resilient Seated Shut-Off Valves And Test Cocks, Bronze Construction Construction Pressure: 0 To 175 PSI Temperature: Up To 140 Degrees F Pressure Loss: 10 To 18-1/2 PSI				
1440	Sprinkler irr sys, tst cocks, 3/4", bronze, 0-175 PSI, w/v,	EA	367.91	43.65
1450	Sprinkler irr sys, tst cocks, 1", bronze, 0-175 PSI, w/v,	EA	374.87	47.58
1460	Sprinkler irr sys, tst cocks, 1.5", bronze, 0-175 PSI, w/v,	EA	475.88	50.55
1470	Sprinkler irr sys, tst cocks, 2", bronze, 0-175 PSI, w/v,	EA	503.26	57.81
02810 1475 Vacuum breaker				
Note: Prevention Assemblies With Gate-Type Shut Off Valves And Ball Valve Test Cocks. Brass Construction Pressure: 15 To 150 PSI Temperature: 33 To 210 Degrees F Pressure Loss: 2 To 10 PSI				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1480	Sprinkler irr sys, 15-150 PSI, 3/4", pressure vacuum breaker,	EA	319.41	70.77
1490	Sprinkler irr sys, 15-150 PSI, 1", pressure vacuum breaker,	EA	344.96	70.97
1500	Sprinkler irr sys, 15-150 PSI, 1.5", pressure vacuum breaker,	EA	411.09	78.40
1510	Sprinkler irr sys, 15-150 PSI, 2", pressure vacuum breaker,	EA	421.85	85.73
02810 2000 Controllers (Also See 02810-1388)				
02810 2010 Computer Controller (Timer)				
Note: Station Timing: 0-99 Minutes. Automatic Starts: On The Hour Up To 3 Starts Per Day. Programming Schedule: Variable Day Cycle From 1 To 7 Days				
2020	6 Station	EA	336.87	87.16
02810 2030 Dual Program Computer Controller (Timer)				
Note: Station Timing: 0-60 Minutes. Automatic Starts: On Any Quarter Hour, Up To 6 Starts Per Day Using Dual Program Capability. Programming Schedule: Based On 14-Day Cycle For Every Day Or Every Other Day.				
2040	4 Stations	EA	1,492.73	422.23
2050	6 Stations	EA	2,169.84	626.59
2060	8 Stations	EA	2,816.39	810.31
02810 2100 Dual Program Hybrid Controllers				
Note: Station time: 0, 2, 5, 10, 15, 20, 30, 45 Minutes, 1 Hour And 2 Hours. Automatic Starts: 8 Start Times Per Program Programming Schedule: 2, 3, And 5 Day Fixed Cycle; Or 7 Day Variable Cycle Selection.				
2110	6 Stations	EA	2,151.53	627.89
2120	Sprinkler, 14 day, auto start 23/day, 7 sta, 3-60 min,	EA	960.61	612.09
2130	8 Stations	EA	2,798.08	811.61
2140	12 Stations	EA	4,103.75	1,271.02
02810 2200 Dual Program Computer Controller				
Note: Station Time: 0-60 Minutes Or 0-6 Hours. Automatic Starts: On Any Quarter Hour, Up To 3 Per Day For Each Program Up To 6 Per Day Using Dual Program Capability Programming. Schedule: Based On 14-Day Cycle For Every Day, Every Other Day Starts For Two Week Period.				
2210	4 Station	EA	1,655.40	412.86
2220	6 Station	EA	2,259.26	620.71
2230	8 Station	EA	2,942.43	802.14
2240	12 Station	EA	4,500.19	1,242.54
2250	18 Station	EA	6,090.88	1,587.73
2260	24 Station	EA	8,772.10	2,488.82
02810 2300 Independent Station Computer Controllers				
Note: Station Time: 0-99 Minutes In Minute Increments And 0-9.9 Hours In Hour Increments. Automatic Starts: On Any Quarter Hours, Up To 4 Per Day For Each Station. Programming Schedule: Based On A Variable Day Cycle For Every Day, Every Other Day, Every Third Day Starts, Etc.				
2310	4 Station	EA	1,821.20	249.48
2320	8 Station	EA	2,820.65	491.44
2330	12 Station	EA	3,664.26	656.66
2340	16 Station	EA	4,926.12	957.55
2350	24 Station	EA	7,153.49	1,445.75
2360	32 Station	EA	9,702.25	2,001.14
02829 Fences & Gates				
Note: Metal Fencing Includes Grounding @ 100 Ft. Intervals. Gates Includes: 2ea 5/8 Ground Rods, Clamps, Braided Strap and #6 Bare Copper Wire.				
02830 1000 General Purpose Barbed Tape Obstacle (GPBTO)				
1010	Type II		14.28	
1020	Type III Galv		4.42	
1030	Type III SS		4.77	
02831 0010 Fence, chain link industrial				
Note: Costs Include 2-1/2 In O. D. Line Posts Every 10 Ft With 3 In O. D. Pull Post Every 100 Ft, 1 In 9 Gauge Fabric And 3 Strands Of Barb Wire. Costs Do Not Include Drilling Of Post Holes				
02831 2000 Galvanized Steel				
02831 2100 12 Gauge, 2 In (50M) By 4 In (100M) Mesh, Posts 5 Ft (1.5M) O.C.				
2101	3' (.9M)H 12 Ga Galv Stl Fence 2" x 4" Mesh, Posts at 5'	LF	4.38	0.55
2102	5' (1.5M)H 12 Ga Galv Stl Fence 2" x 4" Mesh, Posts at 5'	LF	4.75	0.63
02831 2200 14 Gauge, 1 In (25M) By 2 In (50M) Mesh, Posts 5 Ft (1.5M) O.C.				
2201	3' (.9M)H 14 Ga Galv Stl Fence 1" x 2" Mesh, Posts at 5'	LF	4.31	0.59
2202	5' (1.5M)H 14 Ga Galv Stl Fence 1" x 2" Mesh, Posts at 5'	LF	4.63	0.63
02831 3000 Miscellaneous Fencing				
02831 3100 Gate Attachments				
3101	Cantilever Roller Assembly, Ball bearing With Fittings	EA	51.64	4.64
3102	Sliding gate Roller Assembly	EA	42.97	4.11

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3103	Diagonal Brace Rod With Tightner	EA	10.38	1.86
3104	Rod And Lock Gate Keeper	EA	49.74	3.34
3105	Gate Catch Block	EA	16.03	1.86
3106	Gate Keeper Hold-Open For Cantilever Gate	EA	25.58	3.34
02831 5000 Miscellaneous Wire And Screen				
02831 5100 Wire And Screen For Partitions And Fences Price Does Not Include Framing Or Post -Mesh Only				
5111	Screen Wire, 48" Wide Rolls	SF	0.95	0.30
5121	4"x 4" Hog Wire for Fencing	SF	0.68	0.27
5122	6"x 6" Hog Wire for Fencing	SF	0.71	0.30
02831 6499 Auger by hand fence post hole				
6500	Fence, CL, post hole, auger by hand, 3' D, ndm soil	EA	7.53	
6510	Fence, CL, post hole, auger by machine, 3' D, ndm soil	EA	8.61	
02831 6519 Jackhammer fence post hole, rock				
6520	Fence, CL, jkhr post hole, rock, 3' D	EA	39.02	
02831 6529 Rock drill fence post hole, rock				
6530	Fence, CL, drill post hole, rock, 3' D	EA	15.60	
02831 6539 Fence, chain link, galv, top rail, line post				
Note: Galvanize And Vinyl Coated Includes Concrete, Coiled Spring Mesh, Top Rail, Line Post				
6540	Fence, CL, 4' H, indl, galv, top rail, line post, set in conc	LF	7.83	0.80
6550	Fence, CL, 4' H, indl, vinyl, top rail, line post, set in conc	LF	8.46	0.80
6560	Fence, CL, 6' H, indl, galv, top rail, line post, set in conc	LF	10.38	0.94
6570	Fence, CL, 6' H, indl, vinyl, top rail, line post, set in conc	LF	11.37	0.94
02831 6579 Line posts, set in concrete				
02831 6579 Round				
6580	Fence, CL, 4' H, indl, line posts, galv, 2.5" OD, set in	EA	28.68	5.51
6657	Fencing, CL, for line posts with single barbed wire arm add		0.60	
6658	Fencing, CL, for line posts with double barbed wire arm add		1.50	
6659	Fencing, CL, for line posts with top rail fitting, add		1.35	
6585	Fence, CL, 5' H, indl, line posts, galv, 2.5" OD, set in	EA	32.12	5.61
6657	Fencing, CL, for line posts with single barbed wire arm add		0.72	
6658	Fencing, CL, for line posts with double barbed wire arm add		1.80	
6659	Fencing, CL, for line posts with top rail fitting, add		1.62	
6590	Fence, CL, 6' H, indl, line posts, galv, 2.5" OD, set in	EA	35.77	6.55
6657	Fencing, CL, for line posts with single barbed wire arm add		0.84	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.11	
6659	Fencing, CL, for line posts with top rail fitting, add		1.90	
6595	Fence, CL, 7' H, indl, line posts, galv, 2.5" OD, set in	EA	38.32	6.58
6657	Fencing, CL, for line posts with single barbed wire arm add		0.92	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.31	
6659	Fencing, CL, for line posts with top rail fitting, add		2.08	
6600	Fence, CL, 8' H, indl, line posts, galv, 2.5" OD, set in	EA	41.30	7.14
6657	Fencing, CL, for line posts with single barbed wire arm add		1.02	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.55	
6659	Fencing, CL, for line posts with top rail fitting, add		2.30	
02831 6609 H-beams				
6610	Fence, CL, 4' H, indl, line posts, H-beam 1-7/8", set in	EA	29.77	6.13
6657	Fencing, CL, for line posts with single barbed wire arm add		0.67	
6658	Fencing, CL, for line posts with double barbed wire arm add		1.67	
6659	Fencing, CL, for line posts with top rail fitting, add		1.50	
6615	Fence, CL, 5' H, indl, line posts, H-beam 1-7/8", set in	EA	32.57	6.20
6657	Fencing, CL, for line posts with single barbed wire arm add		0.76	
6658	Fencing, CL, for line posts with double barbed wire arm add		1.91	
6659	Fencing, CL, for line posts with top rail fitting, add		1.72	
6620	Fence, CL, 6' H, indl, line posts, H-beam 1-7/8", set in	EA	36.22	6.45
6657	Fencing, CL, for line posts with single barbed wire arm add		0.89	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.23	
6659	Fencing, CL, for line posts with top rail fitting, add		2.01	
6625	Fence, CL, 7' H, indl, line posts, H-beam 1-7/8", set in	EA	38.82	6.45
6657	Fencing, CL, for line posts with single barbed wire arm add		0.98	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.44	
6659	Fencing, CL, for line posts with top rail fitting, add		2.20	
6630	Fence, CL, 8' H, indl, line posts, H-beam 1-7/8", set in	EA	41.45	7.07
6657	Fencing, CL, for line posts with single barbed wire arm add		1.06	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.65	
6659	Fencing, CL, for line posts with top rail fitting, add		2.39	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02831 6634	Vinyl coated round			
6635	Fence, CL, in conc, 4' H, indl, line posts, vinyl coated, 2.5"	EA	40.02	5.61
6657	Fencing, CL, for line posts with single barbed wire arm add		1.05	
6658	Fencing, CL, for line posts with double barbed wire arm add		2.63	
6659	Fencing, CL, for line posts with top rail fitting, add		2.37	
6640	Fence, CL, in conc, 5' H, indl, line posts, vinyl coated, 2.5"	EA	45.09	5.54
6657	Fencing, CL, for line posts with single barbed wire arm add		1.24	
6658	Fencing, CL, for line posts with double barbed wire arm add		3.09	
6659	Fencing, CL, for line posts with top rail fitting, add		2.78	
6645	Fence, CL, in conc, 6' H, indl, line posts, vinyl coated, 2.5"	EA	51.52	5.75
6657	Fencing, CL, for line posts with single barbed wire arm add		1.47	
6658	Fencing, CL, for line posts with double barbed wire arm add		3.69	
6659	Fencing, CL, for line posts with top rail fitting, add		3.32	
6650	Fence, CL, in conc, 7' H, indl, line posts, vinyl coated, 2.5"	EA	55.08	5.54
6657	Fencing, CL, for line posts with single barbed wire arm add		1.60	
6658	Fencing, CL, for line posts with double barbed wire arm add		3.99	
6659	Fencing, CL, for line posts with top rail fitting, add		3.59	
6655	Fence, CL, in conc, 8' H, indl, line posts, vinyl coated, 2.5"	EA	60.00	6.03
6657	Fencing, CL, for line posts with single barbed wire arm add		1.77	
6658	Fencing, CL, for line posts with double barbed wire arm add		4.42	
6659	Fencing, CL, for line posts with top rail fitting, add		3.98	
02831 6659	End gate post, set in concrete			
6660	Fence, CL, 4' H, indl, end gate post, steel, 3" OD, set in conc	EA	47.10	6.59
6708	Fencing, CL, for double gate posts greater than 24' wide, add		43.88	
6709	Fencing, CL, for line posts with top rail fitting, add		2.82	
6665	Fence, CL, 5' H, indl, end gate post, steel, 3" OD, set in conc	EA	56.37	6.97
6708	Fencing, CL, for double gate posts greater than 24' wide, add		54.88	
6709	Fencing, CL, for line posts with top rail fitting, add		3.60	
6670	Fence, CL, 6' H, indl, end gate post, steel, 3" OD, set in conc	EA	57.63	6.90
6708	Fencing, CL, for double gate posts greater than 24' wide, add		55.83	
6709	Fencing, CL, for line posts with top rail fitting, add		3.65	
6675	Fence, CL, 7' H, indl, end gate post, steel, 3" OD, set in conc	EA	71.00	7.04
6708	Fencing, CL, for double gate posts greater than 24' wide, add		72.20	
6709	Fencing, CL, for line posts with top rail fitting, add		4.82	
6680	Fence, CL, 8' H, indl, end gate post, steel, 3" OD, set in conc	EA	76.69	7.04
6708	Fencing, CL, for double gate posts greater than 24' wide, add		78.60	
6709	Fencing, CL, for line posts with top rail fitting, add		5.27	
6685	Fence, CL, 4' H, indl, end gate post, vinyl ctd, 3" OD, set in	EA	66.90	7.60
6708	Fencing, CL, for double gate posts greater than 24' wide, add		68.63	
6709	Fencing, CL, for line posts with top rail fitting, add		4.60	
6690	Fence, CL, 5' H, indl, end gate post, vinyl ctd, 3" OD, set in	EA	72.29	7.77
6708	Fencing, CL, for double gate posts greater than 24' wide, add		74.78	
6709	Fencing, CL, for line posts with top rail fitting, add		5.03	
6695	Fence, CL, 6' H, indl, end gate post, vinyl ctd, 3" OD, set in	EA	82.85	7.77
6708	Fencing, CL, for double gate posts greater than 24' wide, add		87.36	
6709	Fencing, CL, for line posts with top rail fitting, add		5.92	
6700	Fence, CL, 7' H, indl, end gate post, vinyl ctd, 3" OD, set in	EA	84.71	7.87
6708	Fencing, CL, for double gate posts greater than 24' wide, add		89.34	
6709	Fencing, CL, for line posts with top rail fitting, add		6.06	
6705	Fence, CL, 8' H, indl, end gate post, vinyl ctd, 3" OD, set in	EA	96.64	8.25
6708	Fencing, CL, for double gate posts greater than 24' wide, add		103.54	
6709	Fencing, CL, for line posts with top rail fitting, add		7.06	
02831 6709	Corner post, set in concrete			
6710	Fence, CL, set in conc, 4' H, indl, corner post, galv stl, 4"	EA	67.35	5.23
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		4.08	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		6.62	
6749	Fencing, CL, for line posts with top rail fitting, add		4.59	
6715	Fence, CL, set in conc, 6' H, indl, corner post, galv stl, 4"	EA	85.34	6.34
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		5.46	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		8.88	
6749	Fencing, CL, for line posts with top rail fitting, add		6.15	
6720	Fence, CL, set in conc, 7' H, indl, corner post, galv stl, 4"	EA	99.02	6.69
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		6.53	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		10.61	
6749	Fencing, CL, for line posts with top rail fitting, add		7.34	
6725	Fence, CL, set in conc, 8' H, indl, corner post, galv stl, 4"	EA	106.62	6.79
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		7.08	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		11.50	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6749	Fencing, CL, for line posts with top rail fitting, add		7.96	
6730	Fence, CL, in conc, 4' H, indl, corner post, vinyl ctd, 4" OD	EA	106.02	7.14
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		7.17	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		11.65	
6749	Fencing, CL, for line posts with top rail fitting, add		8.07	
6735	Fence, CL, in conc, 6' H, indl, corner post, vinyl ctd, 4" OD	EA	129.77	7.91
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		9.02	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		14.65	
6749	Fencing, CL, for line posts with top rail fitting, add		10.14	
6740	Fence, CL, in conc, 7' H, indl, corner post, vinyl ctd, 4" OD	EA	141.12	8.22
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		9.90	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		16.08	
6749	Fencing, CL, for line posts with top rail fitting, add		11.13	
6745	Fence, CL, in conc, 8' H, indl, corner post, vinyl ctd, 4" OD	EA	152.44	8.25
6747	Fencing, CL, corner, gate & end posts w/sgl barbed wire arm add		10.74	
6748	Fencing, CL, corner, gate & end posts w/dbl barbed wire arm add		17.46	
6749	Fencing, CL, for line posts with top rail fitting, add		12.08	
02831 6749	Line post, grouted in rock			
6750	Fence, CL, grouted in rock, 4' H, indl, line post, galv, 2.5"	EA	25.97	4.63
6823	Fencing, CL, for line posts with single barbed wire arm add		0.60	
6824	Fencing, CL, for line posts with double barbed wire arm add		1.50	
6755	Fence, CL, grouted in rock, 5' H, indl, line post, galv, 2.5"	EA	29.25	4.70
6823	Fencing, CL, for line posts with single barbed wire arm add		0.72	
6824	Fencing, CL, for line posts with double barbed wire arm add		1.80	
6760	Fence, CL, grouted in rock, 6' H, indl, line post, galv, 2.5"	EA	32.72	4.92
6823	Fencing, CL, for line posts with single barbed wire arm add		0.84	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.11	
6765	Fence, CL, grouted in rock, 7' H, indl, line post, galv, 2.5"	EA	35.07	4.91
6823	Fencing, CL, for line posts with single barbed wire arm add		0.92	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.31	
6770	Fence, CL, grouted in rock, 8' H, indl, line post, galv, 2.5"	EA	37.82	4.95
6823	Fencing, CL, for line posts with single barbed wire arm add		1.02	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.55	
02831 6774	H-beams, grouted in rock			
6775	Fence, CL, indl, H-beams, galv, 2.25", grouted in rock, 4' H	EA	30.28	5.85
6823	Fencing, CL, for line posts with single barbed wire arm add		0.77	
6824	Fencing, CL, for line posts with double barbed wire arm add		1.93	
6780	Fence, CL, indl, H-beams, galv, 2.25", grouted in rock, 5' H	EA	33.34	5.92
6823	Fencing, CL, for line posts with single barbed wire arm add		0.88	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.20	
6785	Fence, CL, indl, H-beams, galv, 2.25", grouted in rock, 6' H	EA	36.81	6.10
6823	Fencing, CL, for line posts with single barbed wire arm add		1.01	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.52	
6790	Fence, CL, indl, H-beams, galv, 2.25", grouted in rock, 7' H	EA	39.77	6.13
6823	Fencing, CL, for line posts with single barbed wire arm add		1.11	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.78	
6795	Fence, CL, indl, H-beams, galv, 2.25", grouted in rock, 8' H	EA	42.74	6.17
6823	Fencing, CL, for line posts with single barbed wire arm add		1.22	
6824	Fencing, CL, for line posts with double barbed wire arm add		3.04	
02831 6799	Line post, grouted in rock			
6800	Fence, CL, grouted in rock, 4' H, indl, line post, vinyl ctd, 2.5	EA	37.31	4.49
6823	Fencing, CL, for line posts with single barbed wire arm add		1.05	
6824	Fencing, CL, for line posts with double barbed wire arm add		2.63	
6805	Fence, CL, grouted in rock, 5' H, indl, line post, vinyl ctd, 2.5	EA	42.22	4.53
6823	Fencing, CL, for line posts with single barbed wire arm add		1.24	
6824	Fencing, CL, for line posts with double barbed wire arm add		3.09	
6810	Fence, CL, grouted in rock, 6' H, indl, line post, vinyl ctd, 2.5	EA	48.47	4.57
6823	Fencing, CL, for line posts with single barbed wire arm add		1.47	
6824	Fencing, CL, for line posts with double barbed wire arm add		3.69	
6815	Fence, CL, grouted in rock, 7' H, indl, line post, vinyl ctd, 2.5	EA	51.83	4.64
6823	Fencing, CL, for line posts with single barbed wire arm add		1.60	
6824	Fencing, CL, for line posts with double barbed wire arm add		3.99	
6820	Fence, CL, grouted in rock, 8' H, indl, line post, vinyl ctd, 2.5	EA	56.52	4.71
6823	Fencing, CL, for line posts with single barbed wire arm add		1.77	
6824	Fencing, CL, for line posts with double barbed wire arm add		4.42	
02831 6824	End post, grouted in rock			
6825	Fence, CL, 4' H, indl, end post, galv, 3" OD, grouted in rock	EA	43.27	4.95
6873	Fencing, CL, for double gate posts greater than 24' wide, add		42.74	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6874	Fencing, CL, for line posts with top rail fitting, add		2.82	
6830	Fence, CL, 5' H, indl, end post, galv, 3" OD, grouted in rock	EA	52.27	5.33
6873	Fencing, CL, for double gate posts greater than 24' wide, add		53.65	
6874	Fencing, CL, for line posts with top rail fitting, add		3.60	
6835	Fence, CL, 6' H, indl, end post, galv, 3" OD, grouted in rock	EA	53.63	5.40
6873	Fencing, CL, for double gate posts greater than 24' wide, add		54.63	
6874	Fencing, CL, for line posts with top rail fitting, add		3.65	
6840	Fence, CL, 7' H, indl, end post, galv, 3" OD, grouted in rock	EA	67.52	5.40
6873	Fencing, CL, for double gate posts greater than 24' wide, add		71.16	
6874	Fencing, CL, for line posts with top rail fitting, add		4.82	
6845	Fence, CL, 8' H, indl, end post, galv, 3" OD, grouted in rock	EA	72.94	5.58
6873	Fencing, CL, for double gate posts greater than 24' wide, add		77.48	
6874	Fencing, CL, for line posts with top rail fitting, add		5.27	
6850	Fence, CL, grouted in rock, 4' H, indl, end post, vinyl ctd, 3"	EA	63.42	5.72
6873	Fencing, CL, for double gate posts greater than 24' wide, add		67.59	
6874	Fencing, CL, for line posts with top rail fitting, add		4.60	
6855	Fence, CL, grouted in rock, 5' H, indl, end post, vinyl ctd, 3"	EA	68.37	5.92
6873	Fencing, CL, for double gate posts greater than 24' wide, add		73.61	
6874	Fencing, CL, for line posts with top rail fitting, add		5.03	
6860	Fence, CL, grouted in rock, 6' H, indl, end post, vinyl ctd, 3"	EA	78.66	5.96
6873	Fencing, CL, for double gate posts greater than 24' wide, add		86.10	
6874	Fencing, CL, for line posts with top rail fitting, add		5.92	
6865	Fence, CL, grouted in rock, 7' H, indl, end post, vinyl ctd, 3"	EA	80.56	5.99
6873	Fencing, CL, for double gate posts greater than 24' wide, add		88.09	
6874	Fencing, CL, for line posts with top rail fitting, add		6.06	
6870	Fence, CL, grouted in rock, 8' H, indl, end post, vinyl ctd, 3"	EA	92.18	6.10
6873	Fencing, CL, for double gate posts greater than 24' wide, add		102.20	
6874	Fencing, CL, for line posts with top rail fitting, add		7.06	
02831 6874	Corner post, grouted in rock			
6875	Fence, CL, grouted in rock, 4' H, indl, corner post, galv, 4"	EA	63.43	4.32
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		4.08	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		6.62	
6914	Fencing, CL, for line posts with top rail fitting, add		4.59	
6880	Fence, CL, grouted in rock, 6' H, indl, corner post, galv, 4"	EA	81.15	4.81
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		5.46	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		8.88	
6914	Fencing, CL, for line posts with top rail fitting, add		6.15	
6885	Fence, CL, grouted in rock, 7' H, indl, corner post, galv, 4"	EA	94.87	5.09
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		6.53	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		10.61	
6914	Fencing, CL, for line posts with top rail fitting, add		7.34	
6890	Fence, CL, grouted in rock, 8' H, indl, corner post, galv, 4"	EA	102.16	4.77
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		7.08	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		11.50	
6914	Fencing, CL, for line posts with top rail fitting, add		7.96	
6895	Fence, CL, 4' H, indl, corner post, vinyl ctd, 4" OD, grouted	EA	102.10	5.96
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		7.17	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		11.65	
6914	Fencing, CL, for line posts with top rail fitting, add		8.07	
6900	Fence, CL, 6' H, indl, corner post, vinyl ctd, 4" OD, grouted	EA	125.58	6.31
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		9.02	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		14.65	
6914	Fencing, CL, for line posts with top rail fitting, add		10.14	
6905	Fence, CL, 7' H, indl, corner post, vinyl ctd, 4" OD, grouted	EA	136.97	6.03
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		9.90	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		16.08	
6914	Fencing, CL, for line posts with top rail fitting, add		11.13	
6910	Fence, CL, 8' H, indl, corner post, vinyl ctd, 4" OD, grouted	EA	147.98	6.45
6912	Fencing, CL, corner, gate & end posts w/ sgl barbed wire arm add		10.74	
6913	Fencing, CL, corner, gate & end posts w/ dbl barbed wire arm add		17.46	
6914	Fencing, CL, for line posts with top rail fitting, add		12.08	
02831 6914	Post w/fittings for fabric top rail, barb wire (1.8M) High Fence			
6915	Fence, CL, galv, 4' H, indl, corner post w/ftg for fabric top	LF	19.13	
6932	Fencing, CL, for barbed wire double arm galvanized, add		10.00	
6933	Fencing, CL, for barbed wire double arm vinyl coated, add		18.00	
6934	Fencing, CL, for vinyl coated post, add		11.48	
6920	Fence, CL, galv, 4' H, indl, end post w/ftg for fabric top rail,	LF	19.06	
6932	Fencing, CL, for barbed wire double arm galvanized, add		10.00	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6933	Fencing, CL, for barbed wire double arm vinyl coated, add		18.00	
6934	Fencing, CL, for vinyl coated post, add		11.44	
6925	Fence, CL, galv, 6' H, indl, cor post w/ftg for fabric top rail,	LF	24.35	
6932	Fencing, CL, for barbed wire double arm galvanized, add		10.00	
6933	Fencing, CL, for barbed wire double arm vinyl coated, add		18.00	
6934	Fencing, CL, for vinyl coated post, add		14.61	
6930	Fence, CL, galv, 6' H, indl, end post w/ftg for fabric top rail,	LF	24.29	
6932	Fencing, CL, for barbed wire double arm galvanized, add		10.00	
6933	Fencing, CL, for barbed wire double arm vinyl coated, add		18.00	
6934	Fencing, CL, for vinyl coated post, add		14.57	
02831 6934 Fabric				
6935	Fence, CL, 2" chain link, 4' H, indl, fabric, 9 ga, galv, 1.2 oz	LF	4.80	0.59
6959	Fencing, CL, for 2 oz/SF galvanized coating, add		0.62	
6940	Fence, CL, 2" chain link, 5' H, indl, fabric, 9 ga, galv, 1.2 oz	LF	5.42	0.59
6959	Fencing, CL, for 2 oz/SF galvanized coating, add		0.74	
6945	Fence, CL, 2" chain link, 6' H, indl, fabric, 9 ga, galv, 1.2 oz	LF	7.36	0.73
6959	Fencing, CL, for 2 oz/SF galvanized coating, add		1.26	
6950	Fence, CL, 2" chain link, 7' H, indl, fabric, 9 ga, galv, 1.2 oz	LF	6.78	0.56
6959	Fencing, CL, for 2 oz/SF galvanized coating, add		1.02	
6955	Fence, CL, 2" chain link, 8' H, indl, fabric, 9 ga, galv, 1.2 oz	LF	10.87	0.87
6959	Fencing, CL, for 2 oz/SF galvanized coating, add		2.16	
6960	Fence, CL, indl, fabric, 9 ga, fused, 4'	LF	5.03	0.70
6965	Fence, CL, indl, fabric, 9 ga, fused, 5'	LF	5.79	0.70
6970	Fence, CL, indl, fabric, 9 ga, fused, 6'	LF	7.27	0.70
6975	Fence, CL, indl, fabric, 9 ga, fused, 7'	LF	7.38	0.77
6980	Fence, CL, indl, fabric, 9 ga, fused, 8'	LF	9.39	0.80
02831 6984 Barbed wire				
02831 6984 Wire				
6985	Fence, CL, indl, barbed wire, galv, cost per strand	LF	0.43	0.18
6990	Fence, CL, indl, barbed wire, vinyl coated, cost per strand	LF	0.53	0.18
6991	Constina (Razor) Wire, Per Strand	LF	1.44	0.25
02831 6994 Barbed wire extension arms				
6995	Fence, CL, indl, barbed wire, extension arms 3, strands	EA	16.60	3.49
02831 7000 Remove & Reinstall Chain Link Fences				
Note: Complete Removal & Reinstallation Of Fences Including Storage And Cleaning.				
7000	Fence, CL, 2-3/8", indl, barbed wire, extension arms 6, strands	EA	14.88	3.49
7001	Removal & Reinstallation of Chain Link Fence Up To 5' Hgt	LF	7.03	
7002	Removal & Reinstallation of Chain Link Fence 6' To 10' Hgt	LF	10.55	
02831 7009 Top rail				
7010	Fence, CL, 1-5/8", galv, indl, top rail, w/tie wires, barbed	LF	2.84	0.83
7020	Fence, CL, 1-5/8", vinyl ctd, indl, top rail, w/tie wires,	LF	3.81	0.66
02831 7029 Copper grounding rods				
7030	Fence, CL, grounding rod, copper, 5/8" x 10' long	EA	89.92	13.94
02831 7035 Grounding For Gates (Per Opening)				
Note: Includes: 2 Ea 5/8 Ground Rods, Clamps, Braided Strap And #6 Bare Copper Wire.				
7036	Grounding For Gates (Per Opening)	OPN	189.64	35.14
02831 7039 Rail				
7040	Fence, CL, 1-5/8", galv, indl, barbed wire, mid/bot rail, w/tie	LF	2.47	0.42
7050	Fence, CL, 1-5/8", vinyl, indl, barbed wire, mid/bot rail, w/tie	LF	3.14	0.55
02831 7059 Reinforcing wire				
7060	Fence, CL, 7 ga, galv, indl, barbed wire, coiled spring, reinf	LF	0.47	0.14
7070	Fence, CL, 9 ga, vinyl ctd, indl, barbed wire, coiled spr, reinf	LF	0.52	0.18
02831 7074 Gates, swing, chain link				
Note: Gates Includes: 2ea 5/8" Ground Tods, Clamps, Braided Strap and #6 Bare Copper Wire.				
02831 7074 With barbed wire				
7075	Fence, CL, single, 4' W indl, gates, swing, 4' high	EA	85.07	
7080	Fence, CL, double, 12' W indl, gates, swing, 4' high	EA	250.81	
7085	Fence, CL, double, 24' W indl, gates, swing, 4' high	EA	373.94	
7090	Fence, CL, single, 4' W indl, gates, swing, 6' high	EA	122.22	
7095	Fence, CL, double, 12' W indl, gates, swing, 6' high	EA	339.90	
7105	Fence, CL, double, 24' W indl, gates, swing, 6' high	EA	431.91	
02831 7109 Without barbed wire				
Note: Costs Include 2-1/2 In 0. D. Line Posts Every 10 Ft With 3 In 0. D. Pull Post Every 100 Ft, 1 In 9 Gauge Fabric And 3 Strands Of Barb Wire. Costs Do Not Include Drilling Of Post Holes				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7110	Fence, CL, 4' high, sgl, 3' W indl, gates, swing, galv, w/o	EA	116.63	9.17
7436	Fencing, CL, for single gate with single barbed wire arm add		4.44	
7437	Fencing, CL, for single gate with double barbed wire arm add		8.88	
7438	Fencing, CL, for double gate with single barbed wire arm add		4.44	
7439	Fencing, CL, for double gate with double barbed wire arm add		8.88	
7115	Fence, CL, 4' high, sgl, 4' W indl, gates, swing, galv, w/o	EA	125.50	10.52
7436	Fencing, CL, for single gate with single barbed wire arm add		4.88	
7437	Fencing, CL, for single gate with double barbed wire arm add		9.76	
7438	Fencing, CL, for double gate with single barbed wire arm add		4.88	
7439	Fencing, CL, for double gate with double barbed wire arm add		9.76	
7120	Fence, CL, 4' high, dbl, 10' W indl, gates, swing, galv, w/o	EA	301.05	21.53
7436	Fencing, CL, for single gate with single barbed wire arm add		12.07	
7437	Fencing, CL, for single gate with double barbed wire arm add		24.13	
7438	Fencing, CL, for double gate with single barbed wire arm add		12.07	
7439	Fencing, CL, for double gate with double barbed wire arm add		24.13	
7125	Fence, CL, 4' high, dbl, 12' W indl, gates, swing, galv, w/o	EA	332.17	21.81
7436	Fencing, CL, for single gate with single barbed wire arm add		13.39	
7437	Fencing, CL, for single gate with double barbed wire arm add		26.78	
7438	Fencing, CL, for double gate with single barbed wire arm add		13.39	
7439	Fencing, CL, for double gate with double barbed wire arm add		26.78	
7130	Fence, CL, 4' high, dbl, 14' W indl, gates, swing, galv, w/o	EA	349.84	24.28
7436	Fencing, CL, for single gate with single barbed wire arm add		14.01	
7437	Fencing, CL, for single gate with double barbed wire arm add		28.02	
7438	Fencing, CL, for double gate with single barbed wire arm add		14.01	
7439	Fencing, CL, for double gate with double barbed wire arm add		28.02	
7135	Fence, CL, 4' high, dbl, 16' W indl, gates, swing, galv, w/o	EA	435.60	27.62
7436	Fencing, CL, for single gate with single barbed wire arm add		15.58	
7437	Fencing, CL, for single gate with double barbed wire arm add		31.16	
7438	Fencing, CL, for double gate with single barbed wire arm add		15.58	
7439	Fencing, CL, for double gate with double barbed wire arm add		31.16	
7140	Fence, CL, 4' high, dbl, 18' W indl, gates, swing, galv, w/o	EA	440.32	35.33
7436	Fencing, CL, for single gate with single barbed wire arm add		17.15	
7437	Fencing, CL, for single gate with double barbed wire arm add		34.29	
7438	Fencing, CL, for double gate with single barbed wire arm add		17.15	
7439	Fencing, CL, for double gate with double barbed wire arm add		34.29	
7145	Fence, CL, 4' high, dbl, 20' W indl, gates, swing, galv, w/o	EA	475.46	39.51
7436	Fencing, CL, for single gate with single barbed wire arm add		18.53	
7437	Fencing, CL, for single gate with double barbed wire arm add		37.06	
7438	Fencing, CL, for double gate with single barbed wire arm add		18.53	
7439	Fencing, CL, for double gate with double barbed wire arm add		37.06	
7150	Fence, CL, 4' high, dbl, 22' W indl, gates, swing, galv, w/o	EA	510.28	42.11
7436	Fencing, CL, for single gate with single barbed wire arm add		19.83	
7437	Fencing, CL, for single gate with double barbed wire arm add		39.66	
7438	Fencing, CL, for double gate with single barbed wire arm add		19.83	
7439	Fencing, CL, for double gate with double barbed wire arm add		39.66	
7155	Fence, CL, 4' high, dbl, 24' W indl, gates, swing, galv, w/o	EA	544.37	44.54
7436	Fencing, CL, for single gate with single barbed wire arm add		21.02	
7437	Fencing, CL, for single gate with double barbed wire arm add		42.04	
7438	Fencing, CL, for double gate with single barbed wire arm add		21.02	
7439	Fencing, CL, for double gate with double barbed wire arm add		42.04	
7160	Fence, CL, 4' high, dbl, 26' W indl, gates, swing, galv, w/o	EA	580.40	47.61
7436	Fencing, CL, for single gate with single barbed wire arm add		22.20	
7437	Fencing, CL, for single gate with double barbed wire arm add		44.40	
7438	Fencing, CL, for double gate with single barbed wire arm add		22.20	
7439	Fencing, CL, for double gate with double barbed wire arm add		44.40	
7165	Fence, CL, 4' high, dbl, 28' W indl, gates, swing, galv, w/o	EA	603.79	50.20
7436	Fencing, CL, for single gate with single barbed wire arm add		23.37	
7437	Fencing, CL, for single gate with double barbed wire arm add		46.74	
7438	Fencing, CL, for double gate with single barbed wire arm add		23.37	
7439	Fencing, CL, for double gate with double barbed wire arm add		46.74	
7170	Fence, CL, 4' high, dbl, 30' W indl, gates, swing, galv, w/o	EA	649.55	61.16
7436	Fencing, CL, for single gate with single barbed wire arm add		24.90	
7437	Fencing, CL, for single gate with double barbed wire arm add		49.80	
7438	Fencing, CL, for double gate with single barbed wire arm add		24.90	
7439	Fencing, CL, for double gate with double barbed wire arm add		49.80	
7175	Fence, CL, 5' high, sgl, 3' W indl, gates, swing, galv, w/o	EA	126.92	10.07
7436	Fencing, CL, for single gate with single barbed wire arm add		4.90	
7437	Fencing, CL, for single gate with double barbed wire arm add		9.81	
7438	Fencing, CL, for double gate with single barbed wire arm add		4.90	
7439	Fencing, CL, for double gate with double barbed wire arm add		9.81	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7180	Fence, CL, 5' high, sgl, 4' W indl, gates, swing, galv, w/o	EA	137.74	8.78
7436	Fencing, CL, for single gate with single barbed wire arm add		5.45	
7437	Fencing, CL, for single gate with double barbed wire arm add		10.89	
7438	Fencing, CL, for double gate with single barbed wire arm add		5.45	
7439	Fencing, CL, for double gate with double barbed wire arm add		10.89	
7185	Fence, CL, 5' high, dbl, 10' W indl, gates, swing, galv, w/o	EA	317.95	22.34
7436	Fencing, CL, for single gate with single barbed wire arm add		12.68	
7437	Fencing, CL, for single gate with double barbed wire arm add		25.36	
7438	Fencing, CL, for double gate with single barbed wire arm add		12.68	
7439	Fencing, CL, for double gate with double barbed wire arm add		25.36	
7190	Fence, CL, 5' high, dbl, 12' W indl, gates, swing, galv, w/o	EA	349.12	22.37
7436	Fencing, CL, for single gate with single barbed wire arm add		13.97	
7437	Fencing, CL, for single gate with double barbed wire arm add		27.94	
7438	Fencing, CL, for double gate with single barbed wire arm add		13.97	
7439	Fencing, CL, for double gate with double barbed wire arm add		27.94	
7195	Fence, CL, 5' high, dbl, 14' W indl, gates, swing, galv, w/o	EA	395.59	23.07
7436	Fencing, CL, for single gate with single barbed wire arm add		15.98	
7437	Fencing, CL, for single gate with double barbed wire arm add		31.96	
7438	Fencing, CL, for double gate with single barbed wire arm add		15.98	
7439	Fencing, CL, for double gate with double barbed wire arm add		31.96	
7205	Fence, CL, 5' high, dbl, 16' W indl, gates, swing, galv, w/o	EA	447.22	31.71
7436	Fencing, CL, for single gate with single barbed wire arm add		17.49	
7437	Fencing, CL, for single gate with double barbed wire arm add		34.98	
7438	Fencing, CL, for double gate with single barbed wire arm add		17.49	
7439	Fencing, CL, for double gate with double barbed wire arm add		34.98	
7210	Fence, CL, 5' high, dbl, 18' W indl, gates, swing, galv, w/o	EA	474.83	32.52
7436	Fencing, CL, for single gate with single barbed wire arm add		18.50	
7437	Fencing, CL, for single gate with double barbed wire arm add		36.99	
7438	Fencing, CL, for double gate with single barbed wire arm add		18.50	
7439	Fencing, CL, for double gate with double barbed wire arm add		36.99	
7215	Fence, CL, 5' high, dbl, 20' W indl, gates, swing, galv, w/o	EA	509.39	43.21
7436	Fencing, CL, for single gate with single barbed wire arm add		19.79	
7437	Fencing, CL, for single gate with double barbed wire arm add		39.57	
7438	Fencing, CL, for double gate with single barbed wire arm add		19.79	
7439	Fencing, CL, for double gate with double barbed wire arm add		39.57	
7220	Fence, CL, 5' high, dbl, 22' W indl, gates, swing, galv, w/o	EA	547.79	45.81
7436	Fencing, CL, for single gate with single barbed wire arm add		21.19	
7437	Fencing, CL, for single gate with double barbed wire arm add		42.38	
7438	Fencing, CL, for double gate with single barbed wire arm add		21.19	
7439	Fencing, CL, for double gate with double barbed wire arm add		42.38	
7225	Fence, CL, 5' high, dbl, 24' W indl, gates, swing, galv, w/o	EA	588.52	49.10
7436	Fencing, CL, for single gate with single barbed wire arm add		22.61	
7437	Fencing, CL, for single gate with double barbed wire arm add		45.21	
7438	Fencing, CL, for double gate with single barbed wire arm add		22.61	
7439	Fencing, CL, for double gate with double barbed wire arm add		45.21	
7230	Fence, CL, 5' high, dbl, 26' W indl, gates, swing, galv, w/o	EA	614.75	51.78
7436	Fencing, CL, for single gate with single barbed wire arm add		23.92	
7437	Fencing, CL, for single gate with double barbed wire arm add		47.84	
7438	Fencing, CL, for double gate with single barbed wire arm add		23.92	
7439	Fencing, CL, for double gate with double barbed wire arm add		47.84	
7235	Fence, CL, 5' high, dbl, 28' W indl, gates, swing, galv, w/o	EA	653.35	56.21
7436	Fencing, CL, for single gate with single barbed wire arm add		25.09	
7437	Fencing, CL, for single gate with double barbed wire arm add		50.18	
7438	Fencing, CL, for double gate with single barbed wire arm add		25.09	
7439	Fencing, CL, for double gate with double barbed wire arm add		50.18	
7240	Fence, CL, 5' high, dbl, 30' W indl, gates, swing, galv, w/o	EA	700.40	69.47
7436	Fencing, CL, for single gate with single barbed wire arm add		26.50	
7437	Fencing, CL, for single gate with double barbed wire arm add		52.99	
7438	Fencing, CL, for double gate with single barbed wire arm add		26.50	
7439	Fencing, CL, for double gate with double barbed wire arm add		52.99	
7245	Fence, CL, 6' high, sgl, 3' W indl, gates, swing, galv, w/o	EA	138.39	12.23
7436	Fencing, CL, for single gate with single barbed wire arm add		5.37	
7437	Fencing, CL, for single gate with double barbed wire arm add		10.74	
7438	Fencing, CL, for double gate with single barbed wire arm add		5.37	
7439	Fencing, CL, for double gate with double barbed wire arm add		10.74	
7250	Fence, CL, 6' high, sgl, 4' W indl, gates, swing, galv, w/o	EA	151.15	10.77
7436	Fencing, CL, for single gate with single barbed wire arm add		6.01	
7437	Fencing, CL, for single gate with double barbed wire arm add		12.02	
7438	Fencing, CL, for double gate with single barbed wire arm add		6.01	
7439	Fencing, CL, for double gate with double barbed wire arm add		12.02	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7255	Fence, CL, 6' high, dbl, 10' W indl, gates, swing, galv, w/o	EA	369.75	26.10
7436	Fencing, CL, for single gate with single barbed wire arm add		15.00	
7437	Fencing, CL, for single gate with double barbed wire arm add		30.01	
7438	Fencing, CL, for double gate with single barbed wire arm add		15.00	
7439	Fencing, CL, for double gate with double barbed wire arm add		30.01	
7260	Fence, CL, 6' high, dbl, 12' W indl, gates, swing, galv, w/o	EA	405.27	52.93
7436	Fencing, CL, for single gate with single barbed wire arm add		16.46	
7437	Fencing, CL, for single gate with double barbed wire arm add		32.93	
7438	Fencing, CL, for double gate with single barbed wire arm add		16.46	
7439	Fencing, CL, for double gate with double barbed wire arm add		32.93	
7265	Fence, CL, 6' high, dbl, 14' W indl, gates, swing, galv, w/o	EA	462.82	41.00
7436	Fencing, CL, for single gate with single barbed wire arm add		17.90	
7437	Fencing, CL, for single gate with double barbed wire arm add		35.79	
7438	Fencing, CL, for double gate with single barbed wire arm add		17.90	
7439	Fencing, CL, for double gate with double barbed wire arm add		35.79	
7270	Fence, CL, 6' high, dbl, 16' W indl, gates, swing, galv, w/o	EA	501.61	44.79
7436	Fencing, CL, for single gate with single barbed wire arm add		19.40	
7437	Fencing, CL, for single gate with double barbed wire arm add		38.80	
7438	Fencing, CL, for double gate with single barbed wire arm add		19.40	
7439	Fencing, CL, for double gate with double barbed wire arm add		38.80	
7272	Fence, CL, 6' high, dbl, 18' W indl, gates, swing, galv, w/o	EA	520.93	45.05
7436	Fencing, CL, for single gate with single barbed wire arm add		19.85	
7437	Fencing, CL, for single gate with double barbed wire arm add		39.70	
7438	Fencing, CL, for double gate with single barbed wire arm add		19.85	
7439	Fencing, CL, for double gate with double barbed wire arm add		39.70	
7275	Fence, CL, 6' high, dbl, 20' W indl, gates, swing, galv, w/o	EA	557.31	51.06
7436	Fencing, CL, for single gate with single barbed wire arm add		21.05	
7437	Fencing, CL, for single gate with double barbed wire arm add		42.09	
7438	Fencing, CL, for double gate with single barbed wire arm add		21.05	
7439	Fencing, CL, for double gate with double barbed wire arm add		42.09	
7280	Fence, CL, 6' high, dbl, 22' W indl, gates, swing, galv, w/o	EA	587.37	53.78
7436	Fencing, CL, for single gate with single barbed wire arm add		22.55	
7437	Fencing, CL, for single gate with double barbed wire arm add		45.10	
7438	Fencing, CL, for double gate with single barbed wire arm add		22.55	
7439	Fencing, CL, for double gate with double barbed wire arm add		45.10	
7285	Fence, CL, 6' high, dbl, 24' W indl, gates, swing, galv, w/o	EA	635.42	58.90
7436	Fencing, CL, for single gate with single barbed wire arm add		24.19	
7437	Fencing, CL, for single gate with double barbed wire arm add		48.39	
7438	Fencing, CL, for double gate with single barbed wire arm add		24.19	
7439	Fencing, CL, for double gate with double barbed wire arm add		48.39	
7290	Fence, CL, 6' high, dbl, 26' W indl, gates, swing, galv, w/o	EA	683.18	64.78
7436	Fencing, CL, for single gate with single barbed wire arm add		25.64	
7437	Fencing, CL, for single gate with double barbed wire arm add		51.27	
7438	Fencing, CL, for double gate with single barbed wire arm add		25.64	
7439	Fencing, CL, for double gate with double barbed wire arm add		51.27	
7295	Fence, CL, 6' high, dbl, 28' W indl, gates, swing, galv, w/o	EA	731.05	71.69
7436	Fencing, CL, for single gate with single barbed wire arm add		26.81	
7437	Fencing, CL, for single gate with double barbed wire arm add		53.62	
7438	Fencing, CL, for double gate with single barbed wire arm add		26.81	
7439	Fencing, CL, for double gate with double barbed wire arm add		53.62	
7305	Fence, CL, 6' high, dbl, 30' W indl, gates, swing, galv, w/o	EA	789.15	81.57
7436	Fencing, CL, for single gate with single barbed wire arm add		28.09	
7437	Fencing, CL, for single gate with double barbed wire arm add		56.19	
7438	Fencing, CL, for double gate with single barbed wire arm add		28.09	
7439	Fencing, CL, for double gate with double barbed wire arm add		56.19	
7310	Fence, CL, 7' high, sgl, 3' W indl, gates, swing, galv, w/o	EA	148.84	15.99
7436	Fencing, CL, for single gate with single barbed wire arm add		5.77	
7437	Fencing, CL, for single gate with double barbed wire arm add		11.54	
7438	Fencing, CL, for double gate with single barbed wire arm add		5.77	
7439	Fencing, CL, for double gate with double barbed wire arm add		11.54	
7315	Fence, CL, 7' high, sgl, 4' W indl, gates, swing, galv, w/o	EA	154.99	14.88
7436	Fencing, CL, for single gate with single barbed wire arm add		6.08	
7437	Fencing, CL, for single gate with double barbed wire arm add		12.15	
7438	Fencing, CL, for double gate with single barbed wire arm add		6.08	
7439	Fencing, CL, for double gate with double barbed wire arm add		12.15	
7320	Fence, CL, 7' high, dbl, 10' W indl, gates, swing, galv, w/o	EA	398.91	28.57
7436	Fencing, CL, for single gate with single barbed wire arm add		16.14	
7437	Fencing, CL, for single gate with double barbed wire arm add		32.29	
7438	Fencing, CL, for double gate with single barbed wire arm add		16.14	
7439	Fencing, CL, for double gate with double barbed wire arm add		32.29	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7325	Fence, CL, 7' high, dbl, 12'W indl, gates, swing, galv, w/o	EA	453.96	42.32
7436	Fencing, CL, for single gate with single barbed wire arm add		17.45	
7437	Fencing, CL, for single gate with double barbed wire arm add		34.91	
7438	Fencing, CL, for double gate with single barbed wire arm add		17.45	
7439	Fencing, CL, for double gate with double barbed wire arm add		34.91	
7330	Fence, CL, 7' high, dbl, 14'W indl, gates, swing, galv, w/o	EA	494.03	43.98
7436	Fencing, CL, for single gate with single barbed wire arm add		19.02	
7437	Fencing, CL, for single gate with double barbed wire arm add		38.04	
7438	Fencing, CL, for double gate with single barbed wire arm add		19.02	
7439	Fencing, CL, for double gate with double barbed wire arm add		38.04	
7335	Fence, CL, 7' high, dbl, 16'W indl, gates, swing, galv, w/o	EA	535.34	48.24
7436	Fencing, CL, for single gate with single barbed wire arm add		20.57	
7437	Fencing, CL, for single gate with double barbed wire arm add		41.14	
7438	Fencing, CL, for double gate with single barbed wire arm add		20.57	
7439	Fencing, CL, for double gate with double barbed wire arm add		41.14	
7340	Fence, CL, 7' high, dbl, 18'W indl, gates, swing, galv, w/o	EA	564.04	49.52
7436	Fencing, CL, for single gate with single barbed wire arm add		21.38	
7437	Fencing, CL, for single gate with double barbed wire arm add		42.77	
7438	Fencing, CL, for double gate with single barbed wire arm add		21.38	
7439	Fencing, CL, for double gate with double barbed wire arm add		42.77	
7345	Fence, CL, 7' high, dbl, 20'W indl, gates, swing, galv, w/o	EA	588.21	55.79
7436	Fencing, CL, for single gate with single barbed wire arm add		22.59	
7437	Fencing, CL, for single gate with double barbed wire arm add		45.18	
7438	Fencing, CL, for double gate with single barbed wire arm add		22.59	
7439	Fencing, CL, for double gate with double barbed wire arm add		45.18	
7350	Fence, CL, 7' high, dbl, 22'W indl, gates, swing, galv, w/o	EA	637.85	60.86
7436	Fencing, CL, for single gate with single barbed wire arm add		24.32	
7437	Fencing, CL, for single gate with double barbed wire arm add		48.63	
7438	Fencing, CL, for double gate with single barbed wire arm add		24.32	
7439	Fencing, CL, for double gate with double barbed wire arm add		48.63	
7355	Fence, CL, 7' high, dbl, 24'W indl, gates, swing, galv, w/o	EA	689.68	66.99
7436	Fencing, CL, for single gate with single barbed wire arm add		25.96	
7437	Fencing, CL, for single gate with double barbed wire arm add		51.92	
7438	Fencing, CL, for double gate with single barbed wire arm add		25.96	
7439	Fencing, CL, for double gate with double barbed wire arm add		51.92	
7360	Fence, CL, 7' high, dbl, 26'W indl, gates, swing, galv, w/o	EA	743.81	74.46
7436	Fencing, CL, for single gate with single barbed wire arm add		27.45	
7437	Fencing, CL, for single gate with double barbed wire arm add		54.90	
7438	Fencing, CL, for double gate with single barbed wire arm add		27.45	
7439	Fencing, CL, for double gate with double barbed wire arm add		54.90	
7365	Fence, CL, 7' high, dbl, 28'W indl, gates, swing, galv, w/o	EA	802.73	84.30
7436	Fencing, CL, for single gate with single barbed wire arm add		28.77	
7437	Fencing, CL, for single gate with double barbed wire arm add		57.54	
7438	Fencing, CL, for double gate with single barbed wire arm add		28.77	
7439	Fencing, CL, for double gate with double barbed wire arm add		57.54	
7370	Fence, CL, 7' high, dbl, 30'W indl, gates, swing, galv, w/o	EA	875.07	98.32
7436	Fencing, CL, for single gate with single barbed wire arm add		30.12	
7437	Fencing, CL, for single gate with double barbed wire arm add		60.23	
7438	Fencing, CL, for double gate with single barbed wire arm add		30.12	
7439	Fencing, CL, for double gate with double barbed wire arm add		60.23	
7375	Fence, CL, 8' high, sgl, 3' W indl, gates, swing, galv, w/o	EA	159.74	14.46
7436	Fencing, CL, for single gate with single barbed wire arm add		6.17	
7437	Fencing, CL, for single gate with double barbed wire arm add		12.34	
7438	Fencing, CL, for double gate with single barbed wire arm add		6.17	
7439	Fencing, CL, for double gate with double barbed wire arm add		12.34	
7380	Fence, CL, 8' high, sgl, 4' W indl, gates, swing, galv, w/o	EA	173.69	16.24
7436	Fencing, CL, for single gate with single barbed wire arm add		6.87	
7437	Fencing, CL, for single gate with double barbed wire arm add		13.73	
7438	Fencing, CL, for double gate with single barbed wire arm add		6.87	
7439	Fencing, CL, for double gate with double barbed wire arm add		13.73	
7385	Fence, CL, 8' high, dbl, 10'W indl, gates, swing, galv, w/o	EA	440.42	39.98
7436	Fencing, CL, for single gate with single barbed wire arm add		16.78	
7437	Fencing, CL, for single gate with double barbed wire arm add		33.55	
7438	Fencing, CL, for double gate with single barbed wire arm add		16.78	
7439	Fencing, CL, for double gate with double barbed wire arm add		33.55	
7390	Fence, CL, 8' high, dbl, 12'W indl, gates, swing, galv, w/o	EA	482.49	40.96
7436	Fencing, CL, for single gate with single barbed wire arm add		18.44	
7437	Fencing, CL, for single gate with double barbed wire arm add		36.88	
7438	Fencing, CL, for double gate with single barbed wire arm add		18.44	
7439	Fencing, CL, for double gate with double barbed wire arm add		36.88	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7395	Fence, CL, 8' high, dbl, 14' W indl, gates, swing, galv, w/o	EA	525.78	47.95
7436	Fencing, CL, for single gate with single barbed wire arm add		20.09	
7437	Fencing, CL, for single gate with double barbed wire arm add		40.18	
7438	Fencing, CL, for double gate with single barbed wire arm add		20.09	
7439	Fencing, CL, for double gate with double barbed wire arm add		40.18	
7400	Fence, CL, 8' high, dbl, 16' W indl, gates, swing, galv, w/o	EA	605.58	58.00
7436	Fencing, CL, for single gate with single barbed wire arm add		23.46	
7437	Fencing, CL, for single gate with double barbed wire arm add		46.92	
7438	Fencing, CL, for double gate with single barbed wire arm add		23.46	
7439	Fencing, CL, for double gate with double barbed wire arm add		46.92	
7405	Fence, CL, 8' high, dbl, 18' W indl, gates, swing, galv, w/o	EA	643.41	60.69
7436	Fencing, CL, for single gate with single barbed wire arm add		25.35	
7437	Fencing, CL, for single gate with double barbed wire arm add		50.70	
7438	Fencing, CL, for double gate with single barbed wire arm add		25.35	
7439	Fencing, CL, for double gate with double barbed wire arm add		50.70	
7410	Fence, CL, 8' high, dbl, 20' W indl, gates, swing, galv, w/o	EA	693.04	67.21
7436	Fencing, CL, for single gate with single barbed wire arm add		27.08	
7437	Fencing, CL, for single gate with double barbed wire arm add		54.15	
7438	Fencing, CL, for double gate with single barbed wire arm add		27.08	
7439	Fencing, CL, for double gate with double barbed wire arm add		54.15	
7415	Fence, CL, 8' high, dbl, 22' W indl, gates, swing, galv, w/o	EA	753.88	74.07
7436	Fencing, CL, for single gate with single barbed wire arm add		29.17	
7437	Fencing, CL, for single gate with double barbed wire arm add		58.34	
7438	Fencing, CL, for double gate with single barbed wire arm add		29.17	
7439	Fencing, CL, for double gate with double barbed wire arm add		58.34	
7420	Fence, CL, 8' high, dbl, 24' W indl, gates, swing, galv, w/o	EA	781.18	78.55
7436	Fencing, CL, for single gate with single barbed wire arm add		29.32	
7437	Fencing, CL, for single gate with double barbed wire arm add		58.64	
7438	Fencing, CL, for double gate with single barbed wire arm add		29.32	
7439	Fencing, CL, for double gate with double barbed wire arm add		58.64	
7425	Fence, CL, 8' high, dbl, 26' W indl, gates, swing, galv, w/o	EA	882.84	93.04
7436	Fencing, CL, for single gate with single barbed wire arm add		32.78	
7437	Fencing, CL, for single gate with double barbed wire arm add		65.55	
7438	Fencing, CL, for double gate with single barbed wire arm add		32.78	
7439	Fencing, CL, for double gate with double barbed wire arm add		65.55	
7430	Fence, CL, 8' high, dbl, 28' W indl, gates, swing, galv, w/o	EA	991.59	111.79
7436	Fencing, CL, for single gate with single barbed wire arm add		35.94	
7437	Fencing, CL, for single gate with double barbed wire arm add		71.88	
7438	Fencing, CL, for double gate with single barbed wire arm add		35.94	
7439	Fencing, CL, for double gate with double barbed wire arm add		71.88	
7435	Fence, CL, 8' high, dbl, 30' W indl, gates, swing, galv, w/o	EA	1,068.09	129.60
7436	Fencing, CL, for single gate with single barbed wire arm add		36.36	
7437	Fencing, CL, for single gate with double barbed wire arm add		72.71	
7438	Fencing, CL, for double gate with single barbed wire arm add		36.36	
7439	Fencing, CL, for double gate with double barbed wire arm add		72.71	
02831 7439	Vinyl coated			
Note: Costs Include 2-1/2 In O. D. Line Posts Every 10 Ft With 3 In O. D. Pull Post Every 100 Ft, 1 In 9 Gauge Fabric And 3 Strands Of Barb Wire. Costs Do Not Include Drilling Of Post Holes				
7440	Fence, CL, sgl, 3' W 4' high, indl, gates, swing, vinyl ctd,	EA	202.11	13.38
7766	Fencing, CL, for single gate with single barbed wire arm add		8.71	
7767	Fencing, CL, for single gate with double barbed wire arm add		17.42	
7768	Fencing, CL, for double gate with single barbed wire arm add		8.71	
7769	Fencing, CL, for double gate with double barbed wire arm add		17.42	
7445	Fence, CL, sgl, 4' W 4' high, indl, gates, swing, vinyl ctd,	EA	231.01	14.71
7766	Fencing, CL, for single gate with single barbed wire arm add		10.16	
7767	Fencing, CL, for single gate with double barbed wire arm add		20.31	
7768	Fencing, CL, for double gate with single barbed wire arm add		10.16	
7769	Fencing, CL, for double gate with double barbed wire arm add		20.31	
7450	Fence, CL, dbl, 10' W 4' high, indl, gates, swing, vinyl ctd,	EA	499.12	24.95
7766	Fencing, CL, for single gate with single barbed wire arm add		21.97	
7767	Fencing, CL, for single gate with double barbed wire arm add		43.94	
7768	Fencing, CL, for double gate with single barbed wire arm add		21.97	
7769	Fencing, CL, for double gate with double barbed wire arm add		43.94	
7455	Fence, CL, dbl, 12' W 4' high, indl, gates, swing, vinyl ctd,	EA	544.56	24.77
7766	Fencing, CL, for single gate with single barbed wire arm add		24.01	
7767	Fencing, CL, for single gate with double barbed wire arm add		48.02	
7768	Fencing, CL, for double gate with single barbed wire arm add		24.01	
7769	Fencing, CL, for double gate with double barbed wire arm add		48.02	
7460	Fence, CL, dbl, 14' W 4' high, indl, gates, swing, vinyl ctd,	EA	582.53	24.53

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7766	Fencing, CL, for single gate with single barbed wire arm add		25.64	
7767	Fencing, CL, for single gate with double barbed wire arm add		51.29	
7768	Fencing, CL, for double gate with single barbed wire arm add		25.64	
7769	Fencing, CL, for double gate with double barbed wire arm add		51.29	
7465	Fence, CL, dbl, 16' W 4' high, indl, gates, swing, vinyl ctd,	EA	623.07	25.12
7766	Fencing, CL, for single gate with single barbed wire arm add		27.35	
7767	Fencing, CL, for single gate with double barbed wire arm add		54.71	
7768	Fencing, CL, for double gate with single barbed wire arm add		27.35	
7769	Fencing, CL, for double gate with double barbed wire arm add		54.71	
7470	Fence, CL, dbl, 18' W 4' high, indl, gates, swing, vinyl ctd,	EA	714.48	34.10
7766	Fencing, CL, for single gate with single barbed wire arm add		30.85	
7767	Fencing, CL, for single gate with double barbed wire arm add		61.71	
7768	Fencing, CL, for double gate with single barbed wire arm add		30.85	
7769	Fencing, CL, for double gate with double barbed wire arm add		61.71	
7475	Fence, CL, dbl, 20' W 4' high, indl, gates, swing, vinyl ctd,	EA	779.78	36.27
7766	Fencing, CL, for single gate with single barbed wire arm add		33.74	
7767	Fencing, CL, for single gate with double barbed wire arm add		67.49	
7768	Fencing, CL, for double gate with single barbed wire arm add		33.74	
7769	Fencing, CL, for double gate with double barbed wire arm add		67.49	
7480	Fence, CL, dbl, 22' W 4' high, indl, gates, swing, vinyl ctd,	EA	806.82	37.12
7766	Fencing, CL, for single gate with single barbed wire arm add		34.66	
7767	Fencing, CL, for single gate with double barbed wire arm add		69.32	
7768	Fencing, CL, for double gate with single barbed wire arm add		34.66	
7769	Fencing, CL, for double gate with double barbed wire arm add		69.32	
7485	Fence, CL, dbl, 24' W 4' high, indl, gates, swing, vinyl ctd,	EA	922.96	42.19
7766	Fencing, CL, for single gate with single barbed wire arm add		39.95	
7767	Fencing, CL, for single gate with double barbed wire arm add		79.90	
7768	Fencing, CL, for double gate with single barbed wire arm add		39.95	
7769	Fencing, CL, for double gate with double barbed wire arm add		79.90	
7490	Fence, CL, dbl, 26' W 4' high, indl, gates, swing, vinyl ctd,	EA	970.63	44.54
7766	Fencing, CL, for single gate with single barbed wire arm add		41.71	
7767	Fencing, CL, for single gate with double barbed wire arm add		83.43	
7768	Fencing, CL, for double gate with single barbed wire arm add		41.71	
7769	Fencing, CL, for double gate with double barbed wire arm add		83.43	
7500	Fence, CL, dbl, 28' W 4' high, indl, gates, swing, vinyl ctd,	EA	1,009.08	47.01
7766	Fencing, CL, for single gate with single barbed wire arm add		43.64	
7767	Fencing, CL, for single gate with double barbed wire arm add		87.27	
7768	Fencing, CL, for double gate with single barbed wire arm add		43.64	
7769	Fencing, CL, for double gate with double barbed wire arm add		87.27	
7505	Fence, CL, dbl, 30' W 4' high, indl, gates, swing, vinyl ctd,	EA	1,067.74	51.27
7766	Fencing, CL, for single gate with single barbed wire arm add		45.81	
7767	Fencing, CL, for single gate with double barbed wire arm add		91.62	
7768	Fencing, CL, for double gate with single barbed wire arm add		45.81	
7769	Fencing, CL, for double gate with double barbed wire arm add		91.62	
7510	Fence, CL, sgl, 3' W 5' high, indl, gates, swing, vinyl ctd,	EA	218.17	13.62
7766	Fencing, CL, for single gate with single barbed wire arm add		9.47	
7767	Fencing, CL, for single gate with double barbed wire arm add		18.93	
7768	Fencing, CL, for double gate with single barbed wire arm add		9.47	
7769	Fencing, CL, for double gate with double barbed wire arm add		18.93	
7515	Fence, CL, sgl, 4' W 5' high, indl, gates, swing, vinyl ctd,	EA	245.49	15.26
7766	Fencing, CL, for single gate with single barbed wire arm add		10.83	
7767	Fencing, CL, for single gate with double barbed wire arm add		21.67	
7768	Fencing, CL, for double gate with single barbed wire arm add		10.83	
7769	Fencing, CL, for double gate with double barbed wire arm add		21.67	
7520	Fence, CL, dbl, 10' W 5' high, indl, gates, swing, vinyl ctd,	EA	547.47	26.73
7766	Fencing, CL, for single gate with single barbed wire arm add		24.16	
7767	Fencing, CL, for single gate with double barbed wire arm add		48.31	
7768	Fencing, CL, for double gate with single barbed wire arm add		24.16	
7769	Fencing, CL, for double gate with double barbed wire arm add		48.31	
7525	Fence, CL, dbl, 12' W 5' high, indl, gates, swing, vinyl ctd,	EA	599.23	26.48
7766	Fencing, CL, for single gate with single barbed wire arm add		26.48	
7767	Fencing, CL, for single gate with double barbed wire arm add		52.96	
7768	Fencing, CL, for double gate with single barbed wire arm add		26.48	
7769	Fencing, CL, for double gate with double barbed wire arm add		52.96	
7530	Fence, CL, dbl, 14' W 5' high, indl, gates, swing, vinyl ctd,	EA	706.11	26.76
7766	Fencing, CL, for single gate with single barbed wire arm add		29.11	
7767	Fencing, CL, for single gate with double barbed wire arm add		58.21	
7768	Fencing, CL, for double gate with single barbed wire arm add		29.11	
7769	Fencing, CL, for double gate with double barbed wire arm add		58.21	
7535	Fence, CL, dbl, 16' W 5' high, indl, gates, swing, vinyl ctd,	EA	732.94	35.55

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7766	Fencing, CL, for single gate with single barbed wire arm add		31.78	
7767	Fencing, CL, for single gate with double barbed wire arm add		63.55	
7768	Fencing, CL, for double gate with single barbed wire arm add		31.78	
7769	Fencing, CL, for double gate with double barbed wire arm add		63.55	
7540	Fence, CL, dbl, 18' W 5' high, indl, gates, swing, vinyl ctd,	EA	796.86	37.25
7766	Fencing, CL, for single gate with single barbed wire arm add		34.60	
7767	Fencing, CL, for single gate with double barbed wire arm add		69.20	
7768	Fencing, CL, for double gate with single barbed wire arm add		34.60	
7769	Fencing, CL, for double gate with double barbed wire arm add		69.20	
7545	Fence, CL, dbl, 20' W 5' high, indl, gates, swing, vinyl ctd,	EA	858.32	39.42
7766	Fencing, CL, for single gate with single barbed wire arm add		37.23	
7767	Fencing, CL, for single gate with double barbed wire arm add		74.47	
7768	Fencing, CL, for double gate with single barbed wire arm add		37.23	
7769	Fencing, CL, for double gate with double barbed wire arm add		74.47	
7550	Fence, CL, dbl, 22' W 5' high, indl, gates, swing, vinyl ctd,	EA	910.25	41.13
7766	Fencing, CL, for single gate with single barbed wire arm add		39.31	
7767	Fencing, CL, for single gate with double barbed wire arm add		78.63	
7768	Fencing, CL, for double gate with single barbed wire arm add		39.31	
7769	Fencing, CL, for double gate with double barbed wire arm add		78.63	
7555	Fence, CL, dbl, 24' W 5' high, indl, gates, swing, vinyl ctd,	EA	1,008.31	45.52
7766	Fencing, CL, for single gate with single barbed wire arm add		43.60	
7767	Fencing, CL, for single gate with double barbed wire arm add		87.19	
7768	Fencing, CL, for double gate with single barbed wire arm add		43.60	
7769	Fencing, CL, for double gate with double barbed wire arm add		87.19	
7560	Fence, CL, dbl, 26' W 5' high, indl, gates, swing, vinyl ctd,	EA	1,058.78	48.33
7766	Fencing, CL, for single gate with single barbed wire arm add		46.12	
7767	Fencing, CL, for single gate with double barbed wire arm add		92.24	
7768	Fencing, CL, for double gate with single barbed wire arm add		46.12	
7769	Fencing, CL, for double gate with double barbed wire arm add		92.24	
7565	Fence, CL, dbl, 28' W 5' high, indl, gates, swing, vinyl ctd,	EA	1,126.51	52.80
7766	Fencing, CL, for single gate with single barbed wire arm add		48.75	
7767	Fencing, CL, for single gate with double barbed wire arm add		97.50	
7768	Fencing, CL, for double gate with single barbed wire arm add		48.75	
7769	Fencing, CL, for double gate with double barbed wire arm add		97.50	
7570	Fence, CL, dbl, 30' W 5' high, indl, gates, swing, vinyl ctd,	EA	1,199.79	58.43
7766	Fencing, CL, for single gate with single barbed wire arm add		51.47	
7767	Fencing, CL, for single gate with double barbed wire arm add		102.93	
7768	Fencing, CL, for double gate with single barbed wire arm add		51.47	
7769	Fencing, CL, for double gate with double barbed wire arm add		102.93	
7575	Fence, CL, sgl, 3' W 6' high, indl, gates, swing, vinyl ctd,	EA	235.43	15.71
7766	Fencing, CL, for single gate with single barbed wire arm add		10.22	
7767	Fencing, CL, for single gate with double barbed wire arm add		20.45	
7768	Fencing, CL, for double gate with single barbed wire arm add		10.22	
7769	Fencing, CL, for double gate with double barbed wire arm add		20.45	
7580	Fence, CL, sgl, 4' W 6' high, indl, gates, swing, vinyl ctd,	EA	261.15	17.80
7766	Fencing, CL, for single gate with single barbed wire arm add		11.51	
7767	Fencing, CL, for single gate with double barbed wire arm add		23.02	
7768	Fencing, CL, for double gate with single barbed wire arm add		11.51	
7769	Fencing, CL, for double gate with double barbed wire arm add		23.02	
7585	Fence, CL, dbl, 10' W 6' high, indl, gates, swing, vinyl ctd,	EA	596.58	30.83
7766	Fencing, CL, for single gate with single barbed wire arm add		26.35	
7767	Fencing, CL, for single gate with double barbed wire arm add		52.69	
7768	Fencing, CL, for double gate with single barbed wire arm add		26.35	
7769	Fencing, CL, for double gate with double barbed wire arm add		52.69	
7590	Fence, CL, dbl, 12' W 6' high, indl, gates, swing, vinyl ctd,	EA	654.90	31.11
7766	Fencing, CL, for single gate with single barbed wire arm add		28.94	
7767	Fencing, CL, for single gate with double barbed wire arm add		57.89	
7768	Fencing, CL, for double gate with single barbed wire arm add		28.94	
7769	Fencing, CL, for double gate with double barbed wire arm add		57.89	
7595	Fence, CL, dbl, 14' W 6' high, indl, gates, swing, vinyl ctd,	EA	756.34	43.52
7766	Fencing, CL, for single gate with single barbed wire arm add		32.57	
7767	Fencing, CL, for single gate with double barbed wire arm add		65.14	
7768	Fencing, CL, for double gate with single barbed wire arm add		32.57	
7769	Fencing, CL, for double gate with double barbed wire arm add		65.14	
7600	Fence, CL, dbl, 16' W 6' high, indl, gates, swing, vinyl ctd,	EA	837.63	46.37
7766	Fencing, CL, for single gate with single barbed wire arm add		36.20	
7767	Fencing, CL, for single gate with double barbed wire arm add		72.40	
7768	Fencing, CL, for double gate with single barbed wire arm add		36.20	
7769	Fencing, CL, for double gate with double barbed wire arm add		72.40	
7605	Fence, CL, dbl, 18' W 6' high, indl, gates, swing, vinyl ctd,	EA	890.82	47.65

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7766	Fencing, CL, for single gate with single barbed wire arm add		38.34	
7767	Fencing, CL, for single gate with double barbed wire arm add		76.68	
7768	Fencing, CL, for double gate with single barbed wire arm add		38.34	
7769	Fencing, CL, for double gate with double barbed wire arm add		76.68	
7610	Fence, CL, dbl, 20' W 6' high, indl, gates, swing, vinyl ctd,	EA	950.85	49.95
7766	Fencing, CL, for single gate with single barbed wire arm add		40.72	
7767	Fencing, CL, for single gate with double barbed wire arm add		81.45	
7768	Fencing, CL, for double gate with single barbed wire arm add		40.72	
7769	Fencing, CL, for double gate with double barbed wire arm add		81.45	
7615	Fence, CL, dbl, 22' W 6' high, indl, gates, swing, vinyl ctd,	EA	1,015.78	53.32
7766	Fencing, CL, for single gate with single barbed wire arm add		43.97	
7767	Fencing, CL, for single gate with double barbed wire arm add		87.94	
7768	Fencing, CL, for double gate with single barbed wire arm add		43.97	
7769	Fencing, CL, for double gate with double barbed wire arm add		87.94	
7620	Fence, CL, dbl, 24, W 6' high, indl, gates, swing, vinyl ctd,	EA	1,096.38	58.43
7766	Fencing, CL, for single gate with single barbed wire arm add		47.24	
7767	Fencing, CL, for single gate with double barbed wire arm add		94.49	
7768	Fencing, CL, for double gate with single barbed wire arm add		47.24	
7769	Fencing, CL, for double gate with double barbed wire arm add		94.49	
7625	Fence, CL, dbl, 26' W 6' high, indl, gates, swing, vinyl ctd,	EA	1,181.01	64.78
7766	Fencing, CL, for single gate with single barbed wire arm add		50.53	
7767	Fencing, CL, for single gate with double barbed wire arm add		101.05	
7768	Fencing, CL, for double gate with single barbed wire arm add		50.53	
7769	Fencing, CL, for double gate with double barbed wire arm add		101.05	
7630	Fence, CL, dbl, 28' W 6' high, indl, gates, swing, vinyl ctd,	EA	1,272.09	70.36
7766	Fencing, CL, for single gate with single barbed wire arm add		53.86	
7767	Fencing, CL, for single gate with double barbed wire arm add		107.73	
7768	Fencing, CL, for double gate with single barbed wire arm add		53.86	
7769	Fencing, CL, for double gate with double barbed wire arm add		107.73	
7635	Fence, CL, dbl, 30' W 6' high, indl, gates, swing, vinyl ctd,	EA	1,369.69	81.96
7766	Fencing, CL, for single gate with single barbed wire arm add		57.12	
7767	Fencing, CL, for single gate with double barbed wire arm add		114.24	
7768	Fencing, CL, for double gate with single barbed wire arm add		57.12	
7769	Fencing, CL, for double gate with double barbed wire arm add		114.24	
7640	Fence, CL, sgl, 3' W 7' high, indl, gates, swing, vinyl ctd,	EA	247.19	14.98
7766	Fencing, CL, for single gate with single barbed wire arm add		10.69	
7767	Fencing, CL, for single gate with double barbed wire arm add		21.37	
7768	Fencing, CL, for double gate with single barbed wire arm add		10.69	
7769	Fencing, CL, for double gate with double barbed wire arm add		21.37	
7645	Fence, CL, sgl, 4' W 7' high, indl, gates, swing, vinyl ctd,	EA	270.66	17.25
7766	Fencing, CL, for single gate with single barbed wire arm add		11.86	
7767	Fencing, CL, for single gate with double barbed wire arm add		23.72	
7768	Fencing, CL, for double gate with single barbed wire arm add		11.86	
7769	Fencing, CL, for double gate with double barbed wire arm add		23.72	
7650	Fence, CL, dbl, 10' W 7' high, indl, gates, swing, vinyl ctd,	EA	650.49	32.06
7766	Fencing, CL, for single gate with single barbed wire arm add		28.72	
7767	Fencing, CL, for single gate with double barbed wire arm add		57.45	
7768	Fencing, CL, for double gate with single barbed wire arm add		28.72	
7769	Fencing, CL, for double gate with double barbed wire arm add		57.45	
7655	Fence, CL, dbl, 12' W 7' high, indl, gates, swing, vinyl ctd,	EA	696.14	44.36
7766	Fencing, CL, for single gate with single barbed wire arm add		31.59	
7767	Fencing, CL, for single gate with double barbed wire arm add		63.18	
7768	Fencing, CL, for double gate with single barbed wire arm add		31.59	
7769	Fencing, CL, for double gate with double barbed wire arm add		63.18	
7660	Fence, CL, dbl, 14' W 7' high, indl, gates, swing, vinyl ctd,	EA	824.80	45.39
7766	Fencing, CL, for single gate with single barbed wire arm add		35.56	
7767	Fencing, CL, for single gate with double barbed wire arm add		71.12	
7768	Fencing, CL, for double gate with single barbed wire arm add		35.56	
7769	Fencing, CL, for double gate with double barbed wire arm add		71.12	
7665	Fence, CL, dbl, 16' W 7' high, indl, gates, swing, vinyl ctd,	EA	913.85	48.03
7766	Fencing, CL, for single gate with single barbed wire arm add		39.49	
7767	Fencing, CL, for single gate with double barbed wire arm add		78.99	
7768	Fencing, CL, for double gate with single barbed wire arm add		39.49	
7769	Fencing, CL, for double gate with double barbed wire arm add		78.99	
7670	Fence, CL, dbl, 18' W 7' high, indl, gates, swing, vinyl ctd,	EA	972.61	49.69
7766	Fencing, CL, for single gate with single barbed wire arm add		41.81	
7767	Fencing, CL, for single gate with double barbed wire arm add		83.62	
7768	Fencing, CL, for double gate with single barbed wire arm add		41.81	
7769	Fencing, CL, for double gate with double barbed wire arm add		83.62	
7675	Fence, CL, dbl, 20' W 7' high, indl, gates, swing, vinyl ctd,	EA	1,034.81	52.38

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7766	Fencing, CL, for single gate with single barbed wire arm add		44.92	
7767	Fencing, CL, for single gate with double barbed wire arm add		89.84	
7768	Fencing, CL, for double gate with single barbed wire arm add		44.92	
7769	Fencing, CL, for double gate with double barbed wire arm add		89.84	
7680	Fence, CL, dbl, 22' W 7' high, indl, gates, swing, vinyl ctd,	EA	1,099.14	56.04
7766	Fencing, CL, for single gate with single barbed wire arm add		47.38	
7767	Fencing, CL, for single gate with double barbed wire arm add		94.76	
7768	Fencing, CL, for double gate with single barbed wire arm add		47.38	
7769	Fencing, CL, for double gate with double barbed wire arm add		94.76	
7685	Fence, CL, dbl, 24, W 7' high, indl, gates, swing, vinyl ctd,	EA	1,212.98	63.37
7766	Fencing, CL, for single gate with single barbed wire arm add		52.13	
7767	Fencing, CL, for single gate with double barbed wire arm add		104.25	
7768	Fencing, CL, for double gate with single barbed wire arm add		52.13	
7769	Fencing, CL, for double gate with double barbed wire arm add		104.25	
7690	Fence, CL, dbl, 26' W 7' high, indl, gates, swing, vinyl ctd,	EA	1,308.92	68.66
7766	Fencing, CL, for single gate with single barbed wire arm add		55.70	
7767	Fencing, CL, for single gate with double barbed wire arm add		111.41	
7768	Fencing, CL, for double gate with single barbed wire arm add		55.70	
7769	Fencing, CL, for double gate with double barbed wire arm add		111.41	
7695	Fence, CL, dbl, 28' W 7' high, indl, gates, swing, vinyl ctd,	EA	1,411.86	79.91
7766	Fencing, CL, for single gate with single barbed wire arm add		59.23	
7767	Fencing, CL, for single gate with double barbed wire arm add		118.46	
7768	Fencing, CL, for double gate with single barbed wire arm add		59.23	
7769	Fencing, CL, for double gate with double barbed wire arm add		118.46	
7700	Fence, CL, dbl, 30' W 7' high, indl, gates, swing, vinyl ctd,	EA	1,532.01	97.00
7766	Fencing, CL, for single gate with single barbed wire arm add		62.96	
7767	Fencing, CL, for single gate with double barbed wire arm add		125.93	
7768	Fencing, CL, for double gate with single barbed wire arm add		62.96	
7769	Fencing, CL, for double gate with double barbed wire arm add		125.93	
7705	Fence, CL, sgl, 3' W 8' high, indl, gates, swing, vinyl ctd,	EA	259.38	16.73
7766	Fencing, CL, for single gate with single barbed wire arm add		11.15	
7767	Fencing, CL, for single gate with double barbed wire arm add		22.30	
7768	Fencing, CL, for double gate with single barbed wire arm add		11.15	
7769	Fencing, CL, for double gate with double barbed wire arm add		22.30	
7710	Fence, CL, sgl, 4' W 8' high, indl, gates, swing, vinyl ctd,	EA	280.59	19.41
7766	Fencing, CL, for single gate with single barbed wire arm add		12.21	
7767	Fencing, CL, for single gate with double barbed wire arm add		24.42	
7768	Fencing, CL, for double gate with single barbed wire arm add		12.21	
7769	Fencing, CL, for double gate with double barbed wire arm add		24.42	
7715	Fence, CL, dbl, 10' W 8' high, indl, gates, swing, vinyl ctd,	EA	726.96	49.14
7766	Fencing, CL, for single gate with single barbed wire arm add		31.10	
7767	Fencing, CL, for single gate with double barbed wire arm add		62.21	
7768	Fencing, CL, for double gate with single barbed wire arm add		31.10	
7769	Fencing, CL, for double gate with double barbed wire arm add		62.21	
7720	Fence, CL, dbl, 12' W 8' high, indl, gates, swing, vinyl ctd,	EA	798.39	50.03
7766	Fencing, CL, for single gate with single barbed wire arm add		34.24	
7767	Fencing, CL, for single gate with double barbed wire arm add		68.47	
7768	Fencing, CL, for double gate with single barbed wire arm add		34.24	
7769	Fencing, CL, for double gate with double barbed wire arm add		68.47	
7725	Fence, CL, dbl, 14' W 8' high, indl, gates, swing, vinyl ctd,	EA	894.85	52.72
7766	Fencing, CL, for single gate with single barbed wire arm add		38.54	
7767	Fencing, CL, for single gate with double barbed wire arm add		77.09	
7768	Fencing, CL, for double gate with single barbed wire arm add		38.54	
7769	Fencing, CL, for double gate with double barbed wire arm add		77.09	
7730	Fence, CL, dbl, 16' W 8' high, indl, gates, swing, vinyl ctd,	EA	992.13	56.21
7766	Fencing, CL, for single gate with single barbed wire arm add		42.79	
7767	Fencing, CL, for single gate with double barbed wire arm add		85.58	
7768	Fencing, CL, for double gate with single barbed wire arm add		42.79	
7769	Fencing, CL, for double gate with double barbed wire arm add		85.58	
7735	Fence, CL, dbl, 18' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,042.02	57.88
7766	Fencing, CL, for single gate with single barbed wire arm add		45.28	
7767	Fencing, CL, for single gate with double barbed wire arm add		90.56	
7768	Fencing, CL, for double gate with single barbed wire arm add		45.28	
7769	Fencing, CL, for double gate with double barbed wire arm add		90.56	
7740	Fence, CL, dbl, 20' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,133.93	62.99
7766	Fencing, CL, for single gate with single barbed wire arm add		49.12	
7767	Fencing, CL, for single gate with double barbed wire arm add		98.24	
7768	Fencing, CL, for double gate with single barbed wire arm add		49.12	
7769	Fencing, CL, for double gate with double barbed wire arm add		98.24	
7745	Fence, CL, dbl, 22' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,231.77	69.55

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7766	Fencing, CL, for single gate with single barbed wire arm add		53.07	
7767	Fencing, CL, for single gate with double barbed wire arm add		106.13	
7768	Fencing, CL, for double gate with single barbed wire arm add		53.07	
7769	Fencing, CL, for double gate with double barbed wire arm add		106.13	
7750	Fence, CL, dbl, 24' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,334.99	75.22
7766	Fencing, CL, for single gate with single barbed wire arm add		57.01	
7767	Fencing, CL, for single gate with double barbed wire arm add		114.02	
7768	Fencing, CL, for double gate with single barbed wire arm add		57.01	
7769	Fencing, CL, for double gate with double barbed wire arm add		114.02	
7755	Fence, CL, dbl, 26' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,444.92	87.33
7766	Fencing, CL, for single gate with single barbed wire arm add		60.88	
7767	Fencing, CL, for single gate with double barbed wire arm add		121.76	
7768	Fencing, CL, for double gate with single barbed wire arm add		60.88	
7769	Fencing, CL, for double gate with double barbed wire arm add		121.76	
7760	Fence, CL, dbl, 28' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,564.61	105.23
7766	Fencing, CL, for single gate with single barbed wire arm add		64.59	
7767	Fencing, CL, for single gate with double barbed wire arm add		129.19	
7768	Fencing, CL, for double gate with single barbed wire arm add		64.59	
7769	Fencing, CL, for double gate with double barbed wire arm add		129.19	
7765	Fence, CL, dbl, 30' W 8' high, indl, gates, swing, vinyl ctd,	EA	1,717.04	129.26
7766	Fencing, CL, for single gate with single barbed wire arm add		68.80	
7767	Fencing, CL, for single gate with double barbed wire arm add		137.61	
7768	Fencing, CL, for double gate with single barbed wire arm add		68.80	
7769	Fencing, CL, for double gate with double barbed wire arm add		137.61	
02831 7769 Gates				
Note: Gates Includes: 2ea 5/8" Ground Tods, Clamps, Braided Strap and #6 Bare Copper Wire.				
02831 7769 Sliding				
7770	Fence, CL, indl, gates, sliding, 4' high	LF	426.13	72.10
7775	Fence, CL, indl, gates, sliding, 5' high	LF	461.61	86.18
7780	Fence, CL, indl, gates, sliding, 6' high	LF	499.51	94.89
7785	Fence, CL, indl, gates, sliding, 7' high	LF	648.56	97.08
7790	Fence, CL, indl, gates, sliding, 8' high	LF	796.50	101.59
02831 7794 Cantilever JOC				
NOTE: Dimensions Are For Size Of Opening				
7795	Fence, CL, 40' w x 8' H, indl, gates, manual, roller, (pr),	EA	3,274.00	585.80
7800	Fence, CL, 30' w x 8' H, indl, gates, manual, roller, (pr),	EA	2,941.87	585.80
7805	Fence, CL, 24' w x 8' H, indl, gates, manual, roller, (pr),	EA	2,483.67	585.80
02831 7809 Motor operators for gates				
7810	Fence, CL, 3' w swing, indl, (no wiring), gate motor	EA	1,982.52	126.33
7815	Fence, CL, up to 20' w swing, indl, (no wiring), gate motor	EA	3,923.14	135.39
7820	Fence, CL, up to 45' sliding, indl, (no wiring), gate motor	EA	3,625.07	217.78
7825	Fence, CL, overhead gate 6'-18'w, indl, (no wiring), gate	LF	108.28	2.66
02831 7829 Gate operators, digital receiver				
7830	Fence, CL, indl, gate operators, digital receiver	EA	269.85	19.27
7835	Fence, CL, indl, gate operators, two button transmitter	EA	59.94	19.27
7840	Fence, CL, indl, gate operators, 3 button station	EA	103.43	19.27
7845	Fence, CL, indl, gate operators, master slave system	EA	300.68	19.27
02832 0010 Fence, chain link, residential				
Note: See Sogs Guide For Tennis Court Fence With 2-1/2 In O. D. Line Posts Every 10 Ft, 1-5/8 In O. D. Top, Middle And Bottom Rail And A 3 In O. D. Corner Post Every 120 Ft. Price Does Not Incl. Costs For Drilling Fence Posts				
02832 0860 Tennis courts				
0900	Fence, CL, 10' H, tennis ct, 11 ga w, 2.5" post, 10' OC, 1-5/8" top r	LF	12.64	1.46
0920	Fence, CL, 12' H, tennis ct, 11 ga w, 2.5" post, 10' OC, 1-5/8" top r	LF	15.40	1.48
1250	Fence, CL, tennis ct, vinyl covered, 9 ga wire, 10' high	LF	18.34	1.37
1300	Fence, CL, tennis ct, vinyl covered, 9 ga wire, 12' high	LF	22.80	1.40
02832 1304 Gates				
1305	Fence, CL, 3' x 7' x 3', tennis ct, transom gate, single, galv	EA	201.42	23.97
1450	Fencing, CL, for a 12' high fence, add		13.78	
1310	Fence, CL, 4' x 7' x 3', tennis ct, transom gate, single, galv	EA	257.66	29.55
1450	Fencing, CL, for a 12' high fence, add		17.68	
1315	Fence, CL, 3' x 10' x 3', tennis ct, transom gate, single, galv	EA	225.92	24.15
1450	Fencing, CL, for a 12' high fence, add		14.28	
1320	Fence, CL, 4' x 10' x 3', tennis ct, transom gate, single, galv	EA	269.23	27.53
1450	Fencing, CL, for a 12' high fence, add		16.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1325	Fence, CL, 10' x 7' x 3', tennis ct, transom gate, double, galv	EA	642.81	72.03
1450	<i>Fencing, CL, for a 12' high fence, add</i>		42.29	
1330	Fence, CL, 12' x 7' x 3', tennis ct, transom gate, double, galv	EA	707.66	115.71
1450	<i>Fencing, CL, for a 12' high fence, add</i>		45.59	
1335	Fence, CL, 14' x 7' x 3', tennis ct, transom gate, double, galv	EA	837.47	140.77
1450	<i>Fencing, CL, for a 12' high fence, add</i>		56.08	
1340	Fence, CL, tennis ct, double gate, galv, 10' x 10'	EA	549.17	75.10
1450	<i>Fencing, CL, for a 12' high fence, add</i>		34.62	
1345	Fence, CL, tennis ct, double gate, galv, 12' x 10'	EA	610.04	83.15
1450	<i>Fencing, CL, for a 12' high fence, add</i>		38.25	
1350	Fence, CL, tennis ct, double gate, galv, 14' x 10'	EA	673.25	90.82
1450	<i>Fencing, CL, for a 12' high fence, add</i>		41.94	
1402	Fence, CL, 3' x 7' x 3', tennis ct, transom gate, sgl, vinyl ctd	EA	320.93	20.35
1450	<i>Fencing, CL, for a 12' high fence, add</i>		19.75	
1405	Fence, CL, 4' x 7' x 3', tennis ct, transom gate, sgl, vinyl ctd	EA	355.25	37.14
1450	<i>Fencing, CL, for a 12' high fence, add</i>		22.56	
1410	Fence, CL, 3' x 10', tennis ct, transom gate, sgl, vinyl ctd	EA	308.73	24.08
1450	<i>Fencing, CL, for a 12' high fence, add</i>		18.36	
1415	Fence, CL, 4' x 10', tennis ct, transom gate, sgl, vinyl ctd	EA	337.90	24.81
1450	<i>Fencing, CL, for a 12' high fence, add</i>		19.82	
1420	Fence, CL, 10' x 7' x 3', tennis ct, transom gate, dbl, vinyl ctd	EA	763.02	62.86
1450	<i>Fencing, CL, for a 12' high fence, add</i>		48.30	
1425	Fence, CL, 12' x 7' x 3', tennis ct, transom gate, dbl, vinyl ctd	EA	979.78	107.95
1450	<i>Fencing, CL, for a 12' high fence, add</i>		58.73	
1430	Fence, CL, 14' x 7' x 3', tennis ct, transom gate, dbl, vinyl ctd	EA	1,226.91	164.98
1450	<i>Fencing, CL, for a 12' high fence, add</i>		76.57	
1435	Fence, CL, tennis ct, double gate, vinyl coated, 10' x 10'	EA	919.81	91.63
1450	<i>Fencing, CL, for a 12' high fence, add</i>		59.63	
1440	Fence, CL, tennis ct, double gate, vinyl coated, 12' x 10'	EA	878.42	94.07
1450	<i>Fencing, CL, for a 12' high fence, add</i>		51.60	
1445	Fence, CL, tennis ct, double gate, vinyl coated, 14' x 10'	EA	973.44	100.15
1450	<i>Fencing, CL, for a 12' high fence, add</i>		56.95	

02834 0009 Fence, miscellaneous metal

Note: Costs Include 2-1/2 In 0. D. Line Posts Every 10 Ft With 3 In 0. D. Pull Post Every 100 Ft, 1 In 9 Gauge Fabric And 3 Strands Of Barb Wire. Costs Do Not Include Drilling Of Post Holes (See Csi 02711/1101 To 1202)

02834 0009 Chicken wire mesh fence

0010	Fence, misc metal, 4' high, posts @ 4', 1" mesh, chicken	LF	3.89	0.49
0020	2" (5.1cm) Mesh, 6'H Chicken Wire Posts at 4' (1.2M)	LF	4.25	0.55

02834 4609 Security fence

Note: Includes: Corner Posts, Bracing, Grounding @100'-0" Intervals, Post Holes, Concrete, For Complete Installation & 3 Strands Barbed Wire. Does Not Include: Gates, Signs, Or Other Special Appurtenances. Note about FE fencing. FE-5 is a 5' minimum height fence with no barbed wire. FE-6 is a 7' minimum height fence with 1 arm and three strands of barbed wire. FE-7 is a 7' minimum height fence with a double arm and three strands of barbed wire per arm

4610	Fence, misc metal, security, std FE-5, No Barbed Wire	LF	19.45	0.60
4620	Fence, misc metal, security, std FE-6, 1Arm 3Strands Barbed Wr	LF	20.62	0.70
4630	Fence, misc metal, security, std FE-7, 2Arms 6Strands Barbed Wr	LF	27.56	0.77
4650	Fence, scty, galv, 10' H, 2.5"line post@10', 3"pull post@100', 9ga,	LF	27.53	2.09
4651	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		6.26	
4655	Fence, scty, galv, 12' H, 2.5"line post@10', 3"pull post@100', 9ga,	LF	30.57	2.26
4656	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		6.83	
4660	Fence, scty, galv, 16' H, 2.5"line post@10', 3"pull post@100', 9ga,	LF	49.03	2.05
4661	<i>Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add</i>		4.00	
4662	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		9.68	
4665	Fence, misc metal, 10' high, galv, corner post, security	EA	120.93	2.65
4670	Fence, misc metal, 12' high, galv, corner post, security	EA	133.38	4.81
4675	Fence, misc metal, 16' high, galv, corner post, security	EA	229.31	7.39
4680	Fence, misc metal, 10' high, galv, end post, security	EA	99.66	3.03
4685	Fence, misc metal, 12' high, galv, end post, security	EA	111.71	3.90
4690	Fence, misc metal, 16' high, galv, end post, security	EA	204.61	5.64
4700	Fence, scty, vnyl ctd, 10' H, 2.5"linepost@10',	LF	35.57	2.00
4701	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		7.47	
4705	Fence, scty, vnyl ctd, 12' H, 2.5"linepost@10',	LF	39.94	2.17
4706	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		8.24	
4710	Fence, scty, vnyl ctd, 16' H, 2.5"linepost@10',	LF	70.05	2.00
4711	<i>Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add</i>		5.05	
4712	<i>Fencing, CL, for V-barb fitting & 6 strands of barb wire, add</i>		12.83	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4715	Fence, misc metal, corner post, 10' H, security, vinyl coated	EA	198.40	2.82
4720	Fence, misc metal, corner post, 12' H, security, vinyl coated	EA	219.61	5.36
4725	Fence, misc metal, corner post, 16' H, security, vinyl coated	EA	380.61	8.43
4730	Fence, misc metal, end post, 10' high, security, vinyl coated	EA	148.05	3.07
4735	Fence, misc metal, end post, 12' high, security, vinyl coated	EA	166.20	4.04
4740	Fence, misc metal, end post, 16' high, security, vinyl coated	EA	318.32	5.96
02834 4749 Gates				
4750	Fence, met, 3' x7' x3', transom for 10' fence, galv, sgl, gate, w/3 barb	EA	220.67	25.37
4801	Fencing, CL, for gates for a 12' high fence, add		42.53	
4802	Fencing, CL, for gates for a 16' high fence, add		127.58	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		12.64	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		35.51	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		23.68	
4752	Fence, met, 4' x7' x3', transom for 10' fence, galv, sgl, gate, w/3 barb	EA	297.97	35.05
4801	Fencing, CL, for gates for a 12' high fence, add		51.23	
4802	Fencing, CL, for gates for a 16' high fence, add		153.70	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		23.26	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		57.24	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		38.16	
4754	Fence, met, 3' x 10', transom for 10' fence, galv, sgl, gate, w/3 barb	EA	311.27	25.89
4801	Fencing, CL, for gates for a 12' high fence, add		51.80	
4802	Fencing, CL, for gates for a 16' high fence, add		155.40	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		26.02	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		62.37	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		41.58	
4756	Fence, met, 4' x 10', transom for 10' fence, galv, sgl, gate, w/3 barb	EA	315.32	27.35
4801	Fencing, CL, for gates for a 12' high fence, add		54.70	
4802	Fencing, CL, for gates for a 16' high fence, add		164.11	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		24.13	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		59.84	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		39.89	
4758	Fence, met, 10' x7' x3', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	509.48	40.57
4801	Fencing, CL, for gates for a 12' high fence, add		88.26	
4802	Fencing, CL, for gates for a 16' high fence, add		264.77	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		39.11	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		96.88	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		64.59	
4760	Fence, met, 12' x7' x3', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	631.29	77.86
4801	Fencing, CL, for gates for a 12' high fence, add		103.53	
4802	Fencing, CL, for gates for a 16' high fence, add		310.58	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		54.29	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		128.79	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		85.86	
4762	Fence, met, 14' x7' x3', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	720.17	93.85
4801	Fencing, CL, for gates for a 12' high fence, add		116.76	
4802	Fencing, CL, for gates for a 16' high fence, add		350.27	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		63.28	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		148.94	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		99.29	
4764	Fence, met, 10' x 10', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	814.34	56.26
4801	Fencing, CL, for gates for a 12' high fence, add		128.77	
4802	Fencing, CL, for gates for a 16' high fence, add		386.32	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		74.81	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		173.29	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		115.53	
4766	Fence, met, 12' x 10', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	703.74	60.18
4801	Fencing, CL, for gates for a 12' high fence, add		121.27	
4802	Fencing, CL, for gates for a 16' high fence, add		363.80	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		54.67	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		134.79	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		89.86	
4768	Fence, met, 14' x 10', transom for 10' fence, galv, dbl, gate, w/3 barb	EA	739.82	63.20
4801	Fencing, CL, for gates for a 12' high fence, add		128.48	
4802	Fencing, CL, for gates for a 16' high fence, add		385.44	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		56.47	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		140.20	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		93.47	
4780	Fence, met, 3' x7' x3', transom for 10' fence, vinyl, sgl, gate, w/3	EA	536.91	7.16
4801	Fencing, CL, for gates for a 12' high fence, add		84.65	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4802	Fencing, CL, for gates for a 16' high fence, add		253.96	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		49.58	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		114.63	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		76.42	
4782	Fence, met, 4' x7' x3', transom for 10' fence, vinyl, sgl, gate, w/3	EA	462.44	8.86
4801	Fencing, CL, for gates for a 12' high fence, add		78.85	
4802	Fencing, CL, for gates for a 16' high fence, add		236.55	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		36.76	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		89.82	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		59.88	
4784	Fence, met, 3' x10', transom for 10' fence, vinyl, sgl, gate, w/3 barb	EA	483.91	7.59
4801	Fencing, CL, for gates for a 12' high fence, add		79.74	
4802	Fencing, CL, for gates for a 16' high fence, add		239.21	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		41.24	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		98.16	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		65.44	
4786	Fence, met, 4' x10', transom for 10' fence, vinyl, sgl, gate, w/3 barb	EA	492.18	7.84
4801	Fencing, CL, for gates for a 12' high fence, add		84.80	
4802	Fencing, CL, for gates for a 16' high fence, add		254.39	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		38.25	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		94.28	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		62.86	
4788	Fence, met, 10' x7' x3', transom for 10' fence, vinyl, dbl, gate, w/3	EA	831.23	43.94
4801	Fencing, CL, for gates for a 12' high fence, add		152.61	
4802	Fencing, CL, for gates for a 16' high fence, add		457.82	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		55.20	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		145.14	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		96.76	
4790	Fence, met, 12' x7' x3', transom for 10' fence, vinyl, dbl, gate, w/3	EA	982.15	81.83
4801	Fencing, CL, for gates for a 12' high fence, add		173.70	
4802	Fencing, CL, for gates for a 16' high fence, add		521.10	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		71.84	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		181.42	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		120.95	
4792	Fence, met, 14' x7' x3', transom for 10' fence, vinyl, dbl, gate, w/3	EA	1,120.25	93.46
4801	Fencing, CL, for gates for a 12' high fence, add		196.77	
4802	Fencing, CL, for gates for a 16' high fence, add		590.32	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		83.29	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		208.95	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		139.30	
4794	Fence, met, 10' x10', transom for 10' fence, vinyl, dbl, gate, w/3	EA	1,090.36	39.46
4801	Fencing, CL, for gates for a 12' high fence, add		183.98	
4802	Fencing, CL, for gates for a 16' high fence, add		551.93	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		88.61	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		214.70	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		143.13	
4796	Fence, met, 12' x12', transom for 10' fence, vinyl, dbl, gate, w/3	EA	1,002.68	45.39
4801	Fencing, CL, for gates for a 12' high fence, add		181.05	
4802	Fencing, CL, for gates for a 16' high fence, add		543.16	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		69.62	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		179.63	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		119.75	
4798	Fence, met, 14' x14', transom for 10' fence, vinyl, dbl, gate, w/3	EA	1,061.79	55.36
4801	Fencing, CL, for gates for a 12' high fence, add		192.88	
4802	Fencing, CL, for gates for a 16' high fence, add		578.63	
4803	Fencing, CL, for sgl barb fitting & 3 strands of barb wire, add		72.57	
4804	Fencing, CL, for V-barb fitting & 6 strands of barb wire, add		188.49	
4805	Fencing, CL, for V-barb fitting & 3 strands of barb wire, add		125.66	
02834 4799	Snow fence			
5000	Fence, misc metal, snow fence on steel posts 10' OC, 4' high	LF	3.01	0.63
02834 6999	Barbed wire fence post			
Note: (Based On Post At 10 Ft Ctrs., 2 Corner Post And 2 Pull Post Per 300 Lf)				
7000	Fence, misc metal, barbed wire fence post, galv, in conc	EA	28.18	1.01
7031	Fencing, CL, for corner, end, & pull post bracing, add		5.06	
7010	Fence, misc metal, barbed wire fence post, galv, in rock	EA	27.56	1.01
7031	Fencing, CL, for corner, end, & pull post bracing, add		4.96	
7020	Fence, misc metal, in conc, barbed wire fence post, vinyl	EA	30.30	0.77
7031	Fencing, CL, for corner, end, & pull post bracing, add		5.48	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7030	Fence, misc metal, in rock, barbed wire fence post, vinyl	EA	29.68	0.77
7031	<i>Fencing, CL, for corner, end, & pull post bracing, add</i>		5.39	
7040	Fence, misc metal, per strand, barbed wire, galv	LF	0.34	0.14
7050	Fence, misc metal, per strand, barbed wire, vinyl coated	LF	0.41	0.18
7060	Fence, misc metal, barbed wire fence post, std 3-wire fence	LF	4.61	0.73
02836 0010	Fence, wood			
02836 0010	Basket weave			
0050	Fence, wood, No. 1 cedar, 6' H, basket weave, 4" x 4" posts	LF	10.68	0.40
0070	Fence, treated pine, 6' H, basket weave, 4" x 4" posts, 3/8" x 4"	LF	13.29	1.03
02836 0200	Board fence			
0220	Fence, 1"x4" bds, 2-2" x 4" r, 4" x 4" post, 3' H, wood, treated,	LF	9.82	0.91
0240	Fence, 1"x4" bds, 2-2" x 4" r, 4" x 4" post, 4' H, wood, treated,	LF	10.80	0.94
0260	Fence, 1"x4" bds, 3-2" x 4" r, 4" x 4" post, 5' H, wood, treated,	LF	11.75	0.97
0300	Fence, 1"x4" bds, 3-2" x 4" r, 4" x 4" post, 6' H, wood, treated,	LF	12.97	1.00
0320	Fence, 1"x4" bds, 2-2"x4" r, 4"x4" post, 3' H, wood, No. 2 west	LF	10.38	0.94
0340	Fence, 1"x4" bds, 2-2"x4" r, 4"x4" post, 4' H, wood, No. 2 west	LF	11.76	1.03
0360	Fence, 1"x4" bds, 3-2"x4" r, 4"x4" post, 5' H, wood, No. 2 west	LF	12.86	1.06
0400	Fence, 1"x4" bds, 3-2"x4" r, 4"x4" post, 6' H, wood, No. 2 west	LF	14.22	1.06
0420	Fence, 1"x4" bds, 2-2"x4" r, 4"x4" post, 3' H, wood, No. 1	LF	12.59	0.94
0440	Fence, 1"x4" bds, 2-2"x4" r, 4"x4" post, 4' H, wood, No. 1	LF	14.01	1.00
0460	Fence, 1"x4" bds, 2-2"x4" r, 4"x4" post, 5' H, wood, No. 1	LF	15.77	1.03
0500	Fence, 1"x4" bds, 3-2"x4" r, 4"x4" post, 6' H, wood, No. 1	LF	17.30	1.20
0560	Fence, 1"x6" bd, 3-2"x4" r, 4"x4" post, 6' H, pine, wd, shadow box,	LF	13.55	1.11
0600	Fence, gate, 3'-6"W, 1"x6" bd, 2"x4" r, 4"x4" post, pine, wd, shadow box	EA	128.18	19.13
0620	Fence, 4' H, 1"x6" bds, 3-2"x4" r, 4"x4" post, wood, shadow box, No. 1	LF	17.97	1.17
0640	Fence, 6' H, 1"x6" bds, 3-2"x4" r, 4"x4" post, wood, shadow box, No. 1	LF	20.51	1.26
02836 0859	Open rail fence			
0860	Fence wood, open rail, #1 cedar, split rails, 2 rail 3' high	LF	8.72	1.06
0870	Fence wood, open rail, #2 cedar, split rails, 2 rail 3' high	LF	7.84	1.28
0880	Fence wood, open rail, #1 cedar, split rails, 3 rail, 4' high	LF	10.23	1.06
0890	Fence wood, open rail, #2 cedar, split rails, 3 rail, 4' high	LF	8.78	1.34
0920	Fence wood, open rail, #1 cedar, rustic rails, 2 rail 3' high	LF	6.88	0.86
0930	Fence wood, open rail, #2 cedar, rustic rails, 2 rail 3' high	LF	6.45	1.00
0940	Fence wood, open rail, #1 cedar, rustic rails, 3 rail, 4' high	LF	8.17	0.91
0950	Fence wood, open rail, #2 cedar, rustic rails, 3 rail, 4' high	LF	7.33	1.03
02836 1199	Rustic picket			
1200	Fence wood, rustic picket, molded pine, 2 rail, 3' high	LF	8.97	1.14
1220	Fence wood, rustic picket, #1 cedar, 2 rail, 3' high	LF	9.81	1.37
02836 1499	Wood gate, double leaf			
Note: Mounting To Masonry Wall (Based On 2X4 Frame, 1X4 Cover, Galv Nails & Hinges (Trtfd Lumber))				
1500	Fence wood, gate, 4' x 8' w/hdw, trtd, in masonry wall, dbl leaf	EA	601.31	86.79
1510	Fence wood, gate, 4' x 10' w/hdw, trtd, in masonry wall, dbl leaf	EA	730.58	103.20
1520	Fence wood, gate, 4' x 12' w/hdw, trtd, in masonry wall, dbl leaf	EA	858.84	120.71
02836 1600	Cedar			
1610	3' x 6' Gate, #1 Cedar, Board Fence w/Hardware	EA	211.25	18.86
1620	3' x 6' Gate, #2 Cedar, Board Fence w/Hardware	EA	198.29	18.86
1630	3'- 6" X 6' Gate, #1 Cedar, Board Fence w/Hardware	EA	215.07	18.86
1640	3'- 6" X 6' Gate, #2 Cedar, Board Fence w/Hardware	EA	202.10	18.86
02837 Vinyl Plastic Tubing, Fence Inserts				
02837 1000	Vinyl Plastic Tubing, Fence Inserts			
Note: For 2" Chainlink Fence, Assorted Colors				
1001	4' High Fence, Vinyl Plastic Tube	LF	61.30	11.36
1002	5' High Fence, Vinyl Plastic Tube	LF	62.24	11.36
1003	6' High Fence, Vinyl Plastic Tube	LF	63.79	11.36
1004	7' High Fence, Vinyl Plastic Tube	LF	65.35	11.36
1005	8' High Fence, Vinyl Plastic Tube	LF	66.65	11.36
02838 Retaining Wall Systems				
02838 1000	Modular Retaining Wall Systems			
Note: Includes Design, Installation & Material. For Modular Retaining Walls, Price Includes: Stone Wall, Cap Stones, #57 Stone Backing, Geo-grid (2/3 Height Of Wall), Mirdrain And Fill With Earth, And Compacted. Price DoesNot Include Initial Site Grading, Subbase Preparation Or Finish Grading.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02838 1100	"Amastone" Or Equal			
1101	Retaining Wall, 0-4' Height	SF	15.55	
1102	Retaining Wall, 4-8' Height	SF	16.42	
1103	Retaining Wall, 8-12' Height	SF	16.78	
1104	Retaining Wall, 12-16' Height	SF	17.21	
02838 1200	"Diamond" Or Equal			
1201	Retaining Wall, 0-4' Height	SF	16.36	
1202	Retaining Wall, 4-8' Height	SF	17.22	
1203	Retaining Wall, 8-12' Height	SF	17.60	
1204	Retaining Wall, 12-16' Height	SF	18.02	
02838 1300	"Keystone" Or Equal			
1301	Retaining Wall, 0-4' Height	SF	18.30	
1302	Retaining Wall, 4-8' Height	SF	19.17	
1303	Retaining Wall, 8-12' Height	SF	19.54	
1304	Retaining Wall, 12-16' Height	SF	19.96	
02838 1400	"Criblock" Or Equal (Precast)			
1401	Retaining Wall, 0-4' Height	SF	15.55	
1402	Retaining Wall, 4-8' Height	SF	16.42	
1403	Retaining Wall, 8-12' Height	SF	16.78	
1404	Retaining Wall, 12-16' Height	SF	17.21	
02838 1500	"Versa-Lok" Or Equal (Precast)			
Note: Includes Cap At Top, Pins, And Installation. Excavation, Backfill And Earthwork Not Included.				
1501	Retaining Wall, Up To 4' Height	SF	13.08	
1502	Retaining Wall, 4-8' Height	SF	14.76	
1503	Retaining Wall, 8-12' Height	SF	15.15	
1504	Retaining Wall, 12-16' Height	SF	15.42	
02838 2000	Wood Post Retaining Walls Note			
Note: System Elements Include Wood Posts Installed Side-by-side To Various Heights, And Underdrain.				
2001	4"x4", 1' High, Redwood	LF	29.51	
2002	4"x4", 2' High, Redwood	LF	57.67	
2003	4"x4", 1' High, Cedar	LF	27.03	
2004	4"x4", 2' High, Cedar	LF	52.84	
2005	4"x4", 1' High, Pressure Treated Lumber	LF	27.43	
2006	4"x4", 2' High, Pressure Treated Lumber	LF	53.78	
2007	4"x4", 1' High, Creosoted Lumber	LF	24.23	
2008	4"x4", 2' High, Creosoted Lumber	LF	43.80	
2009	6x6, 2' High, Redwood	LF	87.33	
2011	6x6, 4' High, Redwood	LF	173.66	
2012	6x6, 2' High, Cedar	LF	84.58	
2013	6x6, 4' High, Cedar	LF	166.78	
2014	6x6, 2' High, Pressure Treated Lumber	LF	78.70	
2015	6x6, 4' High, Pressure Treated Lumber	LF	156.91	
2016	6x6, 2' High, Creosoted Lumber	LF	63.10	
2017	6x6, 4' High, Creosoted Lumber	LF	124.81	
2018	8x8, 4' High, Redwood	LF	240.62	
2019	8x8, 6' High, Redwood	LF	450.84	
2021	8x8, 4' High, Cedar	LF	226.86	
2022	8x8, 6' High, Cedar	LF	424.68	
2023	8x8, 4' High, Pressure Treated Lumber	LF	200.43	
2024	8x8, 6' High, Pressure Treated Lumber	LF	373.59	
2025	8x8, 4' High, Creosoted Lumber	LF	162.08	
2026	8x8, 6' High, Creosoted Lumber	LF	300.65	
2027	Random Diameter Poles, Cedar 4' High	LF	54.42	
2028	Random Diameter Poles, Cedar 6' High	LF	80.94	
2029	Random Diameter Poles, Cedar 8' High	LF	107.46	
2031	Random Diameter Poles, 4' High Creosoted Lumber	LF	45.03	
2032	Random Diameter Poles, 6' High Creosoted Lumber	LF	65.86	
2033	Random Diameter Poles, 8' High	LF	89.46	
02838 3000	Post & Board Retaining Walls			
Note: The System Includes All The Elements That Must Go Into A Wall That Resists Lateral Pressure. System Elements Include: Posts & Boards, Cap, Underdrain, And Deadman Where Required.				
3001	4x4 Post, 4' Spacing, 3' High Redwood, 2" Planking	LF	30.99	
3002	4x4 Post, 2' Spacing, 4' High 2" Planking, Redwood	LF	43.98	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3003	6x6 Post, 4' Spacing, 5' High 2" Planking, Redwood	LF	60.25	
3004	6x6 Post, 3' Spacing, 6' High 2" Planking, Redwood	LF	83.45	
3005	6x6 w/Deadman, 3' Spacing, 8' High 2" Planking, Redwood	LF	109.55	
3006	8x8 Post, 2' Spacing, 8' High 2" Planking, Redwood	LF	230.99	
3007	8x8 w/ Deadman, 2' Spacing, 9' High, 2" planking, Redwood	LF	264.90	
3008	4x4 Post, 4' Spacing, 3' High, 2" Planking, Cedar	LF	30.90	
3009	4x4 w/deadman, 2' Spacing, 4' High 2" Planking, Cedar	LF	53.78	
3011	6x6 Post, 4' Spacing, 4' High 2" Planking, Cedar	LF	52.90	
3012	6x6 Post, 3' Spacing, 5' High 2" Planking, Cedar	LF	72.79	
3013	6x6 Post, 2' Spacing, 6' High 2" Planking, Cedar	LF	111.05	
3014	6x6 Post w/deadman, 3' Spacing, 6' High, 2" Planking, Cedar	LF	90.11	
3015	8x8 Post w/deadman, 2' Spacing, 8' High, 2" Planking, Cedar	LF	239.38	
3016	4x4 Post, 4' Spacing, 3' High 2" Planking, Pressure Treated	LF	25.66	
3017	4x4 Post, 3' Spacing, 4' High 2" Planking, Pressure Treated	LF	38.22	
3018	4x4 Post w/deadman, 2' Spacing, 5' High, 2" Planking, Pressure Treated	LF	60.37	
3019	6x6 Post, 3' Spacing, 6' High, 2" Planking, Pressure Treated	LF	111.66	
3021	6x6 Post, 2' Spacing, 7' High, 2" Planking, Pressure Treated	LF	115.10	
3022	6x6 Post w/deadman, 3' Spacing 8' High, 2" Planking, Pressure Treated	LF	105.35	
3023	8x8 Post w/deadman, 2' Spacing 10' High, 2" Planking, Pressure Treated	LF	254.72	
3024	4x4 Post, 4' Spacing, 3' High Creosoted 2" Planking	LF	25.66	
3025	4x4 Post, 3' Spacing, 4' High Creosoted, 2" Planking	LF	38.22	
3026	4x4 Post w/deadman, 2' Spacing, 5' High, Creosoted, 2" Planking	LF	60.37	
3027	6x6 Post, 3' Spacing, 6' High Creosoted, 2" Planking	LF	76.87	
3028	6x6 Post, 2' Spacing, 7' High Creosoted, 2" Planking	LF	111.66	
3029	6x6 Post w/Deadman, 3' Spacing, 8' High, Creosoted, 2" Planking	LF	105.35	
3031	8x8 Post w/Deadman, 2' Spacing, 10' High, Creosoted, 2" Planking	LF	254.72	

02838 4000 Wood Tie Retaining Walls, Rod Connector @ 4'-0"

Note: The System Includes All The Elements That Must Go Into A Wall That Resists Lateral Pressure. System Elements Include: Wood Ties, Threaded Rod (1/2" Diameter), Underdrain, And Deadman Where Required.

02838 4100 Redwood

4101	2' High, 6"x6" Wood Tie Wall	LF	45.34	
4102	4' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	103.72	
4103	6' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	154.89	
4104	4' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	166.80	
4105	6' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	250.88	
4106	8' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	332.59	

02838 4200 Cedar

4201	2' High, 6"x6" Wood Tie Wall	LF	43.97	
4202	4' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	99.60	
4203	6' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	149.39	
4204	4' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	157.16	
4205	6' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	237.11	
4206	8' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	313.32	

02838 4300 Creosoted Wood

4301	2' High, 6"x8" Wood Tie Wall	LF	39.78	
4302	4' High, 6"x8" Wood Tie Wall Deadman @ 6'	LF	90.50	
4303	6' High, 6"x8" Wood Tie Wall Deadman @ 6'	LF	134.66	
4304	4' High, 7"x9" Wood Tie Wall Deadman @ 6'	LF	181.51	
4305	6' High, 7"x9" Wood Tie Wall Deadman @ 6'	LF	264.20	
4306	8' High, 7"x9" Wood Tie Wall Deadman @ 6'	LF	351.15	

02838 4400 Pressure Treated Wood

4401	2' High, 6"x6" Wood Tie Wall	LF	41.20	
4402	4' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	93.91	
4403	6' High, 6"x6" Wood Tie Wall Deadman @ 6'	LF	140.51	
4404	4' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	138.56	
4405	6' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	209.32	
4406	8' High, 8"x8" Wood Tie Wall Deadman @ 6'	LF	276.63	

02838 5000 Stone Retaining Walls

Note: Construction Is Either Dry Set Or Mortar Set. System Elements Include Excavation, Concrete Base, Crushed Stone, Underdrain, And Backfill.

02838 5100 Stone Retaining Walls,

Note: Stone @ \$16.00/Ton

5101	3' High Stone Retaining Wall, Dry Set	LF	82.10	
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MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5102	4' High Stone Retaining Wall, Dry Set	LF	94.85	
5103	6' High Stone Retaining Wall, Dry Set	LF	120.87	
5104	8' High Stone Retaining Wall, Dry Set	LF	178.87	
5105	10' High Stone Retaining Wall, Dry Set	LF	227.83	
5106	12' High Stone Retaining Wall, Dry Set	LF	280.16	
5111	3' High Stone Retaining Wall, Mortar Set	LF	76.10	
5112	4' High Stone Retaining Wall, Mortar Set	LF	87.35	
5113	6' High Stone Retaining Wall, Mortar Set	LF	109.87	
5114	8' High Stone Retaining Wall, Mortar Set	LF	160.87	
5115	10' High Stone Retaining Wall, Mortar Set	LF	202.83	
5116	12' High Stone Retaining Wall, Mortar Set	LF	249.16	
02838 5200 Stone Retaining Walls,				
Note: Stone @ \$32.00/Ton				
5201	3' High Stone Retaining Wall, Dry Set	LF	91.06	
5202	4' High Stone Retaining Wall, Dry Set	LF	107.25	
5203	6' High Stone Retaining Wall, Dry Set	LF	138.76	
5204	8' High Stone Retaining Wall, Dry Set	LF	205.04	
5205	10' High Stone Retaining Wall, Dry Set	LF	263.62	
5206	12' High Stone Retaining Wall, Dry Set	LF	325.58	
5211	3' High Stone Retaining Wall, Mortar Set	LF	85.06	
5212	4' High Stone Retaining Wall, Mortar Set	LF	99.75	
5213	6' High Stone Retaining Wall, Mortar Set	LF	127.76	
5214	8' High Stone Retaining Wall, Mortar Set	LF	187.04	
5215	10' High Stone Retaining Wall, Mortar Set	LF	238.62	
5216	12' High Stone Retaining Wall, Mortar Set	LF	294.58	
02838 5300 Stone Retaining Walls,				
Note: Stone @ \$48.00/Ton				
5301	3' High Stone Retaining Wall, Dry Set	LF	100.69	
5302	4' High Stone Retaining Wall, Dry Set	LF	119.50	
5303	6' High Stone Retaining Wall, Dry Set	LF	155.97	
5304	8' High Stone Retaining Wall, Dry Set	LF	231.20	
5305	10' High Stone Retaining Wall, Dry Set	LF	299.41	
5306	12' High Stone Retaining Wall, Dry Set	LF	371.70	
5311	3' High Stone Retaining Wall, Mortar Set	LF	94.69	
5312	4' High Stone Retaining Wall, Mortar Set	LF	112.14	
5313	6' High Stone Retaining Wall, Mortar Set	LF	144.97	
5314	8' High Stone Retaining Wall, Mortar Set	LF	213.20	
5315	10' High Stone Retaining Wall, Mortar Set	LF	274.41	
5316	12' High Stone Retaining Wall, Mortar Set	LF	340.70	
02838 5400 Stone Retaining Walls,				
Note: Stone @ \$64.00/Ton				
5401	3' High Stone Retaining Wall, Dry Set	LF	110.33	
5402	4' High Stone Retaining Wall, Dry Set	LF	118.26	
5403	6' High Stone Retaining Wall, Dry Set	LF	174.56	
5404	8' High Stone Retaining Wall, Dry Set	LF	258.74	
5405	10' High Stone Retaining Wall, Dry Set	LF	336.59	
5406	12' High Stone Retaining Wall, Dry Set	LF	418.53	
5411	3' High Stone Retaining Wall, Mortar Set	LF	104.33	
5412	4' High Stone Retaining Wall, Mortar Set	LF	124.53	
5413	6' High Stone Retaining Wall, Mortar Set	LF	163.56	
5414	8' High Stone Retaining Wall, Mortar Set	LF	240.74	
5415	10' High Stone Retaining Wall, Mortar Set	LF	311.59	
5416	12' High Stone Retaining Wall, Mortar Set	LF	387.53	
02838 6000 Concrete Retaining Walls				
Note: System Elements Include All Necessary Forms (4 Uses), 3000 PSI Concrete With an 8" Chute, All Necessary Reinforcing Steel, And Underdrain. Exposed Concrete Is Patched And Rubbed.				
6001	4' High x2'-2" Base, 10" Thick Reinforced, Level Backfill	LF	80.79	
6002	6' High x3'-3" Base, 10" Thick Reinforced, Level Backfill	LF	117.56	
6003	8' High x4'-3" Base, 10" Thick Reinforced, Level Backfill	LF	154.52	
6004	10' High x5'-4" Base, 13" Thick Reinforced, Level Backfill	LF	215.04	
6005	12' High x6'-6" Base, 14" Thick Reinforced, Level Backfill	LF	260.25	
6006	16' High x8'-6" Base, 16" Thick Reinforced, level backfill	LF	368.06	
6007	20' High x10'-5" Base, 18" Thick Reinforced, Level Backfill	LF	498.01	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6008	4' High x 3'-2" Base, 12" Thick Sloped Backfill, Reinforced	LF	88.29	
6009	6' High x 4'-6" Base, 12" Thick Sloped Backfill, Reinforced	LF	127.13	
6011	8' High x 5'-11" Base, 12" Thick Sloped Backfill, Reinforced	LF	167.85	
6012	10' High x 7'-5" Base, 16" Thick Sloped Backfill, Reinforced	LF	244.37	
6013	12' High x 8'-10" Base, 18" Thick Sloped Backfill, Reinforced	LF	304.29	
6014	16' High x 11'-10" Base, 21" Thick Sloped Backfill, Reinforced	LF	462.90	
6015	20' High x 15'-0" Base, 24" Thick Sloped Backfill, REinforced	LF	669.42	
6016	3'-0" High x 1'6" Base, Level Ba ckgfill, Unreinforced	LF	51.97	
6017	4'-0" High x 2'0" Base, Level Ba ckgfill, Unreinforced	LF	71.99	
6018	6'-0" High x 3'0" Base, Level Ba ckgfill, Unreinforced	LF	117.87	
6019	8'-0" High x 4'0" Base, Level Ba ckgfill, Unreinforced	LF	168.22	
6021	10'-0" High x 5'-0" Base, Level Backfill, Unreinforced	LF	253.45	
6022	3'-0" High x 2'-0" Base, Sloped Backfill, Unreinforced	LF	55.92	
6023	4'-0" High x 3'-0" Base, Sloped Backfill, Unreinforced	LF	80.23	
6024	6'-0" High x 5'-0" Base, Sloped Backfill, Unreinforced	LF	140.96	
6025	8'-0" High x 7'-0" Base, Sloped Backfill, Unreinforced	LF	211.02	
6026	10'-0" High x 9'-0" Base, Sloped Backfill, Unreinforced	LF	321.97	

02839 Walk/Road/Parking Appurtenances

02840 0009 Guide/guard rail

02840 0009 Posts, steel

0010	Guide/guard rail, 6'-3" OC, corrugated steel, galv, steel	LF	11.33	0.91
0160	Guide/guard rail, corrugated steel, galv, wood posts	LF	8.38	0.91

02840 0359 Guard rail, steel

0360	Guide/guard rail, posts @ 12' - 6" OC, corr steel, galv, guard	LF	7.75	0.98
0365	Guide/guard rail, flared end section, corr steel, guard rail	EA	30.61	1.50
0370	Guide/guard rail, wrap-around, end section, corr steel, guard	EA	35.03	1.08
0375	Guide/guard rail, anchorage unit, corr steel, guard rail	EA	727.55	28.54

02840 0399 Timber guide rail

0400	Guide/guard rail, 4" x 8" w/6" x 8" wood posts, trtd, timber guid	LF	10.18	0.28
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02840 0599 Cable guide rail

0600	Guide/gurad rail, steel posts, 3 at 3/4" cables, cable guide rai	LF	6.17	0.18
0650	Guide/guard rail, stl post, dbl face, 3 at 3/4" cables, cable	LF	12.24	0.04
0700	Guide/guard rail, wood posts, 3 at 3/4" cables, cable guide rail	LF	7.42	0.25
0750	Guide/guard rail, wd posts, dbl face, 3 at 3/4" cables, cable	LF	13.28	0.07
0760	Guide/guard rail, breakaway wd posts, 3 at 3/4" cable guide	EA	265.63	11.14

02840 0899 Guide rail, steel box beam

0900	Guide/guard rail, guide rail, steel box beam 6" x 6"	LF	25.59	0.49
0950	Guide/guard rail, guide rail, steel box beam end assembly	EA	458.69	21.71

02840 1099 Median barrier, steel

1100	Guide/guard rail, median barrier, steel box beam 6" x 8"	LF	25.19	0.56
1120	Guide/guard rail, shop curved, median barrier, steel box beam	LF	35.43	3.28
1150	Guide/guard rail, median barrier, corrugated beam	LF	16.14	0.66

02840 1199 Impact barrier, barrel type

1200	Guide/guard rail, impact barrier, UTMD, barrel type	EA	271.49	0.97
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02840 1499 Concrete posts, individual

1500	Guide/guard rail, conc posts, individual, 6'-5", triangular	EA	41.43	1.89
1550	Guide/guard rail, conc posts, individual, 6'-5", square	EA	43.79	2.03

02840 1999 Median, barrier, concrete

2000	Guide/guard rail, 2' wide, 3'-6" H, sgl, precast conc, median	LF	34.62	0.82
2200	Guide/guard rail, 2' wide, 3'-6" H, dbl, precast conc, median	LF	28.02	1.18
2300	Guide/guard rail, median, cast in place, steel forms	LF	47.68	2.12
2320	Guide/guard rail, median, cast in place, slipformed	LF	26.44	0.73

02840 2349 Guard rail glare screen

2350	Guide/guard rail, median barrier, glare screen	LF	10.99	0.75
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02840 2999 Energy absorbing terminal

Note: Crushable Foam Cartridges Surrounded By Steel Guardrail For Narrow Hazards.

3000	Guide/guard rail, 3' wide, 10 bay, energy absorbing terminal	EA	36,408.42	2,350.16
3010	Guide/guard rail, 2'-6" wide, 7 bay, energy absorbing terminal	EA	24,126.66	1,505.37
3020	Guide/guard rail, 2' wide, energy absorbing terminal, 5 bay	EA	20,573.19	1,322.50

02840 3099 Wide hazard Protection, foamsandwich

3100	Guide/guard rail, 7 bay, 7'-6"w, wide hazard protection, foam	EA	29,170.54	1,657.73
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MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3110	Guide/guard rail, 7 bay, 5' w. wide hazard protection, foam	EA	27,489.24	1,654.28
3120	Guide/guard rail, 7 bay, 3' w. wide hazard protection, foam	EA	24,394.61	1,608.30
02841 0010	Parking barriers			
02841 0010	Timber with saddles			
0100	Parking barriers, 4" x 4" for cars, timber w/saddles, treated	LF	4.87	0.40
0200	Parking barriers, 6" x 6" for trucks, timber w/saddles, treated	LF	7.97	0.40
02841 0399	Folding with individual padlocks			
0400	Parking barriers, 3' H x 3" D, folding w/individual padlocks	EA	383.39	15.41
02841 0599	Flexible fixed stanchion			
0600	Parking barriers, flexible fixed stanchion, 2' high, 3" dia	EA	29.41	1.53
02841 0699	Barrier, Precast concrete			
0700	Parking barriers, barrier, precast conc w/dowels, 12" x 6"	LF	27.30	0.31
02841 0999	Wheel stops, precast concrete			
1000	Parking barriers, 6" x 10" x 6'-0", wheel stops, precast conc	EA	32.27	1.93
1100	Parking barriers, 8" x 13" x 6'-0", wheel stops, precast conc	EA	40.76	2.02
02841 1999	Bollard, concrete filled steel pipe			
Note: (Based On 8 Ft Lgth Encased In 13 In Dia Hole X 4 Ft Deep), Includes Drilling Hole, And Concrete.				
2000	Parking barriers, 8' L, 6" dia, bollard, ptd, conc filled stl	EA	222.88	59.62
2001	6" Wide Reflective Stripe ADD		4.50	
2010	Parking barriers, 8' L, 8" dia, bollard, ptd, conc filled stl	EA	269.20	62.94
2001	6" Wide Reflective Stripe ADD		4.50	
2020	Parking barriers, 8' L, 12" dia, bollard, ptd, conc filled stl	EA	383.05	89.84
2001	6" Wide Reflective Stripe ADD		4.50	
2025	4" Stl Pipe Bollard, Conc Filled Painted, 8' L in 13"D x 4'Dp Hole	EA	149.61	65.21
2001	6" Wide Reflective Stripe ADD		4.50	
02842 0009	Signs			
02842 0009	Reflectorized			
02842 0009	Stock			
0010	Signs stock, 24" x 24", no posts, .080" al reflectorized	EA	40.41	
02842 0499	Stop			
0500	Signs, reflectorized, UTMD std, stop, 24" x 24" w/post	EA	50.29	2.82
02842 0509	Yield			
0510	Signs, reflectorized, UTMD std, yield, 30" triangle w/post	EA	48.26	2.82
02842 0519	Speed limit			
0520	Signs, reflectorized, 12" x 18" w/post, UTMD std, speed limit	EA	45.72	2.82
02842 0539	Exit			
0540	Signs, reflectorized, UTMD std, exit, 12" x 18" w/post	EA	45.72	2.82
02842 0549	Entry			
0550	Signs, reflectorized, UTMD std, entry, 12" x 18" w/post	EA	45.72	2.82
02842 0559	Warning			
0560	Signs, reflectorized, UTMD std, warning, 24" x 24" w/post	EA	50.86	2.82
02842 0569	Information			
0570	Signs, reflectorized, 12" x 18" w/post, UTMD std, information	EA	45.72	2.82
02842 0579	Handicap parking			
0580	Signs, reflectorized, 12" x 18" w/post, UTMD std, handicap	EA	45.72	2.82
02842 0589	Guide and directional signs			
0590	Signs, reflectorized w/post, 12" x 18", guide & directional sign	EA	31.61	2.82
02842 5000	Removal of signs			
5020	Signs, removal of signs, including supports, to 10 SF	EA	85.24	
5030	Signs, removal of signs, including supports, 11 SF to 20	EA	272.76	
5040	Signs, removal of signs, including supports, 21 SF to 40	EA	837.59	
5050	Signs, removal of signs, 41 SF to 100 SF, including supports	EA	1,778.18	
5210	Signs, remove & relocate signs, to 10 SF	EA	466.68	
5220	Signs, remove & relocate signs, 11 SF to 20 SF	EA	1,229.99	
5230	Signs, remove & relocate signs, 21 SF to 40 SF	EA	3,139.93	
5240	Signs, remove & relocate signs, 41 SF to 100 SF	EA	7,947.09	
02843 0010	Steps			
0100	Steps, incl exc, borrow & conc base, bricks, per riser	LF	29.94	2.22
0200	Steps, incl exc, borrow & conc base, railroad ties, per riser	LF	20.91	2.71
0300	Steps, w/exc, 12"x2"/12"x1.5", borrow & conc base, bluestn	LF	42.69	5.71

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02843 2000	Speed Bumps			
2001	10-1/2" x 2-1/4" x 4' Speed Bump W Thermoplastic	EA	83.85	
02859	Traffic Signs & Signals			
02859 9000	Traffic Signals			
9001	mid blk pedestrian crosswalk, w with pb and mast arms	TOT	13,354.35	
9002	intersection, 8 signals w/3 sec t. (2 ea direction), progra	TOT	27,881.18	
9003	intersection, for ea addl traff ic ph controller, add	TOT	2,360.78	
9004	intersection, semi-actuated, de ts in side st only, add	TOT	3,792.08	
9005	intersection, fully-actuated, d ets in all streets, add	TOT	6,658.20	
9006	Traffic signals, intersection, f or pedestrian pushbutton, add	TOT	5,032.02	
9007	intersection, optically program med signal only, add per he	TOT	3,215.01	
9008	intersection, school flashing s ystem programmed	SIG	8,617.11	
02860	Playfield Equipment			
02861 0009	Backstops			
02861 0009	Baseball			
0010	Backstops, baseball, 12' high & 1 overhang, prefab, 30' wide	EA	1,904.78	89.86
0020	Backstops, baseball, 17' - 6" H & 1 overhang, prefab, 34' wide	EA	2,693.25	108.73
0110	Backstops, baseball, regulation, galv	EA	7,009.38	1,123.29
0120	Backstops, baseball, regulation, vinyl coated	EA	10,297.66	1,603.20
0180	Backstops, softball, prefabricated, no overhang	EA	2,223.07	92.71
02861 0199	Softball			
Note: Backstop Includes 4 In (100Mm) O.D. Posts Every 8 Ft (2.4M), Top, Bottom And Middle Brace Rails, Overhang Panel With 9 Gauge Mesh And 1-1/8 In O.D. Frame, 16 Ft (4.9M) Of 6 Gauge Mesh And 32 Ft (9.8M) Of 9 Gauge Mesh				
0200	Bckstp, softball, reg, galv, 14' H, 3"posts@8', 16'-6ga, 32'-9ga mesh,	EA	5,672.45	697.67
0205	Bckstp, softball, reg, galv, 18' H, 3"posts@8', 16'-6ga, 32'-9ga mesh,	EA	9,551.03	1,028.06
0210	Bckstp, softball, reg, galv, 20' H, 3"posts@8', 16'-6ga, 32'-9ga mesh,	EA	9,999.32	978.36
0215	Bckstp, softball, reg, galv, 22' H, 3"posts@8', 16'-6ga, 32'-9ga mesh,	EA	11,310.90	556.82
0220	Bckstp, softball, reg, galv, 24' H, 3"posts@8', 16'-6ga, 32'-9ga mesh,	EA	13,060.70	571.43
0250	Bckstp, softball, reg, vnyl ctd, 14' H, 3"post@8', 16'-6ga, 32-9ga	EA	10,094.04	814.94
0255	Bckstp, softball, reg, vnyl ctd, 18' H, 3"post@8', 16'-6ga, 32-9ga	EA	12,521.10	927.54
0260	Bckstp, softball, reg, vnyl ctd, 20' H, 3"post@8', 16'-6ga, 32-9ga	EA	13,181.53	881.31
0265	Bckstp, softball, reg, vnyl ctd, 22' H, 3"post@8', 16'-6ga, 32-9ga	EA	14,864.37	495.76
0270	Bckstp, softball, reg, vnyl ctd, 24' H, 3"post@8', 16'-6ga, 32-9ga	EA	17,218.01	506.91
02861 0299	Basketball			
0300	Backstops, basketball, steel, single goal, w/pole	EA	1,483.47	79.71
0400	Backstops, basketball, steel, double goal, w/pole	EA	1,768.15	88.92
02861 0599	Tennis			
0600	Backstops, tennis, wire mesh w/pair of ends	SET	1,013.53	41.80
0700	Backstops, tennis, enclosed court	EA	3,829.38	164.95
02861 0899	Handball or squash court			
1000	Backstops, handball or squash court, outdoor, masonry	EA	20,639.04	2,054.88
02862 0009	Goal posts			
02862 0009	Football			
0010	Goal posts, steel, football, double post	PR	1,729.73	108.82
0100	Goal posts, steel, football, deluxe, single post	PR	1,703.22	80.26
0300	Goal posts, football, convertible to soccer	PR	2,472.25	114.73
02862 0499	Soccer			
0500	Goal posts, soccer, regulation	PR	1,832.63	82.55
02863 0010	Mdular playground			
02863 0099	Deck			
0100	Mdular playground, deck, square, steel	EA	1,209.28	52.08
0110	Mdular playground, deck, square, polyurethane	EA	1,153.06	68.76
0120	Mdular playground, deck, triangular, steel	EA	1,003.50	43.94
02863 0129	Post			
0130	Mdular playground, post, steel, 5" square	EA	54.64	2.40
0140	Mdular playground, post, aluminum 2-3/8" square	EA	47.82	2.46
0150	Mdular playground, post, aluminum 5" square	LF	56.48	2.77
02863 0159	Roof			
0160	Mdular playground, roof, square poly, 54" side	EA	1,139.65	63.93
02863 0169	Transfer module			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0170	Mdular playground, transfer module	EA	1,895.91	116.39
02863 0179	Guardrail, pipe			
0180	Mdular playground, guard rail, pipe	LF	198.11	11.73
02863 0189	Steps			
0190	Mdular playground, steps, deck-to-deck	EA	1,182.46	81.09
02863 0199	Activity Panel			
0200	Mdular playground, activity panel, minimum	EA	613.48	34.01
0210	Mdular playground, activity panel, maximum	EA	975.90	26.15
02863 0369	Crawl tunnel			
0370	Mdular playground, crawl tunnel, straight, 56" long	EA	928.34	40.03
0380	Mdular playground, crawl tunnel, 90 degree	EA	1,158.34	53.65
02863 1199	Slide			
1200	Mdular playground, slide, tunnel	EA	1,463.91	190.25
1210	Mdular playground, slide, straight, poly	LF	228.86	13.53
1220	Mdular playground, slide, straight, sst, 54" high	LF	277.56	10.08
1230	Mdular playground, slide, curved, poly, 40" high	EA	730.50	41.32
1240	Mdular playground, slide, spyroslide, 56" - 72" high	EA	2,526.55	129.41
02863 1299	Ladder			
1300	Mdular playground, ladder, vertical	EA	510.79	32.44
1310	Mdular playground, ladder, horizontal, 8' long	EA	783.05	73.53
02863 1319	Corkscrew climber			
1320	Mdular playground, corkscrew climber	EA	689.85	40.15
02863 1329	Fire pole			
1330	Mdular playground, fire pole	EA	309.39	17.76
02863 1339	Bridge			
1340	Mdular playground, bridge, ring	EA	946.01	56.31
1350	Mdular playground, bridge, clatter	LF	433.85	16.16
02864 0010	Playground equipment			
02864 0199	Bike rack			
0200	Playground eqpt, bike rack, 10' long, permanent	EA	313.81	41.86
02864 0239	Climber			
0240	Playground eqpt, climber, arch, 6' high	EA	593.49	51.08
0250	Playground eqpt, climber, 4-way arch, 6' high	EA	993.74	53.05
02864 0259	Fitness trail			
0260	Playground eqpt, pine, fitness trail, w/signs, 9 to 10 stations	EA	5,106.43	637.08
0280	Playground eqpt, metal, fitness trail, w/signs, 9 to 10 stations	EA	6,608.43	1,590.56
0320	Playground eqpt, trtd pine, fitness trail, w/signs, 16 to 20	EA	11,152.81	1,229.71
0340	Playground eqpt, metal, fitness trail, w/signs, 16 to 20 station	EA	13,063.20	1,997.05
0380	Playground eqpt, adv cross steel, fitness trail, w/signs,	EA	16,967.86	1,891.31
0390	Playground eqpt, adv cross timber, fitness trail, w/signs,	EA	16,364.78	2,370.58
02864 0399	Horizontal monkey ladder			
0400	Playground eqpt, horiz monkey ladder, 14' long	EA	674.11	36.75
02864 0599	Posts, tether ball set			
0600	Playground eqpt, posts, tether ball set, 2-3/8" OD	EA	144.62	13.28
1000	Playground eqpt, 2-3/8" post, posts, ground socket for movable	PR	140.66	15.36
1100	Playground eqpt, 3.5" post, posts, ground socket for movable	PR	145.70	25.53
02864 1299	See-saw			
1300	Playground eqpt, see-saw, steel, 2 units	EA	435.61	56.76
1400	Playground eqpt, see-saw, steel, 4 units	EA	968.46	77.41
1500	Playground eqpt, see-saw, steel, 6 units	EA	993.22	88.83
02864 1699	Shelter, golf tee			
1700	Playground eqpt, fiberglass golf tee, 3 person, shelter	EA	2,376.52	51.65
02864 1899	Slides			
1900	Playground eqpt, slides, sst bed, 12' long, 6' high	EA	1,605.98	127.92
1950	Playground eqpt, slides, sst bed, 20' long, 8' high	EA	1,871.69	193.31
02864 2199	Swings			
2199	8' (2.4M) High Swing with 2 Seats 1 Section, Two-Way End Fitting,	EA	901.24	248.08
2200	Playground eqpt, swings, plain seats, 8' high, 4 seats	EA	1,150.92	182.28
2210	8' (2.4M) High Swing with 3 Seats 1 Section, Two-Way End Fitting,	EA	1,076.12	249.33
2300	Playground eqpt, swings, plain seats, 8' high, 8 seats	EA	1,964.09	229.46
2490	12' (3.7M) High Swing with 2 Seats, 1 Section, 3-way End	EA	1,170.61	313.85

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2495	12 '(3.7M) High Swing with 3 Seats, 1 Section, 3-Way End	EA	1,420.05	313.85
2500	Playground eqpt, swings, plain seats, 12' high, 4 seats	EA	1,331.25	193.11
2600	Playground eqpt, swings, plain seats, 12' high, 8 seats	EA	2,200.45	280.65
02864 2799	Whirlers			
2800	Playground eqpt, whirlers, 8' dia	EA	1,689.41	176.32
2900	Playground eqpt, whirlers, 10' dia	EA	2,132.80	176.32
02864 2919	Horizontal ladder			
2920	Playground eqpt, horizontal ladder	EA	663.15	52.97
02864 2939	Horizontal bars			
2940	Playground eqpt, horizontal bars	EA	407.33	82.92
02864 5000	Playground Safety Surfacing			
	Note: Rubber/Polyur			
5001	Playground Safety Surfacing	SF	10.02	
02870	Site/Street Furnishings			
02871 0009	Benches			
02871 0009	Precast concrete, w/backs, wood rails			
0010	Benches, park, precast conc, w/backs, wood rails, 4' long	EA	401.10	34.17
0100	Benches, park, precast conc, w/backs, wood rails, 8' long	EA	777.25	62.65
02871 0299	Fiberglass, without back			
0300	Benches, fiberglass, backless, one piece, 4' long	EA	418.18	12.61
0400	Benches, fiberglass, backless, one piece, 8' long	EA	807.02	25.76
02871 0699	Hardwood, with back, steel frame			
0700	Benches, steel supports, w/backs, wood slats, 4' long	EA	755.03	14.45
0710	Benches, permanent, stl supports, w/back wood slats, 6'	EA	699.66	19.75
0720	Benches, steel supports, w/backs, wood slats, 8' long	EA	851.86	39.87
02871 0729	Redwood slat, with back, galv. pipe leg			
0730	Benches, permanent redwood slat, w/back, 6' long	EA	702.31	29.38
02871 0739	Steel supports w/backs, redwood			
0740	Benches, steel supports, w/backs, redwood slats, 6' long	EA	670.49	11.40
0750	Benches, perm stl supports, w/backs, redwood slats, 8' long	EA	419.96	21.67
0760	Benches, redwood contour slats, 6' long, perm w/back, steel	EA	722.99	12.76
0780	Benches, steel supports, victorian	EA	667.27	18.48
02871 0899	Steel frame and seat			
0900	Benches, all steel, 6' long	EA	554.76	44.28
0910	Benches, steel frame, hardwood boards, 6' long	EA	320.66	28.47
02871 1719	Players bench			
1720	Benches, players, 15' long	LF	55.04	5.50
02871 1799	Permanent Aluminum			
1800	Benches, permanent aluminum enclosed slat, 6' long	EA	271.12	13.72
02871 1809	Portable Aluminum			
1810	Benches, portable aluminum, anodized, 6' long	EA	331.23	12.16
1820	Benches, portable aluminum colored, 6' long	EA	470.54	15.49
02871 1829	Portable steel			
1830	Benches, portable steel, super slat, 6' long	EA	531.53	23.23
02871 1839	Permanent steel			
1840	Benches, permanent steel, one piece, 6' long	EA	1,038.56	50.80
02871 1849	Portable steel slat			
1850	Benches, portable perma-glass, 6' long	EA	859.33	37.11
02872 0009	Bleachers			
0010	Bleachers, 3-5 tiers, to 300' L, portable, outdoor	SEA	28.65	2.08
0100	Bleachers, 3-5 tiers, < 15' L, prefab, portable, outdoor	SEA	49.60	2.08
0200	Bleachers, outdoor, portable, 6 to 20 tiers, up to 300' L	SEA	18.57	0.93
0300	Bleachers, outdoor, under 15', (highly prefab, on wheels)	SEA	44.30	0.93
0600	Bleachers, outdoor, perm 3 to 15 tiers	SEA	70.56	5.27
0950	Bleachers, outdoor, perm 16 to 30 tiers	SEA	82.56	4.16
02874 0009	Planters			
02874 0009	Concrete			
0010	Planters, precast, conc, sandblasted, 48" dia, 24" high	EA	481.44	10.33
0020	Planters, precast, conc, sandblasted, 24" dia, 18" high	EA	246.06	4.74

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0040	Planters, precast, conc, sandblasted, 42" dia, 30" high	EA	537.13	11.03
0100	Planters, precast, conc, fluted, 7' dia, 36" high	EA	1,912.05	18.03
02874 0299	Fiberglass			
0300	Planters, fiberglass, circular, 36" dia, 24" high	EA	364.23	7.53
0320	Planters, fiberglass, circular, 36" dia, 27" high	EA	407.83	7.70
0330	Planters, fiberglass, circular, 36" dia, 33" high	EA	445.91	7.90
0335	Planters, fiberglass, circular, 24" dia, 36" high	EA	308.54	6.89
0340	Planters, fiberglass, circular, 60" dia, 39" high	EA	995.19	15.58
0400	Planters, fiberglass, circular, 60" dia, 24" high	EA	934.40	12.33
0600	Planters, fiberglass, square, 24" side, 36" high	EA	643.56	17.04
0620	Planters, fiberglass, square, 24" side, 16" high	EA	250.64	8.72
0700	Planters, fiberglass, square, 48" side, 36" high	EA	827.77	7.56
0740	Planters, fiberglass, square, 48" side, 39" high	EA	876.57	11.26
0800	Planters, fiberglass, 18" high, rectangular, 48" x 12" sides	EA	294.33	7.87
0820	Planters, fiberglass, 21" high, rectangular, 48" x 24" sides	EA	416.31	11.46
02874 1099	Wood			
1100	Planters, wood, square, 18" side, 18" high	EA	364.52	9.59
1110	Planters, wood, square, 24" side, 18" high	EA	394.17	10.53
1140	Planters, wood, square, 24" side, 30" high	EA	547.98	12.90
1150	Planters, wood, square, 30" side, 18" high	EA	599.74	11.32
1160	Planters, wood, square, 30" side, 24" high	EA	658.59	15.86
1170	Planters, wood, square, 36" side, 18" high	EA	674.00	8.80
1180	Planters, wood, square, 36" side, 24" high	EA	758.93	10.33
1210	Planters, wood, rectangular, 18" x 36" sides, 24" high	EA	647.55	8.16
1220	Planters, wood, rectangular, 18" x 72" sides, 24" high	EA	952.08	9.40
1230	Planters, wood, rectangular, 36" x 72" sides, 24" high	EA	1,106.57	7.31
1240	Planters, wood, rectangular, 48" x 72" sides, 30" high	EA	1,334.63	19.78
1245	Planters, wood, circular, 18" dia, 18" high	EA	388.10	1.66
1250	Planters, wood, circular, 24" dia, 18" high	EA	334.56	2.23
1260	Planters, wood, circular, 24" dia, 24" high	EA	382.37	2.29
1270	Planters, wood, circular, 30" dia, 24" high	EA	483.14	2.40
1280	Planters, wood, circular, 36" dia, 24" high	EA	564.91	2.60
1290	Planters, wood, circular, 36" dia, 30" high	EA	623.25	2.62
1310	Planters, wood, circular, 60" dia, 24" high	EA	894.42	3.95
1320	Planters, wood, circular, 72" dia, 24" high	EA	1,090.66	9.54
1500	Planters, wood, circular, 72" dia, 30" high	EA	1,185.44	9.54
1600	Planters, wood, planter/bench, 72"	EA	2,328.45	27.77
1700	Planters, wood, planter/bench, square, 96" side x 27" high	EA	3,120.57	28.45
1800	Planters, wood, planter/bench, circular, 84" dia	EA	3,681.75	68.88
1900	Planters, wood, planter/bench, circular, 108" dia	EA	4,621.01	79.41
02876 0009	Trash receptacle			
02876 0009	Fiberglass, square			
0010	Trash receptacle, fiberglass, 2' square, 18" high	EA	232.50	
02876 5019	Wood, steel frame			
5020	Trash receptacle, 22 gal capacity, square, KD wood, steel	EA	213.41	10.86
5030	Trash receptacle, 32 gal capacity, square, KD wood, steel	EA	287.49	14.67
5040	Trash receptacle, KD wood, square, for dome top, add	EA	82.91	3.64
5050	Trash receptacle, KD wood, square, for flat top, add	EA	65.94	2.85
5060	Trash receptacle, 22 gal capacity, circular, KD wood,	EA	426.06	6.18
5070	Trash receptacle, 32 gal capacity, circular, KD wood,	EA	757.57	36.63
02876 5079	Wood, steel frame, ash receptacle			
5080	Trash receptacle, KD wood, steel frame, ash receptacle	EA	373.05	14.73
02876 6019	Perforated steel, steel pipe frame			
6020	Trash receptacle, 22 gal capacity, perforated steel,	EA	470.64	16.62
6030	Trash receptacle, 32 gal capacity, perforated steel,	EA	615.25	29.66
6040	Trash receptacle, perforated steel, for dome top, add	EA	79.73	1.81
6050	Trash receptacle, perforated steel, for flat top, add	EA	68.41	1.41
02876 7019	Welded wire, steel frame			
7020	Trash receptacle, welded wire, steel frame, 22 gal capacity	EA	468.51	8.55
7030	Trash receptacle, welded wire, steel frame, 32 gal capacity	EA	550.72	11.15
7040	Trash receptacle, welded wire, for dome top, add	EA	76.01	1.52
7050	Trash receptacle, welded wire, for flat top, add	EA	68.41	1.24
02876 8019	Reinforced concrete			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8020	Trash receptacle, 22 gal capacity, circular, reinforced	EA	276.35	4.54
8030	Trash receptacle, 32 gal capacity, circular, reinforced	EA	331.85	6.07
8040	Trash receptacle, reinforced conc, for dome top, add	EA	83.83	2.51
8045	Trash receptacle, reinforced conc, for square top, add	EA	77.25	2.12
8050	Trash receptacle, reinforced conc, for flat top, add	EA	62.61	1.69
02876 9019 Fiberglass, circular				
9020	Trash receptacle, fiberglass, 16" dia, 37" H, 15 gal cap	EA	358.93	10.61
9030	Trash receptacle, fiberglass, 20" dia, 32" h, 30 gal cap	EA	358.93	9.48
9040	Trash receptacle, fiberglass, 24" dia, 30" H, 30 gal cap	EA	348.32	7.53
02876 9049 Fiberglass, ash receptacle				
9050	Trash receptacle, fiberglass, ash urn, 12" dia, 21" H	EA	178.60	4.26

02900 Landscaping

02905 Picnic Tables

02905 4000 Picnic Tables

Note: Manufactured From Recycled Plastic

02905 4100 Pedestal Tables - 4'Sq., 2 Seats

4101	3"x4" Slats	EA	496.29	
4102	4"x4" Slats	EA	544.48	

02905 4200 Pedestal Tables - 4'Sq., 4 Seats

4201	3"x4" Slats	EA	652.55	
4202	4"x4" Slats	EA	717.26	

02906 Landscape Maintenance

02906 1000 Maintenance Activities

02906 1100 Hedge Trimming

1101	0-5' High Hedge, 0-3' Wide	LF	0.79	
1102	0-5' High Hedge, 4-6' Wide	LF	1.19	
1103	5-10' High Hedge, 0-3' Wide	LF	1.80	
1104	5-10' High Hedge, 4-6' Wide	LF	1.84	

02906 1200 Fence Line Clearing

1201	Fence Line Clearing, Light Area	LF	0.37	
1202	Fence Line Clearing, Medium Area	LF	0.97	
1203	Fence Line Clearing, Rough Areas	LF	1.75	

02906 1300 Fertilization/Herbicides/Pesticides

1301	Fertilizer-2Lbs Of Nitrogen/1000 SF (Granular)	MSF	3.80	
1302	Fertilizer-2Lbs Of Nitrogen/1000 SF (Liquid)	MSF	1.80	
1303	Pesticide-Surface Eating	MSF	2.12	
1304	Pesticide-Subsurface Eating	MSF	2.14	
1305	Pesticide-Fungicide Application	MSF	2.79	
1306	Herbicide - Non-select	MSF	10.07	
1307	Herbicide - Pre Emergent & Post Emergent Select	MSF	2.11	

02906 1400 Grass Cutting

1401	Grass Cutting, Level Grade	ACR	26.21	
1402	Grass Cutting, Slopped Grade	ACR	29.59	
1403	Grass Cutting, Level Grade, Reel Mower	ACR	26.21	
1404	Grass Cutting, Ball Fields, Rotary Mower	ACR	21.69	
1405	Grass Cutting, Level Area, Bush Hog	ACR	19.44	
1409	Trim Edge	MLF	47.37	

02906 1500 Plant and Shrub Maintenance

1501	Plant and Shrub Trim And Prune I ncl Proper Disposal Of Branches	EA	1.21	
1502	Plant and Shrub Watering	EA	0.99	

02906 1600 Turf and Fence Spray

1601	Turf Spray, Machine	ACR	101.07	
1602	Fence Spray, Hand	CLF	10.70	

02906 1700 Plant Growth Regulator Application

1702	Plant Growth Regulator Application	EA	2.02	
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02906 1900 Miscellaneous Grounds Maintenance

1901	Turf Aerification (Min. 6" Penetration)	ACR	21.54	
1902	Top Dressing 1/8" - 1/4" Sand	CSF	2.18	
1903	Playing Field Maintenance (Clay- Nail Drag)	CSF	1.55	
1904	Playing Field Maintenance (Clay- Screen Drag)	CSF	1.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1905	Playing Field Maint. (Provide & Install Clay, Includes Delivery)	CY	26.37	
02906 3000	Tree Pits			
Note: Costs Given Show The Tree Pit Size to Accomodate The Soil Ball And The Type Of Soil Excavated Including Excavation, Gravel Fill, Mix Planting Soil, Hand Backfill, Drainage Fabric & Bark Mulch. Note: Tile Has Been Included In Clay Soils Drainage. Apply Woven Fabric Before Bark Is Spread.				
3001	2' x1-1/4' Dp Tree Pit, Sandy Soil	EA	34.75	
3002	2-1/2' x1-1/2' Dp Tree Pit, Sandy Soil	EA	66.31	
3003	3' x1-3/4' Dp Tree Pit, Sandy Soil	EA	104.26	
3004	3-1/2' x1-3/4' Dp Tree Pit, Sandy Soil	EA	128.88	
3005	4' x1-3/4' Dp Tree Pit, Sandy Soil	EA	154.50	
3006	4-1/2' x2' Dp Tree Pit, Sandy Soil	EA	224.36	
3007	5' x2-1/4' Dp Tree Pit, Sandy Soil	EA	298.39	
3008	6' x2-1/2' Dp Tree Pit, Sandy Soil	EA	423.08	
3009	7' x3' Dp Tree Pit, Sandy Soil	EA	713.94	
3011	8' x3-1/4' Dp Tree Pit, Sandy Soil	EA	986.34	
3021	2' x1-1/4' Dp Tree Pit, Clay Soil	EA	51.27	
3022	2-1/2' x1-1/2' Dp Tree Pit, Clay Soil	EA	72.77	
3023	3' x1-3/4' Dp Tree Pit, Clay Soil	EA	112.77	
3024	3-1/2' x1-3/4' Dp Tree Pit, Clay Soil	EA	134.14	
3025	4' x1-3/4' Dp Tree Pit, Clay Soil	EA	158.16	
3026	4-1/2' x2' Dp Tree Pit, Clay Soil	EA	219.09	
3027	5' x2-1/4' Dp Tree Pit, Clay Soil	EA	265.03	
3028	6' x2-1/2' Dp Tree Pit, Clay Soil	EA	273.93	
3029	7' x3' Dp Tree Pit, Clay Soil	EA	606.29	
3031	8' x3-1/4' Dp Tree Pit, Clay Soil	EA	833.40	
02906 4000	Tree & Shrub Removal Dig And Lacc.			
4001	18" to 24" Shrub, Broadleaf Ever green	EA	16.10	
4002	2' to 3' Shrub, Broadleaf Evergr een	EA	25.25	
4003	3' to 4' Shrub, Broadleaf Evergr een	EA	29.28	
4004	4' to 5' Shrub, Broadleaf Evergr een	EA	43.92	
4011	12" to 15" Shrub, Deciduous	EA	8.06	
4012	18" to 24" Shrub, Deciduous	EA	12.44	
4013	2' to 3' Shrub, Deciduous	EA	16.10	
4014	3' to 4' Shrub, Deciduous	EA	17.57	
4021	18" to 24" Shrub, Evergreen	EA	16.10	
4022	24" to 30" Shrub, Evergreen	EA	17.57	
4023	30" to 36" Shrub, Evergreen	EA	25.25	
4024	36" to 42" Shrub, Evergreen	EA	43.92	
4031	2' to 3' Tree, Deciduous	EA	16.10	
4032	3' to 4' Tree, Deciduous	EA	17.57	
4033	4' to 5' Tree, Deciduous	EA	25.25	
4034	5' to 6' Tree, Deciduous	EA	29.28	
4041	5' to 6' Tree, Shade	EA	17.57	
4042	6' to 8' Tree, Shade	EA	25.25	
4043	8' to 10' Tree, Shade	EA	35.13	
4044	2" Caliper Tree, Shade	EA	73.21	
4051	4' To 5' Tree, Evergreen	EA	25.25	
4052	5' To 6' Tree, Evergreen	EA	35.13	
4053	6' To 7' Tree, Evergreen	EA	46.12	
4054	7' To 8' Tree, Evergreen	EA	58.56	
4055	8' To 10' Tree, Evergreen	EA	79.79	
02910	Shrub/Tree Transplanting			
02911 0010	Tree guying			
0200	Tree guying, w/stakes, 3 stakes, guy wire & wrap, 3" to 4"	EA	36.88	
1400	Tree guying, w/stakes, 8" anchors, guy wire & wrap, 8"	EA	135.03	
02920	Soil Preparation			
02922 0010	Plant bed preparation			
02922 4999	Plant bed preparation, by machine			
5000	Plant bed preparation, 18" deep, by machine	SF	1.62	
02922 5009	Plant bed preparation, by hand			
5010	Plant bed preparation, 18" deep, by hand	SF	2.92	
5012	Polyethylene Film 6 Mil, For Plant Bed Preparation	SY	0.74	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5014	Polyethylene Film 4 Mil, For Plant Bed Preparation	SY	0.54	
5016	Filter Fabric Weed Barrier, For Plant Bed Preparation	SY	1.29	
02930 Lawns & Grasses				
02932 0009 Seeding				
02932 0009 Apply seeding				
0010	Seeding, athletic field mix, 8#/MSF push spreader	MSF	47.61	
0300	Seeding, athletic field mix, mechanical seeding, 50#/MSY	CSY	68.51	
0320	Seeding, athletic field mix, mechanical seeding, 450#/acre	ACR	837.52	
0340	Seeding, athletic field mix, by hand, 50#/MSY	CSY	14.38	
0350	Mechanical Seeding, 50#/MSY		56.11	
0360	Mechanical Seeding, 450#/Acre		3,249.96	
0370	Hydroseeding, 50#/MSY, Residential And DOT Mix *FRA		57.49	
02932 1001 Seeding				
Note: Includes Fertilizing, Liming, Mixing, Preparation And Seeding				
1004	Blue Grass - Tractor Spreader 4#/MSF	MSF	13.28	
1005	Fescue-Tall - Push Spreader 5.5#/MSF	MSF	32.48	
1006	Fescue-Tall - Tractor Spreader 5.5#/MSF	MSF	19.55	
1007	Rye - Push Spreader 10#/MSF	MSF	35.16	
1008	Rye - Tractor Spreader 10#/MSF	MSF	22.23	
1009	Shade Mix - Push Spreader 6#/MSF	MSF	37.18	
1011	Shade Mix - Tractor Spreader 6#/MSF	MSF	24.25	
1012	Turf Mix - Push Spreader 4#/MSF	MSF	34.65	
1013	Turf Mix - Tractor Spreader 4#/MSF	MSF	21.72	
1014	Slope Mix - Push Spreader	MSF	37.18	
1015	Slope Mix - Tractor Spreader 6#/MSF	MSF	24.25	
02932 6999 Apply fertilizer				
7000	Seeding, apply fertilizer, 800 lb/acre	TON	462.96	
7010	Seeding, apply fertilizer, 35#/MSF	MSF	3.88	
7020	Seeding, apply fertilizer, 1# nitrogen/MSF, spray from truck	MSF	5.55	
02932 7021 Apply limestone				
7022	Seeding, apply limestone, mechanical spread	ACR	215.89	
02933 0009 Sodding				
02933 0009 Bluegrass sod				
0010	Sodding, 1" deep, over 8 MSF, bluegrass sod, on level ground	MSF	354.22	
02933 0999 Bent grass sod				
1000	Sodding, bent grass sod, on level ground, over 6 MSF	MSF	549.01	
02933 3100 Sodding				
Note: Includes Fertilizing, Liming, Mixing, Preparation And Seeding				
02933 3100 Bermudas Sod				
3101	1" Deep, Bermudas Sod, Under 1,000 SF, On Level Ground	MSF	522.30	
3102	1" Deep, Bermudas Sod, 1,000 - 4,000 SF, On Level Ground	MSF	468.81	
3103	1" Deep, Bermudas Sod, 4,000 - 8,000 SF, On Level Ground	MSF	405.12	
3104	1" Deep, Bermudas Sod, Over 8,000 SF, On Level Ground	MSF	377.35	
3105	1" Deep, Bermudas Sod, Under 1,000 SF, On Sloped Ground	MSF	674.18	
3106	1" Deep, Bermudas Sod, 1,000 - 4,000 SF, On Sloped Ground	MSF	598.26	
3107	1" Deep, Bermudas Sod, 4,000 - 8,000 SF, On Sloped Ground	MSF	494.42	
3108	1" Deep, Bermudas Sod, Over 8,000 SF, On Sloped Ground	MSF	453.29	
02933 3200 Zoysia Sod				
3201	1" Deep, Zoysia Sod, Under 1,000 SF, On Level Ground	MSF	671.82	
3202	1" Deep, Zoysia Sod, 1,000 - 4,000 SF, On Level Ground	MSF	606.82	
3203	1" Deep, Zoysia Sod, 4,000 - 8,000 SF, On Level Ground	MSF	531.64	
3204	1" Deep, Zoysia Sod, Over 8,000 SF, On Level Ground	MSF	503.87	
3205	1" Deep, Zoysia Sod, Under 1,000 SF, On Sloped Ground	MSF	823.70	
3206	1" Deep, Zoysia Sod, 1,000 - 4,000 SF, On Sloped Ground	MSF	736.27	
3207	1" Deep, Zoysia Sod, 4,000 - 8,000, On Sloped Ground	MSF	620.94	
3208	1" Deep, Zoysia Sod, Over 8,000 SF, On Sloped Ground	MSF	579.81	
02933 3300 Fescue Sod				
3301	1" Deep, Fescue Sod, Under 1,000 SF, On Level Ground	MSF	533.80	
3302	1" Deep, Fescue Sod, 1,000 - 4,000 SF, On Level Ground	MSF	491.81	
3303	1" Deep, Fescue Sod, 4,000 - 8,000 SF, On Level Ground	MSF	439.63	
3304	1" Deep, Fescue Sod, Over 8,000 SF, On Level Ground	MSF	411.86	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3305	1" Deep, Fescue Sod, Under 1,000 SF, On Sloped Ground	MSF	685.68	
3306	1" Deep, Fescue Sod, 1,000 - 4,000 SF, On Sloped Ground	MSF	621.26	
3307	1" Deep, Fescue Sod, 4,000 - 8,000 SF, On Sloped Ground	MSF	528.93	
3308	1" Deep, Fescue Sod, Over 8,000 SF, On Level Ground	MSF	487.80	
02933 3400	Centipede Sod			
3401	1" Deep, Centipede Sod, Under 1,000 SF, On Level Ground	MSF	579.81	
3402	1" Deep, Centipede Sod, 1,000 - 4,000 SF, On Level Ground	MSF	514.81	
3403	1" Deep, Centipede Sod, 4,000 - 8,000 SF, On Level Ground	MSF	451.13	
3404	1" Deep, Centipede Sod, Over 8,000 SF, On Level Ground	MSF	423.36	
3405	1" Deep, Centipede Sod, Under 1,000 SF, On Sloped Ground	MSF	731.69	
3406	1" Deep, Centipede Sod, 1,000 - 4,000 SF, On Sloped Ground	MSF	644.26	
3407	1" Deep, Centipede Sod, 4,000 - 8,000 SF, On Sloped Ground	MSF	540.43	
02933 3500	Kentucky Blue Grass Sod			
3501	1" Deep Sod, Under 1000SF On Level Ground	MF	330.04	
3502	1" Deep Sod, 1000 To 4000 SF On Level Ground	MF	332.58	
3503	1" Deep Sod, 4000 To 6000 SF On Level Ground	MF	264.98	
3504	1" Deep Sod, Over 6000 SF On Level Ground	MF	241.42	
3505	1" Deep Sod, Under 1000 SF On Sloped Ground	MF	418.01	
3506	1" Deep Sod, 1000 To 4000 SF On Sloped Ground	MF	377.84	
3507	1" Deep Sod, 4000 To 6000 SF On Sloped Ground	MF	332.45	
3508	1" Deep Sod, Over 8000 SF On Sloped Ground	MF	285.22	
02933 3600	Kentucky Fine Line Fescue Grass			
3601	1" Deep Grass Under 1000 SF On Level Ground	MSF	434.46	
3602	1" Deep Grass Under 1000 to 4000 SF On Level Ground	MSF	405.59	
3603	1" Deep Grass Under 4000 to 6000 SF On Level Ground	MSF	362.18	
3604	1" Deep Grass Over 6000 SF On Level Ground	MSF	339.33	
3605	1" Deep Grass Under 1000 SF On Sloped Ground	MSF	564.89	
3606	1" Deep Grass 1000 to 4000 SF On Sloped Ground	MSF	516.54	
3607	1" Deep Grass 4000 to 6000 SF On Sloped Ground	MSF	438.81	
3608	1" Deep Grass Over 6000 SF On Sloped Ground	MSF	404.02	
02933 4000	Straw Milch and Tack Coats			
4003	Straw Milch Over Seeded Ground, Power Milch, Large Area	MSF	48.92	
4004	Fiber Milch, Recycled Newspaper, Hand Spread	SY	0.54	
4005	Fiber Milch, Recycled Newspaper, Power Milch, Small Area	MSF	29.76	
4006	Fiber Milch, Recycled Newspaper, Power Milch, Large Area	MSF	14.68	
4007	Asphalt Emulsion, Sprayed Over Area, 1 Gallon/45 SF	GAL	3.76	
4009	Hay Milch Over Seeded Ground, Hand Spread, 1" Deep	SY	0.70	
4011	Hay Milch Over Seeded Ground, Power Milch, < 1000Sf, 1" Dp	MSF	44.05	
4012	Hay Milch Over Seeded Ground, Power Milch, >1000Sf, 1" Dp	MSF	29.88	
02933 5000	Milch, Large Areas (Acre)			
Note: Cereal Straw Including mechanical Application, Complete With Tackifier Emulsion, Applied At A Rate Of 10 bales Per Acre (1" Uniform Depth)				
5001	Milch To 2 Acres	ACR	2,187.59	
5002	Milch 2 Up To 4 Acres	ACR	1,957.56	
5003	Milch 4 Acres And Over	ACR	1,842.25	
02946	Trees/Plants/Ground Cover			
02950 0010	Ground cover and vines, planting only, no prep			
02950 0159	Andora creeping juniper			
0160	Ground cover & vines, Andora Creeping Juniper, 2 gal,	EA	27.34	
0170	Blue Rug Juniper, 1 Gal, In Place	EA	23.46	
0180	Mndo Grass, 1 Gal, In Place	EA	23.46	
0190	Pachysandra, 1 Gal, In Place	EA	25.39	
0200	Periwinkle, 1 Gal, In Place	EA	24.81	
02950 0399	English ivy			
0400	Ground cover & vines, bare root, planting only, English Ivy, 1	EA	1.38	
0460	Ground cover & vines, 12"-15" runners, planting only, English	EA	1.68	
02950 0559	Liriope			
0560	Ground cover & vines, 1 gal cntn, planting only, Liriope,	EA	9.79	
02950 0659	Oregon holly-grape			
0660	Ground cover & vines, 2'-3', planting only, Oregon	EA	28.18	
02950 0759	Variegated liriope			
0760	Ground cover & vines, 1 gal cntnr, planting only, Variegated	EA	9.72	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
02950 0769	Viburnum			
0770	Ground cover & vines, 24"-30", planting only, Viburnum Sweet	EA	26.73	
02951 0010	Mulch			
02951 0759	Pine straw			
0760	Mulch, pine straw, 1" deep, hand spread	SF	0.14	
02951 0799	Peat moss			
0800	Mulch, peat moss, 1" deep, hand spread	CF	1.55	
02951 1199	Stone mulch			
1200	Mulch, stone mulch, hand spread, ceramic chips, economy, 2" deep	SF	0.85	
02951 1899	Wood chips			
1900	Mulch, wood chips, 2" deep, hand spread	SF	0.35	
02952 0009	Planting			
02952 0009	Moving shrubs on site			
0010	Planting, moving shrubs on site, 12" ball	EA	27.50	
0100	Planting, moving shrubs on site, 24" ball	EA	34.99	
02952 0299	Moving trees on site			
0300	Planting, moving trees on site, 36" ball	EA	219.28	
0400	Planting, moving trees on site, 60" ball	EA	822.37	
02954 0010	Shrubs, broadleaf evergreen, prep in beds, B&B			
0150	Shrubs, 3' - 4', in prep beds, Aucuba, broadleaf evergreen	EA	35.05	
0450	Shrubs, 12" - 15" H, in place, Cast Iron Plant, broadleaf	EA	37.56	
0470	Shrubs, 3' - 4' H, B & B, Clerera, broadleaf evergreen	EA	46.82	
0480	Shrubs, 2 gal cont, in place, creeping gardenia, broadleaf	EA	15.98	
0520	Shrubs, 2' - 3', in prep beds, Glossy Abelia, broadleaf	EA	33.50	
0650	Shrubs, Indian Hawthorn, 18" - 24", in prep beds, broadleaf	EA	38.69	
0800	Shrubs, 18" - 24", in prep beds, Mahonia, Leather Leaf, broadleaf	EA	25.01	
1300	Shrubs, 3' - 4', in prep beds, Wax Myrtle, broadleaf evergreen	EA	45.60	
2100	Shrubs, 15" - 18" B&B, in prep beds, Azalea, broadleaf	EA	21.83	
2120	Shrubs, 18" - 24", in prep beds, Azalea, Kurume, broadleaf	EA	41.19	
2650	Shrubs, 8' - 9', in prep beds, Crape Myrtle, broadleaf	EA	174.62	
3550	Shrubs, 2' - 3', in prep beds, Ligustrum, broadleaf evergreen	EA	147.45	
3850	Shrubs, 3' to 4' high, in place, Pampas grass	EA	39.40	
4500	Shrubs, 3'-4', B&B, in prep beds, Viburnum broadleaf	EA	59.23	
4510	Shrubs, 12" - 15", in prep beds, Viburnum Carlesii, broadleaf	EA	36.11	
4520	Burning Bush, 12" To 15", In Place	EA	60.43	
4530	Nellie R Stevens Holly, 1 To 2 Gal, In Place	EA	55.13	
4540	Japanese Holly, 12" To 15", In Place	EA	30.63	
4550	American Holly, 2' To 3', In Place	EA	119.85	
4560	Heavenly Bamboo, 18" To 24", In Place	EA	60.43	
4570	Cherry Laurel, 18" To 24" In Place	EA	72.18	
02955 0010	Shrubs and trees, evergreen, prep in beds, B&B			
02955 0549	Holly			
0550	Shrubs & trees, Savannah holly, 8' - 10' H, in place	EA	548.12	
0560	Shrubs & trees, evergreen, B&B, Holly, Yaupon, 6' - 7'	EA	156.00	
0570	Shrubs & trees, evergreen, B&B, Holly, Burford, 3' - 4'	EA	51.25	
0580	Shrubs & trees, 2' - 3', evergreen, B&B, Dwarf Burford,	EA	81.17	
0590	Shrubs & trees, 2' - 3', evergreen, B&B, Dwarf Chinese,	EA	47.21	
0670	Shrubs & trees, 15" to 18" high, evergreen, B&B, Repandens Holly	EA	36.76	
02955 0674	Pfizer			
0675	Shrubs & trees, 18" to 24" high, evergreen, B&B, Pfizer Juniper	EA	40.60	
02955 0699	Pine			
0700	Shrubs & trees, in prepared beds, B&B, Pine, Black, 2.5'-3'	EA	45.00	
0740	Shrubs & trees, in prepared beds, B&B, Pine, White, 4'-5'	EA	62.77	
0760	Shrubs & trees, in prepared beds, B&B, Pine, Jack, 5' - 6'	EA	122.52	
02955 0899	Yew			
0900	Shrubs & trees, 12"-15", in prepared beds, B&B, Denisforma,	EA	27.33	
02957 0010	Trees, deciduous, in prep beds, B&B			
0600	Trees, deciduous, in beds, B&B, Dogwood, 4' - 5'	EA	80.44	
0610	Trees, deciduous, in beds, B&B, Dogwood, Kousa, 6' - 8'	EA	195.68	
0700	Trees, deciduous, in beds, B&B, Eastern Redbud 4'-5'	EA	88.93	
0710	Trees, deciduous, in beds, B&B, Eastern Redbud 5' - 6'	EA	247.53	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	Trees, deciduous, in beds, B&B, Elm 8'-10'	EA	137.54	
0810	Trees, 12'-15', 3" caliper, in beds, B&B, Elm Camperdown,	EA	677.06	
1450	Trees, deciduous, in beds, B&B, Loquat, 7' - 8'	EA	156.00	
1500	Trees, deciduous, in beds, B&B, Magnolia, 4'-5'	EA	125.87	
1510	Trees, deciduous, in beds, B&B, Southern Magnolia, 10' - 12'	EA	438.40	
1600	Trees, deciduous, 1.5" caliper, in beds, B&B, Maple, red, 8'-10'	EA	196.58	
1610	Trees, deciduous, 4" caliper, in beds, B&B, Maple, red, 16' - 18'	EA	824.75	
1800	Trees, deciduous, in beds, B&B, Oak, 2.5"-3" caliper	EA	656.66	
1810	Trees, 3" caliper, in beds, B&B, Oak, Laurel, 18' - 22',	EA	882.45	
1820	Trees, 5" caliper, in beds, B&B, Oak, Laurel, 18' - 22',	EA	959.75	
1830	Trees, deciduous, 4" caliper, in beds, B&B, Oak, live, 15' - 20'	EA	1,460.21	
1840	Trees, deciduous, in beds, B&B, Willow oak, 14' to 16' high	EA	636.67	
2300	Trees, deciduous, 1.25" caliper, in beds, B&B, Poplar, 9'-11'	EA	190.21	
2310	Trees, deciduous, in beds, B&B, Poplar, 14' - 16'	EA	500.45	
2535	White Spruce Or Norway Spruce, 5' -6' High, B&B *FRA		194.46	
2700	Trees, deciduous, in beds, B&B, Tulip, 5'-6'	EA	82.56	
2710	Trees, deciduous, in beds, B&B, Tulip, 14' - 16'	EA	386.14	
2800	Trees, deciduous, in beds, B&B, Willow, 6'-8', 1" caliper	EA	109.43	
2810	Trees, 10' - 12', 2" caliper, in beds, B&B, Willow, Weeping,	EA	298.11	
2820	Sugar Maple, 5' To 6' In Place	EA	92.11	
2830	River Birch, Multi Stem 5' To 7', In Place	EA	94.16	
2840	European Hornbeam, 8' To 10' In Place	EA	113.93	
2850	American Beech, 6' To 7', In Place	EA	94.48	
2860	White Ash, 6' To 7', In Place	EA	91.94	
2870	Green Ash, 6' To 7', In Place	EA	92.05	
2880	Panicled Goldenra In Tree, 4' To 5', In Place	EA	91.94	
2900	Sourwood, 5' To 6', In Place	EA	92.90	
2905	Paper Birch, 6'-8' High, B&B *FR A		194.46	
2910	White Oak, 5' To 6', In Place	EA	96.71	
2915	European Larch, 5'-6' High, B&B *FRA		203.82	
2920	Sawtooth Oak, 5' To 6', In Place	EA	93.53	
2925	Flowering Crabapple, 15 Gal, Con tainer Or B&B *FRA		207.83	
2930	Little Leaf Linden, 5' To 6', In Place	EA	92.46	
2940	Japanese Zelkova, 6' To 8', In Place	EA	98.40	
2945	Blue Colorado Spruce, 5'-6' High, B&B *FRA		254.61	
2950	Bradford Pear, 6' To 8', In	EA	120.04	
2955	Mgho Pine, 2 1/2' -3' Spread, B &B Or Container *FRA		121.61	
2960	Austrian Pine, 5'-6' High, B&B * FRA		238.57	
2965	American Arborvitae *FRA		182.44	
2970	Chokecherry, 2"-2 1/2" Cal., B&B *FRA		210.79	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03100 Concrete Formwork				
03110 Structural CIP Formwork, Accessories & Joints				
03114 0010 Accessories, chamfer strips				
03114 1999 Polyvinyl chloride				
2000	Accessories, chamfer strip, PVC, 1/2" wide w/leg	LF	50.06	
2200	Accessories, chamfer strip, PVC, 3/4" chamfer w/leg	LF	51.19	
2300	Accessories, chamfer strip, PVC, 1" chamfer w/leg	LF	51.90	
2400	Accessories, chamfer strip, PVC, 1" radius w/leg	LF	52.27	
2800	Accessories, chamfer strip, PVC, 1.5" radius w/leg	LF	55.32	
03114 4999 Wood				
5000	Accessories, chamfer strip, wood, 1/2" wide	LF	49.89	
5200	Accessories, chamfer strip, wood, 3/4" wide	LF	51.03	
5400	Accessories, chamfer strip, wood, 1" wide	LF	52.10	
03116 0010 Accessories, dovetail anchor system				
03116 0499 Anchor slot				
0500	Accessories, filled, 24 ga, dovetail anchor slot	LF	1.11	
0800	Accessories, dovetail anchor slot, 16 oz copper, foam filled	LF	2.57	
03116 1199 Brick anchor				
1200	Accessories, 16 ga, corr, galv, 3.5" long, dovetail anchor slot	EA	0.47	
1500	Accessories, 3.5" long, 16 ga, not corr, galv, dovetail anchor	EA	0.43	
1600	Accessories, 3.5" long, 12 ga, not corr, galv, dovetail anchor	EA	0.53	
03116 3999 Dovetail triangle tie				
4000	Accessories, 12 ga, 3" x 3", triangle tie, galv, dovetail	EA	0.88	
4020	Accessories, 12 ga, 5" x 5", triangle tie, galv, dovetail	EA	0.93	
4040	Accessories, 12 ga, 7" x 7", triangle tie, galv, dovetail	EA	1.01	
4060	Accessories, 12 ga, 7" x 9", triangle tie, galv, dovetail	EA	1.03	
03118 0010 Accessories, anchor rings				
0100	Accessories, anchor ring, conc wall, 3/8" dia rod, 2" dia ring	EA	8.46	1.67
0200	Accessories, anchor ring, conc floor, 3/8" dia rod, 2" dia ring	EA	7.12	1.43
0300	Accessories, anchor ring, 3/8" dia rod, 2" dia ring, CMU	EA	7.12	1.56
03126 0010 Accessories, sleeves and chases				
03126 0099 Plastic				
0100	Accessories, sleeves & chases, 9" L, 2" dia, plastic, 1 use	EA	3.92	
0150	Accessories, sleeves & chases, 9" L, 4" dia, plastic, 1 use	EA	5.06	
0200	Accessories, sleeves & chases, 9" L, 6" dia, plastic, 1 use	EA	6.19	
0250	Accessories, sleeves & chases, 9" L, 12" dia, plastic, 1 use	EA	10.08	
03126 4999 Sheet metal				
5000	Accessories, sleeves & chases, sheet metal, 9" long, 2" dia	EA	3.50	
5100	Accessories, sleeves & chases, sheet metal, 9" long, 4" dia	EA	4.40	
5150	Accessories, sleeves & chases, sheet metal, 9" long, 6" dia	EA	5.53	
5200	Accessories, sleeves & chases, sheet metal, 9" long, 12" dia	EA	6.96	
03126 5999 Steel pipe				
6000	Accessories, sleeves & chases, steel pipe, 9" long, 2" dia	EA	5.96	
6100	Accessories, sleeves & chases, steel pipe, 9" long, 4" dia	EA	10.76	
6150	Accessories, sleeves & chases, steel pipe, 6" dia	EA	26.36	
6200	Accessories, sleeves & chases, steel pipe, 9" long, 12" dia	EA	58.47	
03132 0009 Expansion joint				
0010	Expansion joint, 3.5" H, keyed cold joint, 24 ga, w/stakes	LF	2.41	
5000	Expansion joints, for installation in walls, add		1.00	
5250	Expansion joints, for installation in boxouts, add		0.33	
0050	Expansion joint, 4.5" H, keyed cold joint, 24 ga, w/stakes	LF	2.48	
5000	Expansion joints, for installation in walls, add		1.00	
5250	Expansion joints, for installation in boxouts, add		0.33	
0100	Expansion joint, 5.5" H, keyed cold joint, 24 ga, w/stakes	LF	2.85	
5000	Expansion joints, for installation in walls, add		1.03	
5250	Expansion joints, for installation in boxouts, add		0.34	
0150	Expansion joint, 7.5" H, keyed cold joint, 24 ga, w/stakes	LF	3.18	
5000	Expansion joints, for installation in walls, add		1.05	
5250	Expansion joints, for installation in boxouts, add		0.35	
0160	Expansion joint, 9.5" H, keyed cold joint, 24 ga, w/stakes	LF	3.58	
5000	Expansion joints, for installation in walls, add		1.08	
5250	Expansion joints, for installation in boxouts, add		0.36	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0300	Expansion joint, poured asphalt, plain, 1/2" x 1"	LF	0.87	0.14
5000	Expansion joints, for installation in walls, add		0.38	
5250	Expansion joints, for installation in boxouts, add		0.13	
0350	Expansion joint, poured asphalt, plain, 1" x 2"	LF	1.92	0.08
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
0500	Expansion joint, liquid neoprene, cold applied, 1/2"x1"	LF	2.30	0.31
5000	Expansion joints, for installation in walls, add		0.38	
5250	Expansion joints, for installation in boxouts, add		0.13	
0550	Expansion joint, liquid neoprene, cold applied, 1" x 2"	LF	7.40	0.31
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
0700	Expansion joint, polyurethane, poured, 2 part, 1/2" x 1"	LF	2.66	1.04
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
0750	Expansion joint, polyurethane, poured, 2 part, 1" x 2"	LF	8.94	2.07
5000	Expansion joints, for installation in walls, add		0.49	
5250	Expansion joints, for installation in boxouts, add		0.16	
0900	Expansion joint, rubber asphalt, hot or cold, 1/2" x 1"	LF	0.96	0.25
5000	Expansion joints, for installation in walls, add		0.38	
5250	Expansion joints, for installation in boxouts, add		0.13	
0950	Expansion joint, rubber asphalt, hot or cold, 1" x 2"	LF	1.80	0.11
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
1100	Expansion joint, 1/2" x 1", rubber asphalt, hot, fuel resist	LF	1.70	0.31
5000	Expansion joints, for installation in walls, add		0.38	
5250	Expansion joints, for installation in boxouts, add		0.13	
1150	Expansion joint, rubber asphalt, hot, fuel resist, 1" x 2"	LF	2.22	0.25
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
2000	Expansion joint, premolded, bituminous fiber, 1/2" x 6"	LF	1.21	0.27
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
2050	Expansion joint, premolded, bituminous fiber, 1" x 12"	LF	3.82	0.37
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
2250	Expansion joint, cork w/resin binder, 1/2" x 6"	LF	2.43	0.27
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
2300	Expansion joint, cork w/resin binder, 1" x 12"	LF	7.04	0.13
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
2500	Expansion joint, neoprene sponge, closed cell, 1/2" x 6"	LF	3.51	0.27
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
2550	Expansion joint, neoprene sponge, closed cell, 1" x 12"	LF	8.67	0.17
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
2750	Expansion joint, polyethylene foam 1/2" x 6"	LF	1.62	0.40
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
2800	Expansion joint, polyethylene foam 1" x 12"	LF	4.28	0.37
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
3000	Expansion joint, polyethylene backer rod, 3/8" dia	LF	0.62	0.13
5000	Expansion joints, for installation in walls, add		0.44	
5250	Expansion joints, for installation in boxouts, add		0.15	
3050	Expansion joint, polyethylene backer rod, 3/4" dia	LF	0.75	0.17
5000	Expansion joints, for installation in walls, add		0.44	
5250	Expansion joints, for installation in boxouts, add		0.15	
3100	Expansion joint, polyethylene backer rod, 1" dia	LF	0.80	0.20
5000	Expansion joints, for installation in walls, add		0.44	
5250	Expansion joints, for installation in boxouts, add		0.15	
3500	Expansion joint, 1/2" x 1/2", polyurethane foam polybutylene	LF	1.52	0.47
5000	Expansion joints, for installation in walls, add		0.42	
5250	Expansion joints, for installation in boxouts, add		0.14	
3550	Expansion joint, polyurethane foam polybutylene, 1" x 1"	LF	2.27	0.50
5000	Expansion joints, for installation in walls, add		0.44	
5250	Expansion joints, for installation in boxouts, add		0.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3750	Expansion joint, 1/2" x 6", polyurethane foam regular,	LF	1.49	0.27
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
3800	Expansion joint, 1" x 12", polyurethane foam regular,	LF	3.77	0.30
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
4000	Expansion joint, PVC foam closed cell, 1/2" x 6"	LF	2.97	0.30
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
4050	Expansion joint, PVC foam closed cell, 1" x 12"	LF	7.71	0.30
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
4250	Expansion joint, rubber, gray sponge, 1/2" x 6"	LF	4.17	0.27
5000	Expansion joints, for installation in walls, add		0.53	
5250	Expansion joints, for installation in boxouts, add		0.18	
4300	Expansion joint, rubber, gray sponge, 1" x 12"	LF	14.76	0.37
5000	Expansion joints, for installation in walls, add		0.67	
5250	Expansion joints, for installation in boxouts, add		0.22	
03133 0009 Control joint				
0010	Control joint, screed joint for 4" slab	LF	1.09	
0120	Control joint, screed joint for 6" slab	LF	2.56	
0158	Control joint, screed joint for 8" slab	LF	2.86	
0210	Control joint, screed joint for 10" slab	LF	3.06	
2000	Control joint, asphalt felt, 30#	SF	0.59	0.46
2010	Control joint, asphalt felt, 15#	SF	0.57	0.50
03138 0010 Forms in place, beams and girders, plywood				
03138 0499 Exterior spandrels				
0500	Forms in place, 12" w, plywood, 1 use, ext spandrel, beams &	SF	9.60	
0550	Forms in place, 12" w, plywood, 2 use, ext spandrel, beams &	SF	7.07	
0600	Forms in place, 12" w, plywood, 3 use, ext spandrel, beams &	SF	6.36	
0650	Forms in place, 12" w, plywood, 4 use, ext spandrel, beams &	SF	5.91	
1000	Forms in place, 18" w, plywood, 1 use, ext spandrel, beams &	SF	8.66	
1050	Forms in place, 18" w, plywood, 2 use, ext spandrel, beams &	SF	7.01	
1100	Forms in place, 18" w, plywood, 3 use, ext spandrel, beams &	SF	6.09	
1150	Forms in place, 18" w, plywood, 4 use, ext spandrel, beams &	SF	5.76	
1500	Forms in place, 24" w, plywood, 1 use, ext spandrel, beams &	SF	8.10	
1550	Forms in place, 24" w, plywood, 2 use, ext spandrel, beams &	SF	6.64	
1600	Forms in place, 24" w, plywood, 3 use, ext spandrel, beams &	SF	5.85	
1650	Forms in place, 24" w, plywood, 4 use, ext spandrel, beams &	SF	5.53	
03138 1999 Interior beams				
2000	Forms in place, 12" w, plywood, 1 use, interior beam beams &	SF	7.79	
2050	Forms in place, 12" w, plywood, 2 use, interior beam beams &	SF	6.06	
2100	Forms in place, 12" w, plywood, 3 use, interior beam beams &	SF	5.33	
2150	Forms in place, 12" w, plywood, 4 use, interior beam beams &	SF	4.99	
2210	Forms in place, 18" w, plywood, 1 use, interior beam beams &	SF	7.61	
2220	Forms in place, 18" w, plywood, 2 use, interior beam beams &	SF	6.09	
2230	Forms in place, 18" w, plywood, 3 use, interior beam beams &	SF	5.45	
2240	Forms in place, 18" w, plywood, 4 use, interior beam beams &	SF	5.18	
2500	Forms in place, 24" w, plywood, 1 use, interior beam beams &	SF	7.14	
2550	Forms in place, 24" w, plywood, 2 use, interior beam beams &	SF	5.55	
2600	Forms in place, 24" w, plywood, 3 use, interior beam beams &	SF	4.95	
2650	Forms in place, 24" w, plywood, 4 use, interior beam beams &	SF	4.68	
03138 2999 Encasing steel frame				
3000	Forms in place, hung, plywood, 1 use, encasing stl fr, beams &	SF	7.11	
3050	Forms in place, hung, plywood, 2 use, encasing stl fr, beams &	SF	5.27	
3100	Forms in place, hung, plywood, 3 use, encasing stl fr, beams &	SF	4.69	
3150	Forms in place, hung, plywood, 4 use, encasing stl fr, beams &	SF	4.38	
03138 3499 Beam bottoms only				
3500	Forms in place, to 30" wide, plywood, 1 use, beam bottoms	SF	10.62	
3700	Forms in place, beam bottom over 30" wide, deduct		-1.21	
3550	Forms in place, to 30" wide, plywood, 2 use, beam bottoms	SF	8.05	
3700	Forms in place, beam bottom over 30" wide, deduct		-0.99	
3600	Forms in place, to 30" wide, plywood, 3 use, beam bottoms	SF	7.12	
3700	Forms in place, beam bottom over 30" wide, deduct		-0.92	
3650	Forms in place, to 30" wide, plywood, 4 use, beam bottoms	SF	6.64	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3700	<i>Forms in place, beam bottom over 30" wide, deduct</i>		-0.87	
03138 3999	Beamsides only			
03138 3999	Vertical sides			
4000	Forms in place, vert, 36" high, plywood, 1 use, beam sides only	SF	8.38	
3700	<i>Forms in place, beam bottom over 30" wide, deduct</i>		-0.89	
4050	Forms in place, vert, 36" high, plywood, 2 use, beam sides only	SF	5.90	
3700	<i>Forms in place, beam bottom over 30" wide, deduct</i>		-0.68	
4100	Forms in place, vert, 36" high, plywood, 3 use, beam sides only	SF	5.13	
3700	<i>Forms in place, beam bottom over 30" wide, deduct</i>		-0.62	
4150	Forms in place, vert, 36" high, plywood, 4 use, beam sides only	SF	4.73	
3700	<i>Forms in place, beam bottom over 30" wide, deduct</i>		-0.59	
03138 4499	Sloped sides			
4500	Forms in place, sloped, 36" high, plywood, 1 use, beam sides	SF	8.85	
4550	Forms in place, sloped, 36" high, plywood, 2 use, beam sides	SF	6.31	
4600	Forms in place, sloped, 36" high, plywood, 3 use, beam sides	SF	5.35	
4650	Forms in place, sloped, 36" high, plywood, 4 use, beam sides	SF	4.89	
03138 4999	Upstanding beams			
5000	Forms in place, 36" high, plywood, 1 use, beam upstanding	SF	11.23	
5050	Forms in place, 36" high, plywood, 2 use, beam upstanding	SF	8.53	
5100	Forms in place, 36" high, plywood, 3 use, beam upstanding	SF	7.42	
5150	Forms in place, 36" high, plywood, 4 use, beam upstanding	SF	6.99	
03142 0010	Forms in place, columns			
03142 1499	Round fiber tube			
1500	Forms in place, columns, round fiber tube, 1 use, 8" dia	LF	9.11	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		0.38	
1550	Forms in place, columns, round fiber tube, 1 use, 10" dia	LF	9.29	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		0.40	
1600	Forms in place, columns, round fiber tube, 1 use, 12" dia	LF	9.94	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		0.47	
1650	Forms in place, columns, round fiber tube, 1 use, 14" dia	LF	11.09	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		0.60	
1700	Forms in place, columns, round fiber tube, 1 use, 16" dia	LF	13.14	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		0.87	
1720	Forms in place, columns, round fiber tube, 1 use, 18" dia	LF	14.13	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		1.02	
1750	Forms in place, columns, round fiber tube, 1 use, 20" dia	LF	15.74	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		1.22	
1800	Forms in place, columns, round fiber tube, 1 use, 24" dia	LF	18.03	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		1.52	
1850	Forms in place, columns, round fiber tube, 1 use, 30" dia	LF	22.75	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		2.18	
1900	Forms in place, columns, round fiber tube, 1 use, 36" dia	LF	28.52	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		2.94	
1950	Forms in place, columns, round fiber tube, 1 use, 42" dia	LF	50.94	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		6.11	
2000	Forms in place, columns, round fiber tube, 1 use, 48" dia	LF	64.88	
2200	<i>Forms in place, columns, round fiber tube, for seamless type, add</i>		7.92	
03142 3999	Column capitals, steel			
4000	Forms in place, 4' cap dia, col cap, round steel, 4 use/mo, 24"	EA	106.38	
4500	<i>Forms in place, column capitals, for 2nd & addl mnths, deduct</i>		-10.51	
4050	Forms in place, 5' cap dia, col cap, round steel, 4 use/mo, 24"	EA	115.94	
4500	<i>Forms in place, column capitals, for 2nd & addl mnths, deduct</i>		-11.41	
4100	Forms in place, 6' cap dia, col cap, round steel, 4 use/mo, 24"	EA	128.27	
4500	<i>Forms in place, column capitals, for 2nd & addl mnths, deduct</i>		-12.91	
4150	Forms in place, 7' cap dia, col cap, round steel, 4 use/mo, 24"	EA	142.29	
4500	<i>Forms in place, column capitals, for 2nd & addl mnths, deduct</i>		-14.23	
03142 4999	Plywood			
5000	Forms in place, columns, plywood, 8" x 8", 1 use	SF	8.02	
5050	Forms in place, columns, plywood, 8" x 8", 2 use	SF	6.29	
5100	Forms in place, columns, plywood, 8" x 8", 3 use	SF	5.61	
5150	Forms in place, columns, plywood, 8" x 8", 4 use	SF	5.37	
5500	Forms in place, columns, plywood, 12" x 12", 1 use	SF	7.54	
5550	Forms in place, columns, plywood, 12" x 12", 2 use	SF	5.90	
5600	Forms in place, columns, plywood, 12" x 12", 3 use	SF	5.40	
5650	Forms in place, columns, plywood, 12" x 12", 4 use	SF	5.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6000	Forms in place, columns, plywood, 16" x 16", 1 use	SF	7.45	
6050	Forms in place, columns, plywood, 16" x 16", 2 use	SF	5.78	
6100	Forms in place, columns, plywood, 16" x 16", 3 use	SF	5.22	
6150	Forms in place, columns, plywood, 16" x 16", 4 use	SF	4.98	
6500	Forms in place, columns, plywood, 24" x 24", 1 use	SF	7.43	
6550	Forms in place, columns, plywood, 24" x 24", 2 use	SF	5.86	
6600	Forms in place, columns, plywood, 24" x 24", 3 use	SF	5.22	
6650	Forms in place, columns, plywood, 24" x 24", 4 use	SF	4.96	
7000	Forms in place, columns, plywood, 36" x 36", 1 use	SF	7.14	
7050	Forms in place, columns, plywood, 36" x 36", 2 use	SF	5.58	
7100	Forms in place, columns, plywood, 36" x 36", 3 use	SF	4.98	
7150	Forms in place, columns, plywood, 36" x 36", 4 use	SF	4.76	
03142 7499 Steel framed plywood				
7500	Forms in place, rent, 8" x 8" column, stl fr plywd, 4 use/mo	LF	10.36	
7600	Forms in place, rent, 12" x 12" column, stl fr plywd, 4 use/mo	LF	21.31	
7650	Forms in place, rent, 16" x 16" column, stl fr plywd, 4 use/mo	LF	27.28	
7700	Forms in place, rent, 20" x 20" column, stl fr plywd, 4 use/mo	LF	33.33	
7750	Forms in place, rent, 24" x 24" column, stl fr plywd, 4 use/mo	LF	39.09	
7755	Forms in place, rent, 30" x 30" column, stl fr plywd, 4 use/mo	LF	5.03	
7760	Forms in place, rent, 36" x 36" column, stl fr plywd, 4 use/mo	LF	52.82	
03146 0009 Forms in place, culvert				
0010	Forms in place, 1 use, culvert, 5' to 8' square or rectangular	SF	8.96	
0050	Forms in place, 2 use, culvert, 5' to 8' square or rectangular	SF	7.19	
0100	Forms in place, 3 use, culvert, 5' to 8' square or rectangular	SF	6.54	
0150	Forms in place, 4 use, culvert, 5' to 8' square or rectangular	SF	6.09	
03150 0010 Forms in place, elevated slabs				
Note: Includes Adjustable Shores, Erect And Strip, Clean And Mvve				
03150 0999 Flat plate				
1000	Forms in place, elev slabs, flat plate plywd to 14' high, 1 use	SF	6.19	
1050	Forms in place, elev slabs, flat plate plywd to 14' high, 2 use	SF	4.58	
1100	Forms in place, elev slabs, flat plate plywd to 14' high, 3 use	SF	4.01	
1150	Forms in place, elev slabs, flat plate plywd to 14' high, 4 use	SF	3.71	
1500	Forms in place, elev slabs, flat plate plywd 14'-20' high 4 use	SF	4.29	
03150 1999 Flat slab with drop panels				
2000	Forms in place, to 14' high, 1 use, elev slabs, flat w/drop	SF	6.46	
2050	Forms in place, to 14' high, 2 use, elev slabs, flat w/drop	SF	4.87	
2100	Forms in place, to 14' high, 3 use, elev slabs, flat w/drop	SF	4.40	
2150	Forms in place, to 14' high, 4 use, elev slabs, flat w/drop	SF	4.15	
2250	Forms in place, 14'-20' ceiling, 4 use, elev slabs, flat w/drop	SF	4.58	
2350	Forms in place, 21'-35' ceiling, 4 use, elev slabs, flat w/drop	SF	5.22	
03150 2999 Floor slab hung from steel beams				
3000	Forms in place, 1 use, elev slabs, floor, hung from steel	SF	4.91	
3050	Forms in place, 2 use, elev slabs, floor, hung from steel	SF	4.08	
3100	Forms in place, 3 use, elev slabs, floor, hung from steel	SF	3.83	
3150	Forms in place, 4 use, elev slabs, floor, hung from steel	SF	3.66	
03150 3699 Floor slab with pans				
3700	Forms in place, elev slabs, floor w/30" pans, 1 use	SF	12.03	
3720	Forms in place, elev slabs, floor w/30" pans, 2 use	SF	7.76	
3740	Forms in place, elev slabs, floor w/30" pans, 3 use	SF	6.90	
3760	Forms in place, elev slabs, floor w/30" pans, 4 use	SF	6.32	
03150 4999 Box out for slab openings				
5000	Forms in place, over 16" deep, 1 use, elev slabs, box out for	SF	11.75	
5060	Forms in place, over 16" deep, 3 use, elev slabs, box out for	SF	7.03	
5500	Forms in place, to 10 SF, elev slabs, shallow box out for	EA	48.53	
5550	Forms in place, over 10 SF, elev slabs, shallow box out for	SF	8.23	
03150 5999 Bulkhead forms for slabs				
6000	Forms in place, 2 piece, w/keyway, 1 use, bulkhead forms	LF	4.94	
6100	Forms in place, 3 piece, w/keyway, 1 use, bulkhead forms	LF	5.80	
6220	Forms in place, 6" high, w/keyway, 4 uses, bulkhead forms	LF	2.71	
03150 6499 Curb forms				
6500	Forms in place, 1 use, elev slabs, curb forms, wood, 6"-12"	SF	7.37	
6550	Forms in place, 2 use, elev slabs, curb forms, wood, 6"-12"	SF	6.38	
6600	Forms in place, 3 use, elev slabs, curb forms, wood, 6"-12"	SF	5.67	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6650	Forms in place, 4 use, elev slabs, curb forms, wood, 6"-12"	SF	5.37	
03150 6999	Edge forms			
7000	Forms in place, elev slabs, edge forms to 6" high, 4 use	LF	2.46	
7070	Forms in place, 1 use, elev slabs, edge forms, 7" to 12"	LF	5.84	
7080	Forms in place, 2 use, elev slabs, edge forms, 7" to 12"	LF	4.83	
7090	Forms in place, 3 use, elev slabs, edge forms, 7" to 12"	LF	4.14	
7095	Forms in place, 4 use, elev slabs, edge forms, 7" to 12"	LF	3.78	
03150 7499	Depressed area forms			
7500	Forms in place, 4 use, elev slabs, depressed area to 12"	LF	4.19	
7550	Forms in place, 4 use, elev slabs, depressed area 12"-24"	LF	6.91	
03150 7999	Perimeter deck and rail for elevated slabs			
8000	Forms in place, elev slabs, perimeter deck & rail, straight	LF	21.85	
8050	Forms in place, elev slabs, perimeter deck & rail, curved	LF	30.13	
03150 8499	Void forms			
8500	Forms in place, elev slabs, void forms, round fiber, 3" dia	LF	2.82	
8550	Forms in place, elev slabs, void forms, round fiber, 4" dia	LF	2.95	
8600	Forms in place, elev slabs, void forms, round fiber, 6" dia	LF	3.52	
8650	Forms in place, elev slabs, void forms, round fiber, 8" dia	LF	4.29	
8700	Forms in place, 10" dia, elev slabs, void forms, round fiber	LF	5.57	
8750	Forms in place, 12" dia, elev slabs, void forms, round fiber	LF	6.83	
03154 0009	Forms in place, equipment foundations			
0010	Forms in place, eqpt foundations, 1 use	SF	12.51	
0151	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.45	
0050	Forms in place, eqpt foundations, 2 use	SF	9.74	
0151	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.06	
0100	Forms in place, eqpt foundations, 3 use	SF	8.91	
0151	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.96	
0150	Forms in place, eqpt foundations, 4 use	SF	8.52	
0151	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.91	
03158 0009	Forms in place, footings			
03158 0009	Continuous wall			
0010	Forms in place, 1 use, footings, continuous wall, plywood	SF	5.47	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.68	
0050	Forms in place, 2 use, footings, continuous wall, plywood	SF	3.83	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.58	
0100	Forms in place, 3 use, footings, continuous wall, plywood	SF	3.27	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.55	
0150	Forms in place, 4 use, footings, continuous wall, plywood	SF	3.00	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.53	
03158 1499	Keyway			
1500	Forms in place, 2" x 4", footings, 4 use, tapered wood,	LF	0.73	
1550	Forms in place, 2" x 6", footings, 4 use, tapered wood,	LF	0.83	
03158 2999	Pile cap			
03158 2999	Square or rectangular			
3000	Forms in place, 1 use, footings, pile cap, square or rect,	SF	5.73	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.88	
3050	Forms in place, 2 use, footings, pile cap, square or rect,	SF	4.16	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.74	
3100	Forms in place, 3 use, footings, pile cap, square or rect,	SF	3.64	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.69	
3150	Forms in place, 4 use, footings, pile cap, square or rect,	SF	3.38	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.67	
03158 3999	Triangular or hexagonal			
4000	Forms in place, 1 use, footings, pile cap, triangular/hex,	SF	7.14	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.14	
4050	Forms in place, 2 use, footings, pile cap, triangular/hex,	SF	5.09	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.92	
4100	Forms in place, 3 use, footings, pile cap, triangular/hex,	SF	4.39	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.84	
4150	Forms in place, 4 use, footings, pile cap, triangular/hex,	SF	4.09	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.81	
03158 4999	Spread footings			
5000	Forms in place, 1 use, footings, spread footings, plywood	SF	5.25	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.84	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5050	Forms in place, 2 use, footings, spread footings, plywood	SF	3.80	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.69	
5100	Forms in place, 3 use, footings, spread footings, plywood	SF	3.31	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.64	
5150	Forms in place, 4 use, footings, spread footings, plywood	SF	3.08	
5200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.62	
03162 0009	Forms in place, grade beam			
0010	Forms in place, grade beam 1 use, plywood	SF	4.75	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.74	
0050	Forms in place, grade beam 2 use, plywood	SF	3.70	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.68	
0100	Forms in place, grade beam 3 use, plywood	SF	3.33	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.65	
0150	Forms in place, grade beam 4 use, plywood	SF	3.18	
0200	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.65	
03170 0010	Forms in place, slab on grade			
03170 0999	Bulkhead forms with keyway			
1000	Forms in place, 2 piece, SOG, wood bulkhead forms w/keyway, 1	LF	2.77	
1050	Forms in place, 3 piece, SOG, wood bulkhead forms w/keyway, 1	LF	3.51	
03170 1169	Keyed joint form			
1170	Forms in place, 4 uses, SOG, keyed joint form 7" to 12"	LF	2.94	
03170 1999	Curb forms			
03170 1999	Wood			
2000	Forms in place, SOG, curb forms, wood, 6" - 12" high, 1 use	SF	6.84	
2160	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.19	
2050	Forms in place, SOG, curb forms, wood, 6" - 12" high, 2 use	SF	5.24	
2160	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.03	
2100	Forms in place, SOG, curb forms, wood, 6" - 12" high, 3 use	SF	4.70	
2160	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.97	
2150	Forms in place, SOG, curb forms, wood, 6" - 12" high, 4 use	SF	4.40	
2160	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.93	
03170 2199	Metal, S-shape Material Price Based On 100 Use Life			
2200	Forms in place, SOG, curb forms, metal, 100 uses, 12" x 18"	LF	7.65	
2220	Forms in place, SOG, curb forms, metal, 100 uses, 12" x 24"	LF	7.65	
2230	Forms in place, SOG, curb forms, metal, 100 uses, 12" x 30"	LF	7.66	
2240	Forms in place, SOG, curb forms, metal, 100 uses, 12" x 36"	LF	7.72	
03170 2999	Edge forms			
03170 2999	On grade			
3000	Forms in place, SOG, edge forms, wood, to 6" high, 4 use	LF	2.20	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.43	
3050	Forms in place, SOG, edge forms, wood, 7" to 12" high, 4 use	LF	2.56	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.44	
3060	Forms in place, SOG, edge forms, wood, over 12", 4 use	SF	3.83	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.73	
03170 3499	For depressed slabs			
3500	Forms in place, to 12" high, 4 use, SOG, edge forms, wood,	LF	4.15	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.85	
3550	Forms in place, 12-24" high, 4 use, SOG, edge forms, wood,	LF	6.82	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.46	
03170 3999	For slab blockouts			
4000	Forms in place, to 12" h, 1 use, SOG, edge forms, wood, slab	SF	5.90	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.28	
4020	Forms in place, to 12" h, 2 use, SOG, edge forms, wood, slab	SF	9.57	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.18	
4030	Forms in place, to 12" h, 3 use, SOG, edge forms, wood, slab	SF	8.82	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.05	
4040	Forms in place, to 12" h, 4 use, SOG, edge forms, wood, slab	SF	4.13	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.97	
4050	Forms in place, to 24" h, 1 use, SOG, edge forms, wood, slab	LF	9.52	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.14	
4060	Forms in place, SOG, slab blockout forms, to 12" h, 1 use	LF	6.89	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.60	
03170 4499	Edge forms, metal			

Note: Forms Will Be In 10 Ft (3.05M) Lengths And Material Price Based On 100 Use Life

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4500	Forms in place, 10' L, 100 use, SOG, edge, metal, str, 4" H,	LF	2.30	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.43	
4560	Forms in place, 10' L, 100 use, SOG, edge, metal, str, 6" H,	LF	2.45	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.44	
4570	Forms in place, 10' L, 100 use, SOG, edge, metal, str, 8" H,	LF	2.72	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.46	
4580	Forms in place, 10' L, 100 use, SOG, edge, metal, str, 12" H,	LF	2.92	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.48	
4590	Forms in place, 10' L, 100 use, SOG, edge, metal, str, 16" H,	LF	3.24	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.49	
4600	Forms in place, 10' L, 100 use, SOG, edge, metal, rad, 4" H,	LF	3.07	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.57	
4660	Forms in place, 10' L, 100 use, SOG, edge, metal, rad, 6" H,	LF	3.30	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.60	
4680	Forms in place, 10' L, 100 use, SOG, edge, metal, rad, 8" H,	LF	3.70	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.63	
4690	Forms in place, 10' L, 100 use, SOG, edge, metal, rad, 12" H,	LF	4.01	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		0.66	
03170 5999 Trench forms in floor				
6000	Forms in place, SOG, trench forms in floor, wood, 1 use	SF	9.01	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.60	
6050	Forms in place, SOG, trench forms in floor, wood, 2 use	SF	7.23	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.46	
6100	Forms in place, SOG, trench forms in floor, wood, 3 use	SF	6.69	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.42	
6150	Forms in place, SOG, trench forms in floor, wood, 4 use	SF	6.36	
8800	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.39	
03174 0009 Forms in place, stairs				
03174 0009 Stairs				
0010	Forms in place, stairs, (slant length x width), 1 use	SF	13.61	
0050	Forms in place, stairs, (slant length x width), 2 use	SF	11.48	
0100	Forms in place, stairs, (slant length x width), 3 use	SF	10.35	
0150	Forms in place, stairs, (slant length x width), 4 use	SF	9.39	
03174 1209 Foundation stairway forms				
1210	Forms in place, stairs, foundation stairway forms, 1 use	SF	12.41	
1250	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.37	
1230	Forms in place, stairs, foundation stairway forms, 3 use	SF	9.87	
1250	<i>Forms in place, for fdn more than 20' below grade, add</i>		2.17	
1240	Forms in place, stairs, foundation stairway forms, 4 use	SF	9.19	
03182 0010 Forms in place, walls				
03182 0099 Box out for wall openings				
0100	Forms in place, to 10 SF, walls, box out for openings, to 16" th	EA	88.80	
9465	<i>Forms in place, for fdn more than 20' below grade, add</i>		16.30	
9470	<i>Forms in place, exterior walls, add</i>		6.52	
9475	<i>Forms in place, for elevated walls, add</i>		6.52	
9480	<i>Forms in place, for battered walls, 1 side battered, add</i>		8.88	
9485	<i>Forms in place, for battered walls, 2 sides battered, add</i>		13.32	
0150	Forms in place, > 10 SF, walls, box out for openings, to 16" thk	LF	7.69	
9465	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.40	
9470	<i>Forms in place, exterior walls, add</i>		0.56	
9475	<i>Forms in place, for elevated walls, add</i>		0.56	
9480	<i>Forms in place, for battered walls, 1 side battered, add</i>		0.77	
9485	<i>Forms in place, for battered walls, 2 sides battered, add</i>		1.15	
03182 0250 Brick shelf				
03182 0259 Above shelf				
0260	Forms in place, 1 use, add to wall forms, 4", brick shelf	SF	8.86	
9465	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.63	
9470	<i>Forms in place, exterior walls, add</i>		0.65	
9475	<i>Forms in place, for elevated walls, add</i>		0.65	
9480	<i>Forms in place, for battered walls, 1 side battered, add</i>		0.89	
9485	<i>Forms in place, for battered walls, 2 sides battered, add</i>		1.33	
0300	Forms in place, 2 use, add to wall forms, 4", brick shelf	SF	6.97	
9465	<i>Forms in place, for fdn more than 20' below grade, add</i>		1.42	
9470	<i>Forms in place, exterior walls, add</i>		0.57	
9475	<i>Forms in place, for elevated walls, add</i>		0.57	
9480	<i>Forms in place, for battered walls, 1 side battered, add</i>		0.70	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9485	Forms in place, for battered walls, 2 sides battered, add		1.05	
0350	Forms in place, 4 use, add to wall forms, 4", brick shelf	SF	6.16	
9465	Forms in place, for fdn more than 20' below grade, add		1.31	
9470	Forms in place, exterior walls, add		0.52	
9475	Forms in place, for elevated walls, add		0.52	
9480	Forms in place, for battered walls, 1 side battered, add		0.62	
9485	Forms in place, for battered walls, 2 sides battered, add		0.92	
03182 0499	Bulkhead forms			
0500	Forms in place, 2 piece, walls, bulkhead forms, w/keyway, 1 use	LF	8.88	
9465	Forms in place, for fdn more than 20' below grade, add		1.48	
9470	Forms in place, exterior walls, add		0.59	
9475	Forms in place, for elevated walls, add		0.59	
9480	Forms in place, for battered walls, 1 side battered, add		0.89	
9485	Forms in place, for battered walls, 2 sides battered, add		1.33	
0550	Forms in place, 3 piece, walls, bulkhead forms, w/keyway, 1 use	LF	12.69	
9465	Forms in place, for fdn more than 20' below grade, add		2.24	
9470	Forms in place, exterior walls, add		0.89	
9475	Forms in place, for elevated walls, add		0.89	
9480	Forms in place, for battered walls, 1 side battered, add		1.27	
9485	Forms in place, for battered walls, 2 sides battered, add		1.90	
03182 0699	Buttress forms			
0700	Forms in place, walls, buttress forms, to 8' high, 1 use	SF	7.62	
9465	Forms in place, for fdn more than 20' below grade, add		1.12	
9470	Forms in place, exterior walls, add		0.45	
9475	Forms in place, for elevated walls, add		0.45	
9480	Forms in place, for battered walls, 1 side battered, add		0.76	
9485	Forms in place, for battered walls, 2 sides battered, add		1.14	
0750	Forms in place, walls, buttress forms, to 8' high, 2 use	SF	5.37	
9465	Forms in place, for fdn more than 20' below grade, add		0.91	
9470	Forms in place, exterior walls, add		0.36	
9475	Forms in place, for elevated walls, add		0.36	
9480	Forms in place, for battered walls, 1 side battered, add		0.54	
9485	Forms in place, for battered walls, 2 sides battered, add		0.81	
0800	Forms in place, walls, buttress forms, to 8' high, 3 use	SF	4.66	
9465	Forms in place, for fdn more than 20' below grade, add		0.85	
9470	Forms in place, exterior walls, add		0.34	
9475	Forms in place, for elevated walls, add		0.34	
9480	Forms in place, for battered walls, 1 side battered, add		0.47	
9485	Forms in place, for battered walls, 2 sides battered, add		0.70	
0850	Forms in place, walls, buttress forms, to 8' high, 4 use	SF	4.30	
9465	Forms in place, for fdn more than 20' below grade, add		0.82	
9470	Forms in place, exterior walls, add		0.33	
9475	Forms in place, for elevated walls, add		0.33	
9480	Forms in place, for battered walls, 1 side battered, add		0.43	
9485	Forms in place, for battered walls, 2 sides battered, add		0.65	
03182 0999	Corbel (haunch) forms			
1000	Forms in place, add to wall, 1 use, corbel (haunch), to 12" W	LF	12.33	
9465	Forms in place, for fdn more than 20' below grade, add		2.61	
9470	Forms in place, exterior walls, add		1.04	
9475	Forms in place, for elevated walls, add		1.04	
9480	Forms in place, for battered walls, 1 side battered, add		1.23	
9485	Forms in place, for battered walls, 2 sides battered, add		1.85	
1050	Forms in place, add to wall, 2 use, corbel (haunch), to 12" W	LF	10.25	
9465	Forms in place, for fdn more than 20' below grade, add		2.30	
9470	Forms in place, exterior walls, add		0.92	
9475	Forms in place, for elevated walls, add		0.92	
9480	Forms in place, for battered walls, 1 side battered, add		1.03	
9485	Forms in place, for battered walls, 2 sides battered, add		1.54	
1100	Forms in place, add to wall, 3 use, corbel (haunch), to 12" W	LF	9.70	
9465	Forms in place, for fdn more than 20' below grade, add		2.24	
9470	Forms in place, exterior walls, add		0.89	
9475	Forms in place, for elevated walls, add		0.89	
9480	Forms in place, for battered walls, 1 side battered, add		0.97	
9485	Forms in place, for battered walls, 2 sides battered, add		1.46	
1150	Forms in place, add to wall, 4 use, corbel (haunch), to 12" W	LF	9.30	
9465	Forms in place, for fdn more than 20' below grade, add		2.17	
9470	Forms in place, exterior walls, add		0.87	
9475	Forms in place, for elevated walls, add		0.87	
9480	Forms in place, for battered walls, 1 side battered, add		0.93	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9485	Forms in place, for battered walls, 2 sides battered, add		1.40	
03182 1999	Job built plyform wall forms			
2000	Forms in place, walls, job built plyform, to 8' high, 1 use,	SF	6.39	
9465	Forms in place, for fdn more than 20' below grade, add		1.06	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.64	
9485	Forms in place, for battered walls, 2 sides battered, add		0.96	
2008	Forms in place, walls, job built plyform, to 8' high, 1 use,	SF	6.94	
9465	Forms in place, for fdn more than 20' below grade, add		1.06	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.69	
9485	Forms in place, for battered walls, 2 sides battered, add		1.04	
2050	Forms in place, walls, job built plyform, to 8' high, 2 use,	SF	4.81	
9465	Forms in place, for fdn more than 20' below grade, add		0.90	
9470	Forms in place, exterior walls, add		0.36	
9475	Forms in place, for elevated walls, add		0.36	
9480	Forms in place, for battered walls, 1 side battered, add		0.48	
9485	Forms in place, for battered walls, 2 sides battered, add		0.72	
2052	Forms in place, to 8' high, 2 use, walls, intr, job built	SF	4.08	
9465	Forms in place, for fdn more than 20' below grade, add		0.90	
9470	Forms in place, exterior walls, add		0.36	
9475	Forms in place, for elevated walls, add		0.36	
9480	Forms in place, for battered walls, 1 side battered, add		0.41	
9485	Forms in place, for battered walls, 2 sides battered, add		0.61	
2100	Forms in place, walls, job built plyform, to 8' high, 3 use,	SF	4.02	
9465	Forms in place, for fdn more than 20' below grade, add		0.79	
9470	Forms in place, exterior walls, add		0.32	
9475	Forms in place, for elevated walls, add		0.32	
9480	Forms in place, for battered walls, 1 side battered, add		0.40	
9485	Forms in place, for battered walls, 2 sides battered, add		0.60	
2102	Forms in place, to 8' high, 3 use, walls, intr, job built	SF	3.51	
9465	Forms in place, for fdn more than 20' below grade, add		0.79	
9470	Forms in place, exterior walls, add		0.32	
9475	Forms in place, for elevated walls, add		0.32	
9480	Forms in place, for battered walls, 1 side battered, add		0.35	
9485	Forms in place, for battered walls, 2 sides battered, add		0.53	
2150	Forms in place, walls, job built plyform, to 8' high, 4 use,	SF	3.81	
9465	Forms in place, for fdn more than 20' below grade, add		0.78	
9470	Forms in place, exterior walls, add		0.31	
9475	Forms in place, for elevated walls, add		0.31	
9480	Forms in place, for battered walls, 1 side battered, add		0.38	
9485	Forms in place, for battered walls, 2 sides battered, add		0.57	
2152	Forms in place, to 8' high, 4 use, walls, intr, job built	SF	3.39	
9465	Forms in place, for fdn more than 20' below grade, add		0.78	
9470	Forms in place, exterior walls, add		0.31	
9475	Forms in place, for elevated walls, add		0.31	
9480	Forms in place, for battered walls, 1 side battered, add		0.34	
9485	Forms in place, for battered walls, 2 sides battered, add		0.51	
03182 2409	Interior wall forms			
2410	Forms in place, walls, intr, plywood, 8-16' high, 1 use	SF	7.91	
9465	Forms in place, for fdn more than 20' below grade, add		1.40	
9470	Forms in place, exterior walls, add		0.56	
9475	Forms in place, for elevated walls, add		0.56	
9480	Forms in place, for battered walls, 1 side battered, add		0.79	
9485	Forms in place, for battered walls, 2 sides battered, add		1.19	
2420	Forms in place, walls, intr, plywood, 8-16' high, 2 use	SF	5.99	
9465	Forms in place, for fdn more than 20' below grade, add		1.14	
9470	Forms in place, exterior walls, add		0.45	
9475	Forms in place, for elevated walls, add		0.45	
9480	Forms in place, for battered walls, 1 side battered, add		0.60	
9485	Forms in place, for battered walls, 2 sides battered, add		0.90	
2430	Forms in place, walls, intr, plywood, 8-16' high, 3 use	SF	5.33	
9465	Forms in place, for fdn more than 20' below grade, add		1.04	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.53	
9485	Forms in place, for battered walls, 2 sides battered, add		0.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2440	Forms in place, walls, intr, plywood, 8-16' high, 4 use	SF	4.98	
9465	Forms in place, for fdn more than 20' below grade, add		0.99	
9470	Forms in place, exterior walls, add		0.40	
9475	Forms in place, for elevated walls, add		0.40	
9480	Forms in place, for battered walls, 1 side battered, add		0.50	
9485	Forms in place, for battered walls, 2 sides battered, add		0.75	
2445	Forms in place, walls, job built plyform 8-16' high, 1 use	SF	8.09	
9465	Forms in place, for fdn more than 20' below grade, add		1.40	
9470	Forms in place, exterior walls, add		0.56	
9475	Forms in place, for elevated walls, add		0.56	
9480	Forms in place, for battered walls, 1 side battered, add		0.81	
9485	Forms in place, for battered walls, 2 sides battered, add		1.21	
2450	Forms in place, walls, job built plyform 8-16' high, 2 use	SF	5.86	
9465	Forms in place, for fdn more than 20' below grade, add		1.14	
9470	Forms in place, exterior walls, add		0.45	
9475	Forms in place, for elevated walls, add		0.45	
9480	Forms in place, for battered walls, 1 side battered, add		0.59	
9485	Forms in place, for battered walls, 2 sides battered, add		0.88	
2500	Forms in place, walls, job built plyform 8-16' high, 3 use	SF	5.11	
9465	Forms in place, for fdn more than 20' below grade, add		1.04	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.51	
9485	Forms in place, for battered walls, 2 sides battered, add		0.77	
2550	Forms in place, walls, job built plyform 8-16' high, 4 use	SF	4.73	
9465	Forms in place, for fdn more than 20' below grade, add		0.99	
9470	Forms in place, exterior walls, add		0.40	
9475	Forms in place, for elevated walls, add		0.40	
9480	Forms in place, for battered walls, 1 side battered, add		0.47	
9485	Forms in place, for battered walls, 2 sides battered, add		0.71	
2700	Forms in place, 1 use, walls, job built plyform over 16' high	SF	9.31	
9465	Forms in place, for fdn more than 20' below grade, add		1.67	
9470	Forms in place, exterior walls, add		0.67	
9475	Forms in place, for elevated walls, add		0.67	
9480	Forms in place, for battered walls, 1 side battered, add		0.93	
9485	Forms in place, for battered walls, 2 sides battered, add		1.40	
2750	Forms in place, 2 use, walls, job built plyform over 16' high	SF	6.86	
9465	Forms in place, for fdn more than 20' below grade, add		1.35	
9470	Forms in place, exterior walls, add		0.54	
9475	Forms in place, for elevated walls, add		0.54	
9480	Forms in place, for battered walls, 1 side battered, add		0.69	
9485	Forms in place, for battered walls, 2 sides battered, add		1.03	
2800	Forms in place, 3 use, walls, job built plyform over 16' high	SF	6.04	
9465	Forms in place, for fdn more than 20' below grade, add		1.24	
9470	Forms in place, exterior walls, add		0.50	
9475	Forms in place, for elevated walls, add		0.50	
9480	Forms in place, for battered walls, 1 side battered, add		0.60	
9485	Forms in place, for battered walls, 2 sides battered, add		0.91	
2850	Forms in place, 4 use, walls, job built plyform over 16' high	SF	5.60	
9465	Forms in place, for fdn more than 20' below grade, add		1.19	
9470	Forms in place, exterior walls, add		0.47	
9475	Forms in place, for elevated walls, add		0.47	
9480	Forms in place, for battered walls, 1 side battered, add		0.56	
9485	Forms in place, for battered walls, 2 sides battered, add		0.84	
03182 3999 Radial wall forms				
4000	Forms in place, 1 use(below gr), walls, job built plyform smooth	SF	9.06	
9465	Forms in place, for fdn more than 20' below grade, add		1.60	
9470	Forms in place, exterior walls, add		0.64	
9475	Forms in place, for elevated walls, add		0.64	
9480	Forms in place, for battered walls, 1 side battered, add		0.91	
9485	Forms in place, for battered walls, 2 sides battered, add		1.36	
4050	Forms in place, 2 use(below gr), walls, job built plyform smooth	SF	6.68	
9465	Forms in place, for fdn more than 20' below grade, add		1.31	
9470	Forms in place, exterior walls, add		0.52	
9475	Forms in place, for elevated walls, add		0.52	
9480	Forms in place, for battered walls, 1 side battered, add		0.67	
9485	Forms in place, for battered walls, 2 sides battered, add		1.00	
4100	Forms in place, 3 use(below gr), walls, job built plyform smooth	SF	5.89	
9465	Forms in place, for fdn more than 20' below grade, add		1.21	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9470	Forms in place, exterior walls, add		0.48	
9475	Forms in place, for elevated walls, add		0.48	
9480	Forms in place, for battered walls, 1 side battered, add		0.59	
9485	Forms in place, for battered walls, 2 sides battered, add		0.88	
4150	Forms in place, 4 use(below gr), walls, job built plyform smooth	SF	5.53	
9465	Forms in place, for fdn mre than 20' below grade, add		1.17	
9470	Forms in place, exterior walls, add		0.47	
9475	Forms in place, for elevated walls, add		0.47	
9480	Forms in place, for battered walls, 1 side battered, add		0.55	
9485	Forms in place, for battered walls, 2 sides battered, add		0.83	
4220	Forms in place, 3 use(below gr), walls, smooth curved, plyform	SF	8.28	
9465	Forms in place, for fdn mre than 20' below grade, add		1.74	
9470	Forms in place, exterior walls, add		0.70	
9475	Forms in place, for elevated walls, add		0.70	
9480	Forms in place, for battered walls, 1 side battered, add		0.83	
9485	Forms in place, for battered walls, 2 sides battered, add		1.24	
03182 4299 Curved wall forms				
4300	Forms in place, 2' chords, 1 use, walls, job built plyform smooth	SF	7.56	
9465	Forms in place, for fdn mre than 20' below grade, add		1.35	
9470	Forms in place, exterior walls, add		0.54	
9475	Forms in place, for elevated walls, add		0.54	
9480	Forms in place, for battered walls, 1 side battered, add		0.76	
9485	Forms in place, for battered walls, 2 sides battered, add		1.13	
4350	Forms in place, 2' chord, 2 use, walls, job built plyform smooth	SF	5.60	
9465	Forms in place, for fdn mre than 20' below grade, add		1.10	
9470	Forms in place, exterior walls, add		0.44	
9475	Forms in place, for elevated walls, add		0.44	
9480	Forms in place, for battered walls, 1 side battered, add		0.56	
9485	Forms in place, for battered walls, 2 sides battered, add		0.84	
4400	Forms in place, 2' chord, 3 use, walls, job built plyform smooth	SF	4.92	
9465	Forms in place, for fdn mre than 20' below grade, add		1.02	
9470	Forms in place, exterior walls, add		0.41	
9475	Forms in place, for elevated walls, add		0.41	
9480	Forms in place, for battered walls, 1 side battered, add		0.49	
9485	Forms in place, for battered walls, 2 sides battered, add		0.74	
4450	Forms in place, 2' chord, 4 use, walls, job built plyform smooth	SF	4.62	
9465	Forms in place, for fdn mre than 20' below grade, add		0.98	
9470	Forms in place, exterior walls, add		0.39	
9475	Forms in place, for elevated walls, add		0.39	
9480	Forms in place, for battered walls, 1 side battered, add		0.46	
9485	Forms in place, for battered walls, 2 sides battered, add		0.69	
4500	Forms in place, 2' chords, over 8' high, 1 use, walls, job blt	SF	6.43	
9465	Forms in place, for fdn mre than 20' below grade, add		1.35	
9470	Forms in place, exterior walls, add		0.54	
9475	Forms in place, for elevated walls, add		0.54	
9480	Forms in place, for battered walls, 1 side battered, add		0.64	
9485	Forms in place, for battered walls, 2 sides battered, add		0.96	
4525	Forms in place, 2' chords, over 8' high, 2 use, walls, job blt	SF	4.97	
9465	Forms in place, for fdn mre than 20' below grade, add		1.10	
9470	Forms in place, exterior walls, add		0.44	
9475	Forms in place, for elevated walls, add		0.44	
9480	Forms in place, for battered walls, 1 side battered, add		0.50	
9485	Forms in place, for battered walls, 2 sides battered, add		0.75	
4550	Forms in place, 2' chords, over 8' high, 3 use, walls, job blt	SF	4.47	
9465	Forms in place, for fdn mre than 20' below grade, add		1.02	
9470	Forms in place, exterior walls, add		0.41	
9475	Forms in place, for elevated walls, add		0.41	
9480	Forms in place, for battered walls, 1 side battered, add		0.45	
9485	Forms in place, for battered walls, 2 sides battered, add		0.67	
4575	Forms in place, 2' chords, over 8' high, 4 use, walls, job blt	SF	4.25	
9465	Forms in place, for fdn mre than 20' below grade, add		0.98	
9470	Forms in place, exterior walls, add		0.39	
9475	Forms in place, for elevated walls, add		0.39	
9480	Forms in place, for battered walls, 1 side battered, add		0.43	
9485	Forms in place, for battered walls, 2 sides battered, add		0.64	
03182 4599 Retaining wall forms, battered				
4600	Forms in place, to 8' high, 1 use, ret wall.job built plyform	SF	7.26	
9465	Forms in place, for fdn mre than 20' below grade, add		1.31	
9470	Forms in place, exterior walls, add		0.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9475	Forms in place, for elevated walls, add		0.52	
9480	Forms in place, for battered walls, 1 side battered, add		0.73	
9485	Forms in place, for battered walls, 2 sides battered, add		1.09	
4650	Forms in place, to 8' high, 2 use, ret wall, job built plyform	SF	5.53	
9465	Forms in place, for fdn more than 20' below grade, add		1.10	
9470	Forms in place, exterior walls, add		0.44	
9475	Forms in place, for elevated walls, add		0.44	
9480	Forms in place, for battered walls, 1 side battered, add		0.55	
9485	Forms in place, for battered walls, 2 sides battered, add		0.83	
4700	Forms in place, to 8' high, 3 use, ret wall, job built plyform	SF	4.99	
9465	Forms in place, for fdn more than 20' below grade, add		1.04	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.50	
9485	Forms in place, for battered walls, 2 sides battered, add		0.75	
4750	Forms in place, to 8' high, 4 use, ret wall, job built plyform	SF	4.65	
9465	Forms in place, for fdn more than 20' below grade, add		1.00	
9470	Forms in place, exterior walls, add		0.40	
9475	Forms in place, for elevated walls, add		0.40	
9480	Forms in place, for battered walls, 1 side battered, add		0.47	
9485	Forms in place, for battered walls, 2 sides battered, add		0.70	
4900	Forms in place, 8'-16', 1 use, ret wall, job built plyform	SF	8.75	
9465	Forms in place, for fdn more than 20' below grade, add		1.63	
9470	Forms in place, exterior walls, add		0.65	
9475	Forms in place, for elevated walls, add		0.65	
9480	Forms in place, for battered walls, 1 side battered, add		0.88	
9485	Forms in place, for battered walls, 2 sides battered, add		1.31	
4950	Forms in place, 8'-16', 2 use, ret wall, job built plyform	SF	6.52	
9465	Forms in place, for fdn more than 20' below grade, add		1.33	
9470	Forms in place, exterior walls, add		0.53	
9475	Forms in place, for elevated walls, add		0.53	
9480	Forms in place, for battered walls, 1 side battered, add		0.65	
9485	Forms in place, for battered walls, 2 sides battered, add		0.98	
5000	Forms in place, 8'-16', 3 use, ret wall, job built plyform	SF	6.02	
9465	Forms in place, for fdn more than 20' below grade, add		1.28	
9470	Forms in place, exterior walls, add		0.51	
9475	Forms in place, for elevated walls, add		0.51	
9480	Forms in place, for battered walls, 1 side battered, add		0.60	
9485	Forms in place, for battered walls, 2 sides battered, add		0.90	
5050	Forms in place, 8'-16', 4 use, ret wall, job built plyform	SF	5.61	
9465	Forms in place, for fdn more than 20' below grade, add		1.22	
9470	Forms in place, exterior walls, add		0.49	
9475	Forms in place, for elevated walls, add		0.49	
9480	Forms in place, for battered walls, 1 side battered, add		0.56	
9485	Forms in place, for battered walls, 2 sides battered, add		0.84	
03182 5099 Retaining wall form smooth curve				
5100	Forms in place, retaining wall, smooth curve, 1 use	SF	11.13	
9465	Forms in place, for fdn more than 20' below grade, add		1.96	
9470	Forms in place, exterior walls, add		0.78	
9475	Forms in place, for elevated walls, add		0.78	
9480	Forms in place, for battered walls, 1 side battered, add		1.11	
9485	Forms in place, for battered walls, 2 sides battered, add		1.67	
5120	Forms in place, retaining wall, smooth curve, 2 use	SF	8.49	
9465	Forms in place, for fdn more than 20' below grade, add		1.67	
9470	Forms in place, exterior walls, add		0.67	
9475	Forms in place, for elevated walls, add		0.67	
9480	Forms in place, for battered walls, 1 side battered, add		0.85	
9485	Forms in place, for battered walls, 2 sides battered, add		1.27	
5130	Forms in place, retaining wall, smooth curve, 3 use	SF	7.58	
9465	Forms in place, for fdn more than 20' below grade, add		1.57	
9470	Forms in place, exterior walls, add		0.63	
9475	Forms in place, for elevated walls, add		0.63	
9480	Forms in place, for battered walls, 1 side battered, add		0.76	
9485	Forms in place, for battered walls, 2 sides battered, add		1.14	
5140	Forms in place, retaining wall, smooth curve, 4 use	SF	7.10	
9465	Forms in place, for fdn more than 20' below grade, add		1.51	
9470	Forms in place, exterior walls, add		0.60	
9475	Forms in place, for elevated walls, add		0.60	
9480	Forms in place, for battered walls, 1 side battered, add		0.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9485	Forms in place, for battered walls, 2 sides battered, add		1.07	
03182 5750	Liners for forms			
7050	Forms in place, add, wood, beveled edge, 3/4" deep, 1 use,	LF	2.86	
9465	Forms in place, for fdn more than 20' below grade, add		0.65	
9470	Forms in place, exterior walls, add		0.26	
9475	Forms in place, for elevated walls, add		0.26	
9480	Forms in place, for battered walls, 1 side battered, add		0.29	
9485	Forms in place, for battered walls, 2 sides battered, add		0.43	
7051	Forms in place, add, conc fin, square edge, 1 use, liner	LF	2.86	
9465	Forms in place, for fdn more than 20' below grade, add		0.65	
9470	Forms in place, exterior walls, add		0.26	
9475	Forms in place, for elevated walls, add		0.26	
9480	Forms in place, for battered walls, 1 side battered, add		0.29	
9485	Forms in place, for battered walls, 2 sides battered, add		0.43	
7200	Forms in place, add, solid board uniform finish, 1 use, liner	SF	6.08	
9465	Forms in place, for fdn more than 20' below grade, add		1.31	
9470	Forms in place, exterior walls, add		0.52	
9475	Forms in place, for elevated walls, add		0.52	
9480	Forms in place, for battered walls, 1 side battered, add		0.61	
9485	Forms in place, for battered walls, 2 sides battered, add		0.91	
7300	Forms in place, add, non-uniform board finish, 1 use, liner	SF	7.02	
9465	Forms in place, for fdn more than 20' below grade, add		1.57	
9470	Forms in place, exterior walls, add		0.63	
9475	Forms in place, for elevated walls, add		0.63	
9480	Forms in place, for battered walls, 1 side battered, add		0.70	
9485	Forms in place, for battered walls, 2 sides battered, add		1.05	
03182 7499	Lintel or sill forms			
7500	Forms in place, walls, lintel or sill forms, 1 use	SF	11.55	
9465	Forms in place, for fdn more than 20' below grade, add		2.22	
9470	Forms in place, exterior walls, add		0.89	
9475	Forms in place, for elevated walls, add		0.89	
9480	Forms in place, for battered walls, 1 side battered, add		1.16	
9485	Forms in place, for battered walls, 2 sides battered, add		1.73	
7520	Forms in place, walls, lintel or sill forms, 2 use	SF	9.31	
9465	Forms in place, for fdn more than 20' below grade, add		1.96	
9470	Forms in place, exterior walls, add		0.78	
9475	Forms in place, for elevated walls, add		0.78	
9480	Forms in place, for battered walls, 1 side battered, add		0.93	
9485	Forms in place, for battered walls, 2 sides battered, add		1.40	
7540	Forms in place, walls, lintel or sill forms, 3 use	SF	8.47	
9465	Forms in place, for fdn more than 20' below grade, add		1.85	
9470	Forms in place, exterior walls, add		0.74	
9475	Forms in place, for elevated walls, add		0.74	
9480	Forms in place, for battered walls, 1 side battered, add		0.85	
9485	Forms in place, for battered walls, 2 sides battered, add		1.27	
7560	Forms in place, walls, lintel or sill forms, 4 use	SF	8.06	
9465	Forms in place, for fdn more than 20' below grade, add		1.80	
9470	Forms in place, exterior walls, add		0.72	
9475	Forms in place, for elevated walls, add		0.72	
9480	Forms in place, for battered walls, 1 side battered, add		0.81	
9485	Forms in place, for battered walls, 2 sides battered, add		1.21	
03182 7799	Modular prefabricated plywood			
7800	Forms in place, 1 use/m ² , walls, modular prefab plywood, to 8' H	SF	2.86	
9465	Forms in place, for fdn more than 20' below grade, add		0.43	
9470	Forms in place, exterior walls, add		0.17	
9475	Forms in place, for elevated walls, add		0.17	
9480	Forms in place, for battered walls, 1 side battered, add		0.29	
9485	Forms in place, for battered walls, 2 sides battered, add		0.43	
7820	Forms in place, 2 use/m ² , walls, modular prefab plywood, to 8' H	SF	2.30	
9465	Forms in place, for fdn more than 20' below grade, add		0.42	
9470	Forms in place, exterior walls, add		0.17	
9475	Forms in place, for elevated walls, add		0.17	
9480	Forms in place, for battered walls, 1 side battered, add		0.23	
9485	Forms in place, for battered walls, 2 sides battered, add		0.35	
7840	Forms in place, 3 use/m ² , walls, modular prefab plywood, to 8' H	SF	2.11	
9465	Forms in place, for fdn more than 20' below grade, add		0.41	
9470	Forms in place, exterior walls, add		0.17	
9475	Forms in place, for elevated walls, add		0.17	
9480	Forms in place, for battered walls, 1 side battered, add		0.21	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9485	Forms in place, for battered walls, 2 sides battered, add		0.32	
7860	Forms in place, 4 use/m ² , walls, modular prefab plywood, to 8' H	SF	1.98	
9465	Forms in place, for fdn more than 20' below grade, add		0.40	
9470	Forms in place, exterior walls, add		0.16	
9475	Forms in place, for elevated walls, add		0.16	
9480	Forms in place, for battered walls, 1 side battered, add		0.20	
9485	Forms in place, for battered walls, 2 sides battered, add		0.30	
8000	Forms in place, to 16' high, 1 use/m ² , walls, modular prefab	SF	4.11	
9465	Forms in place, for fdn more than 20' below grade, add		0.71	
9470	Forms in place, exterior walls, add		0.29	
9475	Forms in place, for elevated walls, add		0.29	
9480	Forms in place, for battered walls, 1 side battered, add		0.41	
9485	Forms in place, for battered walls, 2 sides battered, add		0.62	
8020	Forms in place, to 16' high, 2 use/m ² , walls, modular prefab	SF	3.45	
9465	Forms in place, for fdn more than 20' below grade, add		0.69	
9470	Forms in place, exterior walls, add		0.28	
9475	Forms in place, for elevated walls, add		0.28	
9480	Forms in place, for battered walls, 1 side battered, add		0.35	
9485	Forms in place, for battered walls, 2 sides battered, add		0.52	
8040	Forms in place, to 16' high, 3 use/m ² , walls, modular prefab	SF	3.15	
9465	Forms in place, for fdn more than 20' below grade, add		0.66	
9470	Forms in place, exterior walls, add		0.27	
9475	Forms in place, for elevated walls, add		0.27	
9480	Forms in place, for battered walls, 1 side battered, add		0.32	
9485	Forms in place, for battered walls, 2 sides battered, add		0.47	
8060	Forms in place, to 16' high, 4 use/m ² , walls, modular prefab	SF	2.98	
9465	Forms in place, for fdn more than 20' below grade, add		0.64	
9470	Forms in place, exterior walls, add		0.26	
9475	Forms in place, for elevated walls, add		0.26	
9480	Forms in place, for battered walls, 1 side battered, add		0.30	
9485	Forms in place, for battered walls, 2 sides battered, add		0.45	
8100	Forms in place, > 16' high, 1 use/m ² , walls, modular prefab	SF	4.36	
9465	Forms in place, for fdn more than 20' below grade, add		0.71	
9470	Forms in place, exterior walls, add		0.29	
9475	Forms in place, for elevated walls, add		0.29	
9480	Forms in place, for battered walls, 1 side battered, add		0.44	
9485	Forms in place, for battered walls, 2 sides battered, add		0.65	
8120	Forms in place, > 16' high, 2 use/m ² , walls, modular prefab	SF	3.59	
9465	Forms in place, for fdn more than 20' below grade, add		0.69	
9470	Forms in place, exterior walls, add		0.28	
9475	Forms in place, for elevated walls, add		0.28	
9480	Forms in place, for battered walls, 1 side battered, add		0.36	
9485	Forms in place, for battered walls, 2 sides battered, add		0.54	
8140	Forms in place, > 16' high, 3 use/m ² , walls, modular prefab	SF	3.25	
9465	Forms in place, for fdn more than 20' below grade, add		0.66	
9470	Forms in place, exterior walls, add		0.27	
9475	Forms in place, for elevated walls, add		0.27	
9480	Forms in place, for battered walls, 1 side battered, add		0.33	
9485	Forms in place, for battered walls, 2 sides battered, add		0.49	
8160	Forms in place, > 16' high, 4 use/m ² , walls, modular prefab	SF	3.06	
9465	Forms in place, for fdn more than 20' below grade, add		0.64	
9470	Forms in place, exterior walls, add		0.26	
9475	Forms in place, for elevated walls, add		0.26	
9480	Forms in place, for battered walls, 1 side battered, add		0.31	
9485	Forms in place, for battered walls, 2 sides battered, add		0.46	
03182 8599	Pilasters			
8600	Forms in place, walls, pilasters, 1 use	SF	8.31	
9465	Forms in place, for fdn more than 20' below grade, add		1.45	
9470	Forms in place, exterior walls, add		0.58	
9475	Forms in place, for elevated walls, add		0.58	
9480	Forms in place, for battered walls, 1 side battered, add		0.83	
9485	Forms in place, for battered walls, 2 sides battered, add		1.25	
8620	Forms in place, walls, pilasters, 2 use	SF	6.12	
9465	Forms in place, for fdn more than 20' below grade, add		1.19	
9470	Forms in place, exterior walls, add		0.47	
9475	Forms in place, for elevated walls, add		0.47	
9480	Forms in place, for battered walls, 1 side battered, add		0.61	
9485	Forms in place, for battered walls, 2 sides battered, add		0.92	
8640	Forms in place, walls, pilasters, 3 use	SF	5.24	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9465	Forms in place, for fdn more than 20' below grade, add		1.06	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.52	
9485	Forms in place, for battered walls, 2 sides battered, add		0.79	
8660	Forms in place, walls, pilasters, 4 use	SF	4.88	
9465	Forms in place, for fdn more than 20' below grade, add		1.02	
9470	Forms in place, exterior walls, add		0.41	
9475	Forms in place, for elevated walls, add		0.41	
9480	Forms in place, for battered walls, 1 side battered, add		0.49	
9485	Forms in place, for battered walls, 2 sides battered, add		0.73	
03182 8709 Column, pier and pilaster form				
8710	Forms in place, plywood, 1 use, column, below grade,	SF	8.31	
9465	Forms in place, for fdn more than 20' below grade, add		1.45	
9470	Forms in place, exterior walls, add		0.58	
9475	Forms in place, for elevated walls, add		0.58	
9480	Forms in place, for battered walls, 1 side battered, add		0.83	
9485	Forms in place, for battered walls, 2 sides battered, add		1.25	
8720	Forms in place, plywood, 2 use, column, below grade,	SF	6.12	
9465	Forms in place, for fdn more than 20' below grade, add		1.19	
9470	Forms in place, exterior walls, add		0.47	
9475	Forms in place, for elevated walls, add		0.47	
9480	Forms in place, for battered walls, 1 side battered, add		0.61	
9485	Forms in place, for battered walls, 2 sides battered, add		0.92	
8730	Forms in place, plywood, 3 use, column, below grade,	SF	5.23	
9465	Forms in place, for fdn more than 20' below grade, add		1.06	
9470	Forms in place, exterior walls, add		0.42	
9475	Forms in place, for elevated walls, add		0.42	
9480	Forms in place, for battered walls, 1 side battered, add		0.52	
9485	Forms in place, for battered walls, 2 sides battered, add		0.78	
8740	Forms in place, plywood, 4 use, column, below grade,	SF	4.86	
9465	Forms in place, for fdn more than 20' below grade, add		1.02	
9470	Forms in place, exterior walls, add		0.41	
9475	Forms in place, for elevated walls, add		0.41	
9480	Forms in place, for battered walls, 1 side battered, add		0.49	
9485	Forms in place, for battered walls, 2 sides battered, add		0.73	
03196 0009 Slipforms				
0010	Slipforms, silos	SF	1.90	
0060	Metal Clm Forms, 48" Sq, Hvy Duty 4 Uses/Mnth	LF	18.39	
0070	Metal Clm Forms, 60" Sq, Hvy Duty 4 Uses/Mnth	LF	20.61	
1000	Slipforms, buildings	SF	2.18	
03198 0009 Waterstop				
03198 0009 PVC				
03198 0009 Ribbed				
0010	Waterstop, PVC, ribbed 3/16" thick, 4" wide	LF	3.12	
0050	Waterstop, PVC, ribbed 3/16" thick, 6" wide	LF	3.94	
03198 0499 Ribbed, with center bulb				
0500	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	LF	4.04	
0550	Waterstop, PVC, ribbed, w/center bulb, 3/8" thick, 9" wide	LF	5.51	
0600	Waterstop, PVC, ribbed, w/center bulb, 1/2" thick, 9" wide	LF	6.36	
03198 0799 Dumbbell type				
0800	Waterstop, PVC, dumbbell, 6" wide, 3/16" thick	LF	3.37	
0850	Waterstop, PVC, dumbbell, 6" wide, 3/8" thick	LF	4.88	
1000	Waterstop, PVC, dumbbell, 9" wide, plain, 3/8" thick	LF	6.83	
1050	Waterstop, PVC, dumbbell, 9" wide, 3/8" thick, center bulb	LF	9.91	
03198 1999 Rubber				
03198 1999 Flat dumbbell				
2000	Waterstop, rubber, flat dumbbell, 3/8" thick, 6" wide	LF	7.65	
2050	Waterstop, rubber, flat dumbbell, 3/8" thick, 9" wide	LF	11.37	
03198 2999 Center bulb				
3000	Waterstop, rubber, center bulb, 1/4" thick, 6" wide	LF	8.04	
03198 3499 Center bulb split				
3500	Waterstop, rubber, center bulb split, 3/8" thick, 6" wide	LF	9.14	
3550	Waterstop, rubber, center bulb split, 3/8" thick, 9" wide	LF	14.94	

03200 Concrete Reinforcement

Note: Includes all accessories, epoxy coated when epoxy reinforcing is used.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03210 Reinforcing Steel				
03217 0010 Reinforcing in place				
03217 0299 Spirals, hot rolled				
0300	Reinforcing in place, spirals, hot rolled, 8" to 15" dia	TON	1,649.36	
0320	Reinforcing in place, spirals, hot rolled, 15" to 24" dia	TON	1,594.62	
0330	Reinforcing in place, spirals, hot rolled, 24" to 36" dia	TON	1,570.05	
0340	Reinforcing in place, spirals, hot rolled, 36" to 48" dia	TON	1,554.24	
0360	Reinforcing in place, spirals, hot rolled, 48" to 64" dia	TON	1,591.21	
0380	Reinforcing in place, spirals, hot rolled, 64" to 84" dia	TON	1,656.33	
0390	Reinforcing in place, spirals, hot rolled, 84" to 96" dia	TON	1,641.14	
03217 0499 Footings				
0500	Reinforcing in place, footings, #4 to #7	TON	1,120.86	
2300	Reinforcing in place, for epoxy coated rebar, add		613.13	
0550	Reinforcing in place, footings, #8 to #18	TON	877.03	
2300	Reinforcing in place, for epoxy coated rebar, add		580.85	
03217 0599 Slab on grade				
0600	Reinforcing in place, slab on grade, #3 to #7	TON	1,076.71	
2300	Reinforcing in place, for epoxy coated rebar, add		613.13	
03217 0699 Walls				
0700	Reinforcing in place, walls, #3 to #7	TON	968.54	
2300	Reinforcing in place, for epoxy coated rebar, add		613.13	
0750	Reinforcing in place, walls, #8 to #18	TON	879.69	
2300	Reinforcing in place, for epoxy coated rebar, add		613.13	
03217 2399 Dowels				
2400	Reinforcing in place, dowels, 2' long, deformed, #3	EA	1.29	
2410	Reinforcing in place, dowels, 2' long, deformed, #4	EA	1.59	
2420	Reinforcing in place, dowels, 2' long, deformed, #5	EA	1.97	
2430	Reinforcing in place, dowels, 2' long, deformed, #6	EA	2.55	
2440	Reinforcing in place, dowels, 2' long, deformed, #8	EA	5.71	
03217 2462 Epoxy coated dowels				
2463	Reinforcing in place, dowels, epoxy coated, 2' long, #3	EA	1.38	
2464	Reinforcing in place, dowels, epoxy coated, 2' long, #4	EA	1.70	
2465	Reinforcing in place, dowels, epoxy coated, 2' long, #5	EA	2.12	
2466	Reinforcing in place, dowels, epoxy coated, 2' long, #6	EA	2.74	
2467	Reinforcing in place, dowels, epoxy coated, 2' long, #7	EA	4.34	
2468	Reinforcing in place, dowels, epoxy coated, 2' long, #8	EA	6.61	
2469	Reinforcing in place, dowels, epoxy coated, 2' long, #9	EA	7.62	
2470	Reinforcing in place, dowels, epoxy coated, 2' long, #10	EA	8.37	
03219 0010 Splicing reinforcing bars				
03219 0800 Mechanical butt splice				
0810	Splicing reinf bar, columns only #11 bars, mech butt, compressio	EA	49.24	
1400	Reinf, mech butt splice, if equip handling not required, deduct		-16.93	
03219 1600 Mechanical threaded type				
1700	Splicing reinf bar, #10 & #11, mech thread, no bar thread, str	EA	34.22	
03220 Welded Wire Fabric				
03227 0010 Welded wire fabric				
03227 0050 Sheets				
0100	Welded wire fabric, 6 x 6 - W1.4 x W1.4 (10 x 10) 21 lb/CSF,	SF	0.25	
0960	Welded wire fabric, over 10 ton, deduct		-0.01	
0200	Welded wire fabric, 6 x 6 - W2.1 x W2.1 (8 x 8) 30 lb/CSF, sheet	SF	0.30	
0960	Welded wire fabric, over 10 ton, deduct		-0.01	
0300	Welded wire fabric, 6 x 6 - W2.9 x W2.9 (6 x 6) 42 lb/CSF, sheet	SF	0.36	
0960	Welded wire fabric, over 10 ton, deduct		-0.02	
0400	Welded wire fabric, 6 x 6 - W1 x W1 (4 x 4) 58 lb/CSF, sheets	SF	0.44	
0960	Welded wire fabric, over 10 ton, deduct		-0.02	
0500	Welded wire fabric, 4 x 4 - W1.4 x W1.4 (10 x 10) 31 lb/CSF,	SF	0.29	
0960	Welded wire fabric, over 10 ton, deduct		-0.01	
0600	Welded wire fabric, 4 x 4 - W2.1 x W2.1 (8 x 8) 44 lb/CSF, sheet	SF	0.34	
0960	Welded wire fabric, over 10 ton, deduct		-0.02	
0700	Welded wire fabric, 4 x 4 - W1 x W1 (4 x 4) 85 lb/CSF, sheets	SF	0.57	
0960	Welded wire fabric, over 10 ton, deduct		-0.04	
03227 0750 Rolls				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	Welded wire fabric, beam & col wrap, 2 x 2 - #14 galv @ 21 lb,	CSF	98.09	
0960	Welded wire fabric, over 10 ton, deduct		-1.61	
0900	Welded wire fabric, 2 x 2 - #12 galv for gunite reinforcing,	CSF	102.17	
0960	Welded wire fabric, over 10 ton, deduct		-2.02	
03228 0010	Fibrous reinforcing			
03228 0109	Synthetic fibers			
0110	Fibrous reinforcing, add to conc, 1-1/2 lb per CY, synthetic	CY	7.62	
03228 0149	Steel fibers			
0170	Fibrous reinforcing, add to conc, steel fibers, 75 lb per CY	CY	44.38	
03230	Stressing Tendons			
03237 0010	Prestressing steel			
03237 0099	Grouted strand			
0100	Prestressing steel, grouted strand, 50' span, 100 kip	EA	524.27	
0150	Prestressing steel, grouted strand, 50' span, 300 kip	EA	1,021.32	
0300	Prestressing steel, grouted strand, 100' span, 100 kip	EA	912.01	
0350	Prestressing steel, grouted strand, 100' span, 300 kip	EA	2,045.98	
0500	Prestressing steel, grouted strand, 200' span, 100 kip	EA	1,584.29	
0550	Prestressing steel, grouted strand, 200' span, 300 kip	EA	4,011.93	
03237 0799	Grouted bars			
0800	Prestressing steel, grouted bars, 50' span, 42 kip	EA	553.42	
0850	Prestressing steel, grouted bars, 50' span, 143 kip	EA	1,157.72	
1000	Prestressing steel, grouted bars, 75' span, 42 kip	EA	706.72	
1050	Prestressing steel, grouted bars, 75' span, 143 kip	EA	1,826.36	
03237 1199	Ungouted strand			
1200	Prestressing steel, ungrouted strand, 50' span, 100 kip	EA	358.09	
1250	Prestressing steel, ungrouted strand, 50' span, 300 kip	EA	1,001.39	
1400	Prestressing steel, ungrouted strand, 100' span, 100 kip	EA	689.37	
1450	Prestressing steel, ungrouted strand, 100' span, 300 kip	EA	1,979.54	
1600	Prestressing steel, ungrouted strand, 200' span, 100 kip	EA	1,378.73	
1650	Prestressing steel, ungrouted strand, 200' span, 300 kip	EA	3,934.23	
03237 1799	Ungouted bars			
1800	Prestressing steel, ungrouted bars, 50' span, 42 kip	EA	439.92	
1850	Prestressing steel, ungrouted bars, 50' span, 143 kip	EA	929.02	
2000	Prestressing steel, ungrouted bars, 75' span, 42 kip	EA	542.53	
2050	Prestressing steel, ungrouted bars, 75' span, 143 kip	EA	1,501.90	
03300	Cast-In-Place Concrete			
03301	Structural Concrete			
03311 2000	Delivery Fee For Small Purchases			
2001	Delivery Fee For Concrete Purchases Under 5 Cy	EA	51.42	
03314 0010	Cement, material only			
03314 0199	Portland			
0200	Cement, portland, plain or air entrained, TL or CL, 94 lb bags	EA	8.23	
0300	Cement, portland, plain, trucked in bulk	CWT	4.37	
03318 0010	Concrete admixtures & surface treatments			
03318 0199	Air entraining agent			
0200	Conc admix/surface trtmt, 55 gal, .7 to 1.5 oz/bag, air	GAL	5.54	
0210	Water Reduc'g Admix, 3000PSI Conc	GAL	8.17	
0220	Set Retarding Admix, 3000PSI Conc	GAL	15.71	
0230	Calcium Chloride Admix Added To Concrete At Plant(Winter Charge)	CY	3.09	
0240	Nycon Fibermesh Or Equal		13.21	
0400	Conc admix&surf trtmt, TL lot, calcium chloride, 100 LB bags, FOB	TON	383.43	
03318 0599	Colors, integral			
0610	Conc admix/surface trtmt, 2-10 lb/bag of cem avg, colors,	CY	11.95	
0620	Conc admix/surface trtmt, 2-10 lb/bag of cem max, colors,	CY	25.94	
03326 0008	Concrete, ready mix			
03326 0009	Concrete, ready mix, material only			
0100	Concrete ready mix, regular weight 1:3:5 mix 2500 psi	CY	62.14	
1000	Concrete ready mix, for high early strength cement, add		6.21	
1010	For Type 5 Cement Concrete Add		8.08	
1020	For White Cement Concrete Add		7.46	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.24	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.49	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-3.73	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		1.86	
0150	Concrete, ready mix, regular weight 1:3:5 mix 3000 psi	CY	67.24	
1000	Concrete ready mix, for high early strength cement, add		6.72	
1010	For Type 5 Cement Concrete Add		8.74	
1020	For White Cement Concrete Add		8.07	
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.34	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.69	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-4.03	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		2.02	
0200	Concrete ready mix, regular weight 1:3:5 mix 3500 psi	CY	70.84	
1000	Concrete ready mix, for high early strength cement, add		7.08	
1010	For Type 5 Cement Concrete Add		9.21	
1020	For White Cement Concrete Add		8.50	
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.42	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.83	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-4.25	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		2.13	
0300	Concrete ready mix, regular weight 1:3:5 mix 4000 psi	CY	67.24	
1000	Concrete ready mix, for high early strength cement, add		6.72	
1010	For Type 5 Cement Concrete Add		8.74	
1020	For White Cement Concrete Add		8.07	
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.34	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.69	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-4.03	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		2.02	
0350	Concrete ready mix, regular weight 1:3:5 mix 4500 psi	CY	70.84	
1000	Concrete ready mix, for high early strength cement, add		7.08	
1010	For Type 5 Cement Concrete Add		9.21	
1020	For White Cement Concrete Add		8.50	
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.42	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.83	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-4.25	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		2.13	
0400	Concrete ready mix, regular weight 1:3:5 mix 5000 psi	CY	73.85	
1000	Concrete ready mix, for high early strength cement, add		7.39	
1010	For Type 5 Cement Concrete Add		9.60	
1020	For White Cement Concrete Add		8.86	
3101	Quantity Discount For Concrete Purchases Of 100 Cy To 200 Cy		-1.48	
3102	Quantity Discount For Concrete Purchases Of 201 Cy To 400 Cy		-2.95	
3103	Quantity Discount For Concrete Purchases Over 400 Cy		-4.43	
3104	Quantity Adjustment For Concrete Purchases Of 9 Cy To 36 Cy		2.22	
4000	Concrete ready mix, roller compacted concrete	CY	57.15	
03330 0010	Concrete in place			
03334 0009	Curing			
0010	Curing, burlap, 4 uses assumed, 7.5 oz	CSF	11.21	
0100	Curing, burlap, 4 uses assumed, 12 oz	CSF	12.84	
0200	Curing, waterproof curing paper, 2 ply, reinforced	CSF	14.86	
0300	Curing, sprayed membrane curing compound	CSF	7.79	
03356 0009	Grout (1 Part Cement To 3 Parts Sand By Volume)			
03356 0009	Non-shrink metallic grout			
0050	Grout, column & machine bases, 2" deep, non-shrink, metallic	SF	20.89	
0110	Grout, nonshrink metallic grout, 1" deep for grouting bases	SF	12.75	
03356 0299	Non-shrink, non-metallic grout			
0300	Grout, non-shrink, non-metallic grout, 1" deep	SF	16.94	
0350	Grout, non-shrink, non-metallic grout, 2" deep	SF	29.02	
03356 5009	Fluid type nonmetallic grout			
5010	Grout, fluid type, non-metallic grout, 1" deep	SF	10.46	
5020	Grout, fluid type, non-metallic grout, 2" deep	SF	16.33	
03356 6039	Portland cement grout			
6040	Grout, portland cement, 1:3 mix, joint, 1/2" x 4" wide	LF	0.61	
6060	Grout, portland cement, 1:3 mix, joint, 1/2" x 6" wide	LF	0.79	
6080	Grout, portland cement, 1:3 mix, joint, 1/2" x 8" wide	LF	1.05	
6140	Grout, portland cement, 1:3 mix, joint, 1" x 4" wide	LF	0.86	
6160	Grout, portland cement, 1:3 mix, joint, 1" x 6" wide	LF	1.11	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6180	Grout, portland cement, 1:3 mix, joint, 1" x 8" wide	LF	1.46	
7140	Grout, non-metallic, non-shrink, joint, 1/2" x 4" wide	LF	0.60	
7160	Grout, non-metallic, non-shrink, joint, 1/2" x 6" wide	LF	0.76	
7180	Grout, non-metallic, non-shrink, joint, 1/2" x 8" wide	LF	1.00	
7240	Grout, non-metallic, non-shrink, joint, 1" x 4" wide	LF	0.81	
7260	Grout, non-metallic, non-shrink, joint, 1" x 6" wide	LF	1.04	
7280	Grout, non-metallic, non-shrink, joint, 1" x 8" wide	LF	1.36	
03362 0009	Shotcrete			
03362 0009	Shotcrete			
0010	Shotcrete placed @ 10 CY per hour, 3000 PSI	CY	103.35	
1010	Shotcrete, fiber reinforced, 1" thk	SF	2.19	
1020	Shotcrete, fiber reinforced, 2" thk	SF	4.28	
1030	Shotcrete, fiber reinforced, 3" thk	SF	5.16	
1040	Shotcrete, fiber reinforced, 4" thk	SF	6.09	
03368 0010	Patching concrete			
03368 0099	Floors			
0100	Patching conc, floors, regular grout, 1/4" thick, small areas	SF	1.66	
0150	Patching conc, floors, 1/4" thick, small areas, epoxy grout	SF	3.45	
03368 2000	Patching Concrete Walls			
	NOTE: Includes Cleaning, Epoxy Grout, & Chipping			
2100	Light Repair, Less than 1/3 wall damaged	SF	4.32	
2150	Moderate Repair, 1/3 to 2/3 wall damaged.	SF	5.64	
2200	Heavy Repair, More than 2/3 Wall Damaged.	SF	7.23	
03372 0010	Placing concrete, see 03326 for material costs			
03372 0049	Beams, elevated			
03372 0049	Small beams			
0050	Placing conc, beams, small, elev, pumped	CY	44.99	
5910	Placing conc, for walking cart handling 150' haul, add		18.00	
5915	Placing conc, for riding cart handling 150' haul, add		11.25	
0100	Placing conc, beams, small, elev, w/crane & bucket	CY	57.47	
5910	Placing conc, for walking cart handling 150' haul, add		22.99	
5915	Placing conc, for riding cart handling 150' haul, add		14.37	
03372 0199	Large beams			
0200	Placing conc, beams, large, elev, pumped	CY	29.99	
5910	Placing conc, for walking cart handling 150' haul, add		12.00	
5915	Placing conc, for riding cart handling 150' haul, add		7.50	
0250	Placing conc, beams, large, elev, w/crane & bucket	CY	39.79	
5910	Placing conc, for walking cart handling 150' haul, add		15.92	
5915	Placing conc, for riding cart handling 150' haul, add		9.95	
03372 0399	Columns, square or round			
0400	Placing conc, columns, square/round, 12" thick, pumped	CY	44.99	
5910	Placing conc, for walking cart handling 150' haul, add		18.00	
5915	Placing conc, for riding cart handling 150' haul, add		11.25	
0450	Placing conc, columns, w/crane & bucket, square/round, 12" thick	CY	64.66	
5910	Placing conc, for walking cart handling 150' haul, add		25.86	
5915	Placing conc, for riding cart handling 150' haul, add		16.17	
0600	Placing conc, columns, 18" thick, pumped	CY	29.99	
5910	Placing conc, for walking cart handling 150' haul, add		12.00	
5915	Placing conc, for riding cart handling 150' haul, add		7.50	
0650	Placing conc, columns, 18" thick, w/crane & bucket	CY	47.02	
5910	Placing conc, for walking cart handling 150' haul, add		18.81	
5915	Placing conc, for riding cart handling 150' haul, add		11.76	
0800	Placing conc, columns, 24" thick, pumped	CY	29.34	
5910	Placing conc, for walking cart handling 150' haul, add		11.74	
5915	Placing conc, for riding cart handling 150' haul, add		7.34	
0850	Placing conc, columns, 24" thick, w/crane & bucket	CY	36.95	
5910	Placing conc, for walking cart handling 150' haul, add		14.78	
5915	Placing conc, for riding cart handling 150' haul, add		9.24	
1000	Placing conc, columns, 36" thick, pumped	CY	19.28	
5910	Placing conc, for walking cart handling 150' haul, add		7.71	
5915	Placing conc, for riding cart handling 150' haul, add		4.82	
1050	Placing conc, columns, 36" thick, w/crane & bucket	CY	25.86	
5910	Placing conc, for walking cart handling 150' haul, add		10.34	
5915	Placing conc, for riding cart handling 150' haul, add		6.47	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03372 1199 Duct bank				
1200	Placing conc, duct bank, direct chute	CY	9.45	
5910	Placing conc, for walking cart handling 150' haul, add		3.78	
5915	Placing conc, for riding cart handling 150' haul, add		2.36	
03372 1399 Elevated slabs				
1400	Placing conc, elev slabs, less than 6" thick, pumped	CY	19.28	
5910	Placing conc, for walking cart handling 150' haul, add		7.71	
5915	Placing conc, for riding cart handling 150' haul, add		4.82	
1450	Placing conc, elev slabs, w/crane & bucket, less than 6" thick	CY	27.22	
5910	Placing conc, for walking cart handling 150' haul, add		10.89	
5915	Placing conc, for riding cart handling 150' haul, add		6.81	
1500	Placing conc, elev slabs, 6" to 10" thick, pumped	CY	16.87	
5910	Placing conc, for walking cart handling 150' haul, add		6.75	
5915	Placing conc, for riding cart handling 150' haul, add		4.22	
1550	Placing conc, elev slabs, w/ crane & bucket, 6" to 10" thick	CY	23.52	
5910	Placing conc, for walking cart handling 150' haul, add		9.41	
5915	Placing conc, for riding cart handling 150' haul, add		5.88	
03372 1899 Footings, continuous				
1900	Placing conc, direct chute, footings, shallow, continuous	CY	12.21	
5910	Placing conc, for walking cart handling 150' haul, add		4.88	
5915	Placing conc, for riding cart handling 150' haul, add		3.05	
1950	Placing conc, pumped, footings, shallow, continuous	CY	17.99	
5910	Placing conc, for walking cart handling 150' haul, add		7.20	
5915	Placing conc, for riding cart handling 150' haul, add		4.50	
2000	Placing conc, w/crane & bucket, footings, shallow, continuous	CY	28.74	
5910	Placing conc, for walking cart handling 150' haul, add		11.50	
5915	Placing conc, for riding cart handling 150' haul, add		7.19	
2100	Placing conc, footings, deep continuous, direct chute	CY	10.46	
5910	Placing conc, for walking cart handling 150' haul, add		4.18	
5915	Placing conc, for riding cart handling 150' haul, add		2.62	
2150	Placing conc, footings, deep continuous, pumped	CY	16.87	
5910	Placing conc, for walking cart handling 150' haul, add		6.75	
5915	Placing conc, for riding cart handling 150' haul, add		4.22	
2200	Placing conc, footings, deep continuous, w/crane & bucket	CY	23.52	
5910	Placing conc, for walking cart handling 150' haul, add		9.41	
5915	Placing conc, for riding cart handling 150' haul, add		5.88	
03372 2399 Footings, spread				
2400	Placing conc, footings, spread, under 1 CY, direct chute	CY	26.64	
5910	Placing conc, for walking cart handling 150' haul, add		10.66	
5915	Placing conc, for riding cart handling 150' haul, add		6.66	
2450	Placing conc, footings, spread, under 1 CY, pumped	CY	41.53	
5910	Placing conc, for walking cart handling 150' haul, add		16.61	
5915	Placing conc, for riding cart handling 150' haul, add		10.38	
2500	Placing conc, footings, w/crane & bucket, spread, under 1 CY	CY	57.47	
5910	Placing conc, for walking cart handling 150' haul, add		22.99	
5915	Placing conc, for riding cart handling 150' haul, add		14.37	
2600	Placing conc, footings, spread, over 5 CY, direct chute	CY	12.21	
5910	Placing conc, for walking cart handling 150' haul, add		4.88	
5915	Placing conc, for riding cart handling 150' haul, add		3.05	
2650	Placing conc, footings, spread, over 5 CY, pumped	CY	17.99	
5910	Placing conc, for walking cart handling 150' haul, add		7.20	
5915	Placing conc, for riding cart handling 150' haul, add		4.50	
2700	Placing conc, footings, spread, over 5 CY, w/crane & bucket	CY	25.86	
5910	Placing conc, for walking cart handling 150' haul, add		10.34	
5915	Placing conc, for riding cart handling 150' haul, add		6.47	
03372 2899 Foundation mats				
2900	Placing conc, foundation mats, over 20 CY, direct chute	CY	4.19	
5910	Placing conc, for walking cart handling 150' haul, add		1.68	
5915	Placing conc, for riding cart handling 150' haul, add		1.05	
2950	Placing conc, foundation mats, over 20 CY, pumped	CY	6.75	
5910	Placing conc, for walking cart handling 150' haul, add		2.70	
5915	Placing conc, for riding cart handling 150' haul, add		1.69	
3000	Placing conc, foundation mats, over 20 CY, w/crane & bucket	CY	8.62	
5910	Placing conc, for walking cart handling 150' haul, add		3.45	
5915	Placing conc, for riding cart handling 150' haul, add		2.16	
03372 3199 Grade beams				
3200	Placing conc, grade beams, direct chute	CY	9.76	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5910	Placing conc, for walking cart handling 150' haul, add		3.90	
5915	Placing conc, for riding cart handling 150' haul, add		2.44	
3250	Placing conc, grade beams, direct chute, pumped	CY	14.99	
5910	Placing conc, for walking cart handling 150' haul, add		6.00	
5915	Placing conc, for riding cart handling 150' haul, add		3.75	
3300	Placing conc, grade beams, direct chute, w/crane & bucket	CY	21.55	
5910	Placing conc, for walking cart handling 150' haul, add		8.62	
5915	Placing conc, for riding cart handling 150' haul, add		5.39	
03372 3699 File caps				
3700	Placing conc, pile caps, under 5 CY, direct chute	CY	16.28	
5910	Placing conc, for walking cart handling 150' haul, add		6.51	
5915	Placing conc, for riding cart handling 150' haul, add		4.07	
3750	Placing conc, pile caps, under 5 CY, pumped	CY	24.54	
5910	Placing conc, for walking cart handling 150' haul, add		9.82	
5915	Placing conc, for riding cart handling 150' haul, add		6.14	
3800	Placing conc, pile caps, under 5 CY, w/crane & bucket	CY	32.33	
5910	Placing conc, for walking cart handling 150' haul, add		12.93	
5915	Placing conc, for riding cart handling 150' haul, add		8.08	
4000	Placing conc, pile caps, over 10 CY, direct chute	CY	6.82	
5910	Placing conc, for walking cart handling 150' haul, add		2.73	
5915	Placing conc, for riding cart handling 150' haul, add		1.71	
4050	Placing conc, pile caps, over 10 CY, pumped	CY	11.25	
5910	Placing conc, for walking cart handling 150' haul, add		4.50	
5915	Placing conc, for riding cart handling 150' haul, add		2.81	
4100	Placing conc, pile caps, over 10 CY, w/crane & bucket	CY	13.98	
5910	Placing conc, for walking cart handling 150' haul, add		5.59	
5915	Placing conc, for riding cart handling 150' haul, add		3.50	
03372 4199 Auger Cast Piles				
4250	16" Auger Cast Piles With 12" Re inforcing Cage	VLF	77.00	
5910	Placing conc, for walking cart handling 150' haul, add		0.00	
5915	Placing conc, for riding cart handling 150' haul, add		0.00	
03372 4299 Slab on grade				
4300	Placing conc, slab on grade, 4" thick, direct chute	CY	13.32	
5910	Placing conc, for walking cart handling 150' haul, add		5.33	
5915	Placing conc, for riding cart handling 150' haul, add		3.33	
4350	Placing conc, slab on grade, 4" thick, pumped	CY	20.76	
5910	Placing conc, for walking cart handling 150' haul, add		8.30	
5915	Placing conc, for riding cart handling 150' haul, add		5.19	
4400	Placing conc, slab on grade, 4" thick, w/crane & bucket	CY	23.52	
5910	Placing conc, for walking cart handling 150' haul, add		9.41	
5915	Placing conc, for riding cart handling 150' haul, add		5.88	
4600	Placing conc, slab on grade, direct chute, slab over 6" thick	CY	8.88	
5910	Placing conc, for walking cart handling 150' haul, add		3.55	
5915	Placing conc, for riding cart handling 150' haul, add		2.22	
4650	Placing conc, slab on grade, slab over 6" thick, pumped	CY	14.59	
5910	Placing conc, for walking cart handling 150' haul, add		5.84	
5915	Placing conc, for riding cart handling 150' haul, add		3.65	
4700	Placing conc, slab on grade, w/crane & bucket, slab > 6" T	CY	17.84	
5910	Placing conc, for walking cart handling 150' haul, add		7.14	
5915	Placing conc, for riding cart handling 150' haul, add		4.46	
03372 4799 Stairs on grade				
03372 4799 Direct chute				
4800	Placing conc, stairs on grade, direct chute	CY	19.54	
5910	Placing conc, for walking cart handling 150' haul, add		7.82	
5915	Placing conc, for riding cart handling 150' haul, add		4.89	
4810	Placing conc, stairs on grade, pumped	CY	26.99	
5910	Placing conc, for walking cart handling 150' haul, add		10.80	
5915	Placing conc, for riding cart handling 150' haul, add		6.75	
4820	Placing conc, stairs on grade, w/crane & bucket	CY	47.02	
5910	Placing conc, for walking cart handling 150' haul, add		18.81	
5915	Placing conc, for riding cart handling 150' haul, add		11.76	
03372 4849 Stairs, elevated				
4850	Placing conc, stairs, elev, direct chute	CY	36.63	
5910	Placing conc, for walking cart handling 150' haul, add		14.65	
5915	Placing conc, for riding cart handling 150' haul, add		9.16	
4860	Placing conc, stairs, elev, pumped	CY	44.99	
5910	Placing conc, for walking cart handling 150' haul, add		18.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5915	Placing conc, for riding cart handling 150' haul, add		11.25	
4870	Placing conc, stairs, elev, w/crane & bucket	CY	103.46	
5910	Placing conc, for walking cart handling 150' haul, add		41.38	
5915	Placing conc, for riding cart handling 150' haul, add		25.87	
03372 4899	Walls			
4900	Placing conc, walls, 8" thick, direct chute	CY	16.28	
5910	Placing conc, for walking cart handling 150' haul, add		6.51	
5915	Placing conc, for riding cart handling 150' haul, add		4.07	
4950	Placing conc, walls, 8" thick, pumped	CY	26.99	
5910	Placing conc, for walking cart handling 150' haul, add		10.80	
5915	Placing conc, for riding cart handling 150' haul, add		6.75	
5000	Placing conc, walls, 8" thick, w/crane & bucket	CY	32.33	
5910	Placing conc, for walking cart handling 150' haul, add		12.93	
5915	Placing conc, for riding cart handling 150' haul, add		8.08	
5050	Placing conc, walls, 12" thick, direct chute	CY	14.65	
5910	Placing conc, for walking cart handling 150' haul, add		5.86	
5915	Placing conc, for riding cart handling 150' haul, add		3.66	
5100	Placing conc, walls, 12" thick, pumped	CY	24.54	
5910	Placing conc, for walking cart handling 150' haul, add		9.82	
5915	Placing conc, for riding cart handling 150' haul, add		6.14	
5200	Placing conc, walls, 12" thick, w/crane & bucket	CY	28.74	
5910	Placing conc, for walking cart handling 150' haul, add		11.50	
5915	Placing conc, for riding cart handling 150' haul, add		7.19	
5300	Placing conc, walls, 15" thick, direct chute	CY	13.95	
5910	Placing conc, for walking cart handling 150' haul, add		5.58	
5915	Placing conc, for riding cart handling 150' haul, add		3.49	
5350	Placing conc, walls, 15" thick, pumped	CY	22.49	
5910	Placing conc, for walking cart handling 150' haul, add		9.00	
5915	Placing conc, for riding cart handling 150' haul, add		5.62	
5400	Placing conc, walls, 15" thick, w/crane & bucket	CY	27.22	
5910	Placing conc, for walking cart handling 150' haul, add		10.89	
5915	Placing conc, for riding cart handling 150' haul, add		6.81	
03395	Concrete Finishing			
03396 0009	Finishing floors			
03396 0009	Finishes			
0010	Finishing floors, monolithic, screed finish	SF	0.30	
0050	Finishing floors, monolithic, darby finish	SF	0.36	
0100	Finishing floors, monolithic, float finish	SF	0.37	
0150	Finishing floors, monolithic, broom finish	SF	0.40	
0200	Finishing floors, for resilient tile, monolithic, steel trowel	SF	0.43	
03396 0399	Integral topping and finish Using 1:1:2 Mx			
0400	Finishing floors, 3/16" thick, integral topping & finish, 1:1:2	SF	0.86	
0450	Finishing floors, 1/2" thick, integral topping & finish, 1:1:2	SF	1.01	
0500	Finishing floors, 3/4" thick, integral topping & finish, 1:1:2	SF	1.20	
0600	Finishing floors, 1" thick, integral topping & finish, 1:1:2	SF	1.41	
0620	Finishing floors, 2" thick, integral topping & finish, 1:1:2	SF	1.86	
0625	Finishing floors, 2.5" thick, integral topping & finish, 1:1:2	SF	2.31	
0630	Finishing floors, 3" thick, integral topping & finish, 1:1:2	SF	2.47	
03396 0799	Granolithic topping			
0800	Finishing floors, 1/2" thick, granolithic topping, 1:1:1-1/2	SF	1.55	
0850	Finishing floors, 1" thick, granolithic topping, 1:1:1-1/2	SF	1.76	
0950	Finishing floors, 2" thick, granolithic topping, 1:1:1-1/2	SF	2.34	
03396 1799	Floor abrasives			
1800	Finishing floors, aluminum oxide, abrasive, .25 PSF, add to	SF	0.50	
1850	Finishing floors, silicon carbide, abrasive, .25 PSF, add	SF	0.52	
03396 1999	Floor hardeners			
2000	Finishing floors, .50 PSF, add, hardener, metallic, light	SF	0.56	
2600	Finishing floors, hardeners, add for colored hardeners, metallic		0.12	
2650	Finishing floors, add for colored hardeners, non-metallic		0.06	
2100	Finishing floors, 1.0 PSF, add, hardener, metallic, heavy	SF	0.89	
2600	Finishing floors, hardeners, add for colored hardeners, metallic		0.24	
2650	Finishing floors, add for colored hardeners, non-metallic		0.12	
2300	Finishing floors, light service, hardener, non-metallic, add to	SF	0.46	
2600	Finishing floors, hardeners, add for colored hardeners, metallic		0.07	
2650	Finishing floors, add for colored hardeners, non-metallic		0.04	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2400	Finishing floors, heavy service, hardener, non-metallic, add to	SF	0.67	
2600	Finishing floors, hardeners, add for colored hardeners, metallic		0.13	
2650	Finishing floors, add for colored hardeners, non-metallic		0.07	
03397 1000	Marblecrete			
1001	2" Thk Marblecrete & Finish	SF	21.16	
1002	4" Thk Marblecrete & Finish	SF	28.31	
03398 0009	Finishing walls			
03398 0009	Break ties, patch voids and burlap rub			
0010	Finishing walls, break ties & patch voids	SF	0.52	
0050	Finishing walls, burlap rub w/grout	SF	0.70	
03398 0099	Carborundum rub			
0100	Finishing walls, carborundum rub, dry	SF	1.10	
0150	Finishing walls, carborundum rub, wet rub	SF	1.62	
03398 0299	Bush hammer			
0300	Finishing walls, bush hammer, green conc	SF	1.52	
0350	Finishing walls, bush hammer, cured conc	SF	2.35	
03398 0499	Acid etch			
0500	Finishing walls, acid etch	SF	0.60	
03398 0599	Float finish			
0600	Finishing walls, float finish, 1/16" thick	SF	0.94	
03398 0699	Sandblast			
0700	Finishing walls, sandblast, light penetration	SF	1.03	
0750	Finishing walls, sandblast, heavy penetration	SF	2.74	
03398 0999	Exposed aggregate			
1000	Finishing walls, add to formwork, uniform finish, 1 use,	SF	0.96	
03399	Roller compacted concrete			
Does Not Include, Materials Cost				
03399 0010	Spread and compact			
03399 0099	Miss placement			
0100	Roller compacted conc, spread & compact, 1' lift, 1' layer	CY	0.88	
0200	Roller compacted conc, spread & compact, 2' lift, 6" layer	CY	0.70	
0210	Roller compacted conc, vertical face, formed, 1' lift	CY	1.93	
0220	Roller compacted conc, vertical face, formed, 6" lift	CY	3.86	
0300	Roller compacted conc, sloped face, nonformed, 1' lift	CY	2.03	
0360	Roller compacted conc, sloped face, nonformed, 6" lift	CY	4.06	
03399 0399	Surface preparation			
0400	Roller compacted conc, surface prep	SY	0.39	
0450	Roller compacted conc, water clean, surface prep	SY	0.38	
0460	Roller compacted conc, water blast, surface prep	SY	1.51	
03399 0499	Joint bed placement			
0500	Roller compacted conc, joint bedding placement, 1" thick	SY	0.63	
03399 0509	Conveyance of materials			
0510	Roller compacted conc, placed by truck, 5 min cycle	CY	0.43	
0520	Roller compacted conc, placed by truck, 10 min cycle	CY	0.85	
0540	Roller compacted conc, placed by truck, 15 min cycle	CY	1.29	
0550	Roller compacted conc, placed by crane, 200' radius	CY	1.26	
0560	Roller compacted conc, placed by 4 CY loader, 4 min cycle	CY	2.06	
0570	Roller compacted conc, placed by 4 CY loader, 8 min cycle	CY	4.13	
0580	Roller compacted conc, placed by 4 CY loader, 12 min cycle	CY	6.20	
0590	Roller compacted conc, placed by conveyor belt	CY	2.90	
0600	Roller compacted conc, placed by 17 CY scraper, 5 min cycle	CY	0.83	
0610	Roller compacted conc, 10 min cycle, placed by 17 CY scraper	CY	1.67	
0620	Roller compacted conc, 15 min cycle, placed by 17 CY scraper	CY	2.50	
0630	Roller compacted conc, 20 min cycle, placed by 17 CY scraper	CY	3.33	
03399 0639	Water cure			
0640	Roller compacted conc, water cure, less than 500 CY	HR	30.95	
0650	Roller compacted conc, water cure, over 500 CY	HR	87.70	
03399 0659	Paving			
0660	Roller compacted conc, place & compact w/asphalt paver incl	CY	59.26	
0670	Roller compacted conc, 8" thk, place w/ashpalt paver, incl matl	SY	15.44	
0680	Roller compacted conc, 12" thk, place w/asphalt paver, incl matl	SY	22.94	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
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03400 Precast Concrete

Note: Precast Concrete Prices Are Based On A Precast Operation Producing Large Quantities Of Precast Products. Prices Include Delivery To Construction Site And Overhead/Mobilization Charges For The Precast Plant. For Erection Costs See Section 03490.

03401 Structural Precast

Note: Material Cost Includes Cost Of 3000 Psi (280 Kg/Cm²) Concrete, Reinforcing Steel, Imbedded Items, Formwork, And Precast Operations. For Erection Costs See Section 03410

03404 0012 Beams

5015	Structural precast, 15' span, 3000 PSI, strl sect, 1.0 KLF	LF	34.71	
5300	Structural precast, for 3500 psi concrete, add		0.69	
5305	Structural precast, for 4000 psi concrete, add		1.04	
5310	Structural precast, for 4500 psi concrete, add		1.39	
5315	Structural precast, for 5000 psi concrete, add		2.08	
5020	Structural precast, 20' span, 3000 PSI, strl sect, 1.0 KLF	LF	38.51	
5300	Structural precast, for 3500 psi concrete, add		0.77	
5305	Structural precast, for 4000 psi concrete, add		1.16	
5310	Structural precast, for 4500 psi concrete, add		1.54	
5315	Structural precast, for 5000 psi concrete, add		2.31	
5030	Structural precast, 30' span, 3000 PSI, strl sect, 1.0 KLF	LF	53.23	
5300	Structural precast, for 3500 psi concrete, add		1.06	
5305	Structural precast, for 4000 psi concrete, add		1.60	
5310	Structural precast, for 4500 psi concrete, add		2.13	
5315	Structural precast, for 5000 psi concrete, add		3.19	
5115	Structural precast, 15' span, 3000 PSI, strl sect, 3.0 KLF	LF	42.15	
5300	Structural precast, for 3500 psi concrete, add		0.84	
5305	Structural precast, for 4000 psi concrete, add		1.26	
5310	Structural precast, for 4500 psi concrete, add		1.69	
5315	Structural precast, for 5000 psi concrete, add		2.53	
5120	Structural precast, 20' span, 3000 PSI, strl sect, 3.0 KLF	LF	47.92	
5300	Structural precast, for 3500 psi concrete, add		0.96	
5305	Structural precast, for 4000 psi concrete, add		1.44	
5310	Structural precast, for 4500 psi concrete, add		1.92	
5315	Structural precast, for 5000 psi concrete, add		2.88	
5130	Structural precast, 30' span, 3000 PSI, strl sect, 3.0 KLF	LF	62.87	
5300	Structural precast, for 3500 psi concrete, add		1.26	
5305	Structural precast, for 4000 psi concrete, add		1.89	
5310	Structural precast, for 4500 psi concrete, add		2.51	
5315	Structural precast, for 5000 psi concrete, add		3.77	
5215	Structural precast, 15' span, 3000 PSI, strl sect, 5.0 KLF	LF	54.38	
5300	Structural precast, for 3500 psi concrete, add		1.09	
5305	Structural precast, for 4000 psi concrete, add		1.63	
5310	Structural precast, for 4500 psi concrete, add		2.18	
5315	Structural precast, for 5000 psi concrete, add		3.26	
5220	Structural precast, 20' span, 3000 PSI, strl sect, 5.0 KLF	LF	64.68	
5300	Structural precast, for 3500 psi concrete, add		1.29	
5305	Structural precast, for 4000 psi concrete, add		1.94	
5310	Structural precast, for 4500 psi concrete, add		2.59	
5315	Structural precast, for 5000 psi concrete, add		3.88	
5230	Structural precast, 30' span, 3000 PSI, strl sect, 5.0 KLF	LF	76.99	
5300	Structural precast, for 3500 psi concrete, add		1.54	
5305	Structural precast, for 4000 psi concrete, add		2.31	
5310	Structural precast, for 4500 psi concrete, add		3.08	
5315	Structural precast, for 5000 psi concrete, add		4.62	

03410 Structural Precast Concrete

NOTE: For Erection Costs See Section 03490.

03411 2000 Partition Panels

03411 2900 Material Cost

Note: Material Cost Includes Cost Of 3000 Psi (210 Kg/Cm²) Concrete, Reinforcing Steel, Imbedded Items, Formwork And Precast Plant Operations

2901	Precast Ptn Wall, 4" (10 cm) Thk 3000 PSI Conc, Ready to Erect	SF	5.48	
5012	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.11	
5013	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.16	
5014	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.22	
5015	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.33	
5016	For White Facing Add		1.10	
5017	Solid White Through Thickness Add		1.10	
5018	Broken Rib Finish Add		0.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5019	Fluted Surface Add		0.55	
5021	Exposed Aggregate Add		1.10	
5022	Sandblasting Of Surface Add		0.55	
2902	Precast Ptn Wall, 5" (12.5cm)Thk 3000 PSI Conc,Ready to Erect	SF	6.75	
5012	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.14	
5013	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.20	
5014	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.27	
5015	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.41	
5016	For White Facing Add		1.35	
5017	Solid White Through Thickness Add		1.35	
5018	Broken Rib Finish Add		0.68	
5019	Fluted Surface Add		0.68	
5021	Exposed Aggregate Add		1.35	
5022	Sandblasting Of Surface Add		0.68	
2903	Precast Ptn Wall, 6" (15 cm)Thk 3000 PSI Conc,Ready to Erect	SF	8.07	
5012	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.16	
5013	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.24	
5014	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.32	
5015	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.48	
5016	For White Facing Add		1.61	
5017	Solid White Through Thickness Add		1.61	
5018	Broken Rib Finish Add		0.81	
5019	Fluted Surface Add		0.81	
5021	Exposed Aggregate Add		1.61	
5022	Sandblasting Of Surface Add		0.81	
2904	Precast Ptn Wall, 8" (20 cm)Thk 3000 PSI Conc,Ready to Erect	SF	10.67	
5012	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.21	
5013	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.32	
5014	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.43	
5015	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.64	
5016	For White Facing Add		2.13	
5017	Solid White Through Thickness Add		2.13	
5018	Broken Rib Finish Add		1.07	
5019	Fluted Surface Add		1.07	
5021	Exposed Aggregate Add		2.13	
5022	Sandblasting Of Surface Add		1.07	
03411 3000	Cladding Panels			
03411 3900	Material Cost			
Note: Material Cost Includes Cost Of 3000 Psi (210 Kg/Cm ²) Concrete, Reinforcing Steel, Inbedded Items, Formwork, And Precast Plant Operations				
3901	Precast Cladding Pnl,4" (10 cm)Tk 3000 PSI Conc,Ready to Erect	SF	5.48	
5023	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.11	
5024	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.16	
5025	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.22	
5026	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.33	
5027	For White Facing Add		1.10	
5028	Solid White Through Thickness Add		1.10	
5029	Broken Rib Finish Add		0.55	
5031	Fluted Surface Add		0.55	
5032	Exposed Aggregate Add		1.10	
5033	Sandblasting Of Surface Add		0.55	
3902	Precast Cladd'g Pnl,5" (12.5cm)Tk 3000 PSI Conc,Ready to Erect	SF	6.75	
5023	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.14	
5024	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.20	
5025	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.27	
5026	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.41	
5027	For White Facing Add		1.35	
5028	Solid White Through Thickness Add		1.35	
5029	Broken Rib Finish Add		0.68	
5031	Fluted Surface Add		0.68	
5032	Exposed Aggregate Add		1.35	
5033	Sandblasting Of Surface Add		0.68	
3903	Precast Cladding Pnl,6" (15 cm)Tk 3000 PSI Conc,Ready to Erect	SF	8.07	
5023	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.16	
5024	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.24	
5025	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.32	
5026	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.48	
5027	For White Facing Add		1.61	
5028	Solid White Through Thickness Add		1.61	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5029	Broken Rib Finish Add		0.81	
5031	Fluted Surface Add		0.81	
5032	Exposed Aggregate Add		1.61	
5033	Sandblasting Of Surface Add		0.81	
3904	Precast Cladding Pnl, 8" (20 cm)Tk 3000 PSI Conc,Ready to Erect	SF	10.67	
5023	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.21	
5024	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.32	
5025	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.43	
5026	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.64	
5027	For White Facing Add		2.13	
5028	Solid White Through Thickness Add		2.13	
5029	Broken Rib Finish Add		1.07	
5031	Fluted Surface Add		1.07	
5032	Exposed Aggregate Add		2.13	
5033	Sandblasting Of Surface Add		1.07	
03411 4000	Sandwich Panel			
03411 4900	Mterial Cost			
Note: Material Cost Includes Cost Of 3000 Psi (210 Kg/Cm ²) Concrete, Reinforcing Steel, Imbedded Items, Formwork, And Precast Plant Operations. Sandwich Panel Consists Of 2.5 In Cladding Panek, 2 In Fiber Board Insulation And The Structural Panel As Defined				
4901	Precast Sandwich Pnl, 4" (10 cm)Tk 3000 PSI Conc,Ready to Erect	SF	7.50	
5041	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.15	
5042	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.23	
5043	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.30	
5044	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.45	
5045	For White Facing Add		1.50	
5046	Solid White Through Thickness Add		1.50	
5047	Broken Rib Finish Add		0.75	
5048	Fluted Surface Add		0.75	
5049	Exposed Aggregate Add		1.50	
5051	Sandblasting Of Surface Add		0.75	
4902	Prcest Sandwich Pnl, 5" (12.5cm)Thk 3000 PSI Conc,Ready to Erect	SF	8.82	
5041	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.18	
5042	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.26	
5043	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.35	
5044	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.53	
5045	For White Facing Add		1.76	
5046	Solid White Through Thickness Add		1.76	
5047	Broken Rib Finish Add		0.88	
5048	Fluted Surface Add		0.88	
5049	Exposed Aggregate Add		1.76	
5051	Sandblasting Of Surface Add		0.88	
4903	Precast Sandwich Pnl, 6" (15 cm)Tk 3000 PSI Conc,Ready to Erect	SF	10.27	
5041	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.21	
5042	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.31	
5043	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.41	
5044	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.62	
5045	For White Facing Add		2.05	
5046	Solid White Through Thickness Add		2.05	
5047	Broken Rib Finish Add		1.03	
5048	Fluted Surface Add		1.03	
5049	Exposed Aggregate Add		2.05	
5051	Sandblasting Of Surface Add		1.03	
4904	Precast Sandwich Pnl, 8" (20 cm)Tk 3000 PSI Conc,Ready to Erect	SF	12.98	
5041	For 3500 Psi (245 Kg/Cm ²) Concrete Add		0.26	
5042	For 4000 Psi (280 Kg/Cm ²) Concrete Add		0.39	
5043	For 4500 Psi (315 Kg/Cm ²) Concrete Add		0.52	
5044	For 5000 Psi (350 Kg/Cm ²) Concrete Add		0.78	
5045	For White Facing Add		2.60	
5046	Solid White Through Thickness Add		2.60	
5047	Broken Rib Finish Add		1.30	
5048	Fluted Surface Add		1.30	
5049	Exposed Aggregate Add		2.60	
5051	Sandblasting Of Surface Add		1.30	
03412 0011	Columns			
1000	Structural precast, 500 #/CY, 12" x 12", max reinforcing,	CY	1,295.51	
1300	Structural precast, for 3500 psi concrete, add		25.91	
1310	Structural precast, for 4000 psi concrete, add		38.87	
1320	Structural precast, for 4500 psi concrete, add		51.82	
1330	Structural precast, for 5000 psi concrete, add		77.73	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1010	Structural precast, 350 #/CY, 12" x 12", avg reinforcing,	CY	1,257.77	
1300	Structural precast, for 3500 psi concrete, add		25.16	
1310	Structural precast, for 4000 psi concrete, add		37.73	
1320	Structural precast, for 4500 psi concrete, add		50.31	
1330	Structural precast, for 5000 psi concrete, add		75.47	
1020	Structural precast, 200 #/CY, 12" x 12", min reinforcing,	CY	1,220.04	
1300	Structural precast, for 3500 psi concrete, add		24.40	
1310	Structural precast, for 4000 psi concrete, add		36.60	
1320	Structural precast, for 4500 psi concrete, add		48.80	
1330	Structural precast, for 5000 psi concrete, add		73.20	
1030	Structural precast, 560#/CY, 16" x 16", max reinforcing, columns	CY	1,045.06	
1300	Structural precast, for 3500 psi concrete, add		20.90	
1310	Structural precast, for 4000 psi concrete, add		31.35	
1320	Structural precast, for 4500 psi concrete, add		41.80	
1330	Structural precast, for 5000 psi concrete, add		62.70	
1040	Structural precast, 370#/CY, 16" x 16", avg reinforcing, columns	CY	1,014.62	
1300	Structural precast, for 3500 psi concrete, add		20.29	
1310	Structural precast, for 4000 psi concrete, add		30.44	
1320	Structural precast, for 4500 psi concrete, add		40.58	
1330	Structural precast, for 5000 psi concrete, add		60.88	
1050	Structural precast, 180 #/CY, 16" x 16", min reinforcing,	CY	984.18	
1300	Structural precast, for 3500 psi concrete, add		19.68	
1310	Structural precast, for 4000 psi concrete, add		29.53	
1320	Structural precast, for 4500 psi concrete, add		39.37	
1330	Structural precast, for 5000 psi concrete, add		59.05	
1060	Structural precast, 550 #/CY, 20" x 20", max reinforcing,	CY	761.23	
1300	Structural precast, for 3500 psi concrete, add		15.22	
1310	Structural precast, for 4000 psi concrete, add		22.84	
1320	Structural precast, for 4500 psi concrete, add		30.45	
1330	Structural precast, for 5000 psi concrete, add		45.67	
1070	Structural precast, 355 #/CY, 20" x 20", avg reinforcing,	CY	739.05	
1300	Structural precast, for 3500 psi concrete, add		14.78	
1310	Structural precast, for 4000 psi concrete, add		22.17	
1320	Structural precast, for 4500 psi concrete, add		29.56	
1330	Structural precast, for 5000 psi concrete, add		44.34	
1080	Structural precast, 160 #/CY, 20" x 20", min reinforcing,	CY	716.89	
1300	Structural precast, for 3500 psi concrete, add		14.34	
1310	Structural precast, for 4000 psi concrete, add		21.51	
1320	Structural precast, for 4500 psi concrete, add		28.68	
1330	Structural precast, for 5000 psi concrete, add		43.01	
1090	Structural precast, 570 #/CY, 24" x 24", tied, max reinf,	CY	919.74	
1300	Structural precast, for 3500 psi concrete, add		18.39	
1310	Structural precast, for 4000 psi concrete, add		27.59	
1320	Structural precast, for 4500 psi concrete, add		36.79	
1330	Structural precast, for 5000 psi concrete, add		55.18	
1100	Structural precast, 365 #/CY, 24" x 24", tied, avg reinf,	CY	892.95	
1300	Structural precast, for 3500 psi concrete, add		17.86	
1310	Structural precast, for 4000 psi concrete, add		26.79	
1320	Structural precast, for 4500 psi concrete, add		35.72	
1330	Structural precast, for 5000 psi concrete, add		53.58	
1110	Structural precast, 160 #/CY, 24" x 24", tied, min reinf,	CY	866.16	
1300	Structural precast, for 3500 psi concrete, add		17.32	
1310	Structural precast, for 4000 psi concrete, add		25.98	
1320	Structural precast, for 4500 psi concrete, add		34.65	
1330	Structural precast, for 5000 psi concrete, add		51.97	
1120	Structural precast, 535 #/CY, 28" x 28", tied, max reinf,	CY	850.48	
1300	Structural precast, for 3500 psi concrete, add		17.01	
1310	Structural precast, for 4000 psi concrete, add		25.51	
1320	Structural precast, for 4500 psi concrete, add		34.02	
1330	Structural precast, for 5000 psi concrete, add		51.03	
1130	Structural precast, 345 #/CY, 28" x 28", tied, avg reinf,	CY	825.71	
1300	Structural precast, for 3500 psi concrete, add		16.51	
1310	Structural precast, for 4000 psi concrete, add		24.77	
1320	Structural precast, for 4500 psi concrete, add		33.03	
1330	Structural precast, for 5000 psi concrete, add		49.54	
1140	Structural precast, 160 #/CY, 28" x 28", tied, min reinf,	CY	800.94	
1300	Structural precast, for 3500 psi concrete, add		16.02	
1310	Structural precast, for 4000 psi concrete, add		24.03	
1320	Structural precast, for 4500 psi concrete, add		32.04	
1330	Structural precast, for 5000 psi concrete, add		48.06	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1150	Structural precast, 525#/CY, 32" x 32", tied, max reinf, columns	CY	1,004.24	
1300	Structural precast, for 3500 psi concrete, add		20.08	
1310	Structural precast, for 4000 psi concrete, add		30.13	
1320	Structural precast, for 4500 psi concrete, add		40.17	
1330	Structural precast, for 5000 psi concrete, add		60.25	
1160	Structural precast, 350 #/CY, 32" x 32", tied, avg reinf,	CY	974.99	
1300	Structural precast, for 3500 psi concrete, add		19.50	
1310	Structural precast, for 4000 psi concrete, add		29.25	
1320	Structural precast, for 4500 psi concrete, add		39.00	
1330	Structural precast, for 5000 psi concrete, add		58.50	
1170	Structural precast, 180 #/CY, 32" x 32", tied, min reinf,	CY	945.74	
1300	Structural precast, for 3500 psi concrete, add		18.91	
1310	Structural precast, for 4000 psi concrete, add		28.37	
1320	Structural precast, for 4500 psi concrete, add		37.83	
1330	Structural precast, for 5000 psi concrete, add		56.74	
1180	Structural precast, 415#/CY, 36" x 36", tied, max reinf, columns	CY	838.52	
1300	Structural precast, for 3500 psi concrete, add		16.77	
1310	Structural precast, for 4000 psi concrete, add		25.16	
1320	Structural precast, for 4500 psi concrete, add		33.54	
1330	Structural precast, for 5000 psi concrete, add		50.31	
1190	Structural precast, 280 #/CY, 36" x 36", tied, avg reinf,	CY	814.10	
1300	Structural precast, for 3500 psi concrete, add		16.28	
1310	Structural precast, for 4000 psi concrete, add		24.42	
1320	Structural precast, for 4500 psi concrete, add		32.56	
1330	Structural precast, for 5000 psi concrete, add		48.85	
1200	Structural precast, 140 #/CY, 36" x 36", tied, min reinf,	CY	789.67	
1300	Structural precast, for 3500 psi concrete, add		15.79	
1310	Structural precast, for 4000 psi concrete, add		23.69	
1320	Structural precast, for 4500 psi concrete, add		31.59	
1330	Structural precast, for 5000 psi concrete, add		47.38	

03414 Miscellaneous Precast Items

NOTE: For Erection Costs See Section 03490.

03414 1000 Stairs

03414 1900 Material Cost

Note: Material Cost Includes Cost Of 3000 Psi (210 Kg/Cm²) Concrete, Reinforcing Steel, Imbedded Items, Formwork And Precast Operations

1901	3' Wide W 10-1/2" D Trd Precast Conc Stair Unit, Per Riser	EA	122.32	
9001	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9002	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9003	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9004	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	

03414 2000 Precast Concrete Planter

03414 2900 Material Cost

Note: Material Cost Includes 3000 Psi (210 Kg/Cm²) Concrete, Imbedded Items, Formwork And Precast Operations

2901	Prcst Conc Planter, 24"Dia x 18"H (.6M)Dia x (.45M)H, 3000 PSI Con	EA	140.24	
9005	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9006	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9007	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9008	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
2902	Prcst Conc Planter, 30"Dia x 24"H (.75M)Dia x (.6M)H, 3000 PSI Con	EA	148.06	
9005	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9006	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9007	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9008	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
2903	Prcst Conc Planter, 42"Dia x 30"H (1.05M)Dia x (.75M)H, 3000PSI Con	EA	155.74	
9005	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9006	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9007	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9008	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	

03414 3000 Precast Concrete Handrails

03414 3900 Material Cost

Note: Material Cost Includes 3000 Psi (210 Kg/Cm²) Concrete, Imbedded Items, Formwork And Precast Operations

3901	Prcst Conc Handrail, 4" (10 cm)Thk 3000 PSI Concrete	CY	538.26	
9011	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9012	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9013	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9014	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3902	Prcst Conc Handrail, 5" (12.5cm)Tk 3000 PSI Concrete	CY	538.26	
9011	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9012	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9013	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9014	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
3903	Prcst Conc Handrail, 6" (15 cm)Thk 3000 PSI Concrete	CY	538.26	
9011	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9012	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9013	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9014	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
3904	Prcst Conc Handrail, 8" (20 cm)Thk 3000 PSI Concrete	CY	538.26	
9011	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9012	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9013	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9014	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
03414 4000 Precast Concrete Sun Screen And Trellis				
03414 4100 Sun Screen Blades				
03414 4180 Material Cost				
Note: Material Cost Includes 3000 Psi (210 Kg/Cm ²) Concrete, Inbedded Items, Formwork And Precast Concrete Operations				
4181	Precast Sun Screen Blades, 4"Thk (10 cm)Thk, 3000 PSI Concrete	CY	990.89	
9015	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9016	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9017	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9018	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4182	Precast Sun Screen Blades, 5"Thk (12.5cm)Thk, 3000 PSI Concrete	CY	891.80	
9015	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9016	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9017	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9018	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4183	Precast Sun Screen Blades, 6"Thk (15 cm)Thk, 3000 PSI Concrete	CY	792.71	
9015	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9016	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9017	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9018	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4184	Precast Sun Screen Blades, 8"Thk (20 cm)Thk, 3000 PSI Concrete	CY	495.44	
9015	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9016	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9017	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9018	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
03414 4200 Sun Screen/Trellis Units				
03414 4280 Material Cost				
Note: Material Cost Includes 3000 Psi (210 Kg/Cm ²) Concrete, Inbedded Items, Formwork And Precast Concrete Operations				
4281	Precast Trellises Blades, 4"Thk (10 cm)Thk, 3000 PSI Concrete	CY	990.89	
9021	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9022	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9023	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9024	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4282	Precast Trellises Blades, 5"Thk (12.5cm)Thk, 3000 PSI Concrete	CY	891.80	
9021	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9022	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9023	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9024	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4283	Precast Trellises Blades, 6"Thk (15 cm)Thk, 3000 PSI Concrete	CY	792.71	
9021	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9022	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9023	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9024	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
4284	Precast Trellises Blades, 8"Thk (20 cm)Thk, 3000 PSI Concrete	CY	495.44	
9021	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	
9022	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9023	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9024	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per CY		9.03	
03414 5000 Miscellaneous Precast Items				
03414 5100 Precast Bumper Curbs				
5101	Precast Bumper Curbs, 6"x10"x 7' (.15 M)x(.25 M)x(2.1 M)	EA	23.97	3.69
9031	For 3500 Psi (245 Kg/Cm ²) Concrete Add Per CY		3.05	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9032	For 4000 Psi (280 Kg/Cm ²) Concrete Add Per CY		4.52	
9033	For 4500 Psi (315 Kg/Cm ²) Concrete Add Per CY		6.04	
9034	For 5000 Psi (350 Kg/Cm ²) Concrete Add Per Cy		9.03	
03414 5200	Precast Skylight Shells			
03414 5280	Material Cost			
Note: Material Cost Includes 3000 Psi (210 Kg/Cm ²) Concrete, Imbedded Items, Formwork And Precase Concrete Operations				
5281	Prec Skylight w/4.4' Rad, 3.5"Thk (1.35 M)Rad & (9 cm)Thk,3000 PS	CY	570.07	
03414 5300	Precast Seating Piece			
5311	Instl Prec Conc Bench,0-1 Ton/Pc Based on Using a 20 Ton Crane	EA	67.65	30.43
5312	Instl Prec Conc Bench,1-2 Ton/Pc Based on Using a 20 Ton Crane	EA	84.48	38.01
5313	Instl Prec Conc Bench,2-3 Ton/Pc Based on Using a 20 Ton Crane	EA	113.14	50.91
03414 5380	Material Cost			
Note: Material Cost Includes 3000 Psi (210 Kg/Cm ²) Concrete, Imbedded Items, Formwork And Precast Concrete Operations				
5381	Prec Conc Bench, 10'x2.5'x11"Tk (3 M)x(75 cm)x(28 cm)Thick	CY	287.38	
03414 5400	Precast Splash Blocks			
5401	Prec Conc Splash Blocks,Std Size	EA	5.13	0.97
03414 6000	Precast Mnaret Segments			
03414 6900	Material Costs			
Note: Material Costs Includes 3000 Psi (210 Kg/Cm ²) Concrete Imbedded Items, Formwork And Precast Concrete Operations				
6901	Prkst Conc Mnaret, L-Shaped Seg Incl Post Tension Cost,3000 PSI	CY	1,467.98	
6902	Prkst Conc Mnaret, O-Shaped Seg Incl Post Tension Cost,3000 PSI	CY	1,467.98	
6903	Prkst Conc Mnaret, Platform Seg Incl Post Tension Cost,3000 PSI	CY	1,467.98	
6904	Prkst Conc Mnaret, Cap Segment Incl Post Tension Cost,3000 PSI	CY	1,467.98	
03414 7000	Msc. Precast Accessories			
03414 7100	Bearing Pads For Precast Mmbers			
03414 7110	Continuous 2 In Wide Strips			
7111	Bearing Pads, Cont 2"W x 1/8"Thk Strips for Precast Mmbers	LF	0.48	
7112	Bearing Pads, Cont 2"W x 1/4"Thk Strips for Precast Mmbers	LF	0.68	
7113	Bearing Pads, Cont 2"W x 1/2"Thk Strips for Precast Mmbers	LF	1.13	
7114	Bearing Pads, Cont 2"W x 3/4"Thk Strips for Precast Mmbers	LF	1.59	
7115	Bearing Pads, Cont 2"W x 1"Thk Strips for Precast Mmbers	LF	2.06	
7116	Bearing Pads, Cont 2"W x 1-1/2"T Strips for Precast Mmbers	LF	2.96	
03436 0009	Slabs			
0010	Structural precast, grouted, 4" T, slabs, prestressed, roof &	SF	6.54	
0050	Structural precast, grouted, 6" T, slabs, prestressed, roof &	SF	6.13	
0100	Structural precast, grouted, 8" T, slabs, prestressed, roof &	SF	6.28	
0150	Structural precast, grouted, 10" T, slabs, prestressed, roof &	SF	6.62	
1040	Structural precast, slabs, 4" thick	SF	5.55	
1100	Structural precast, for 3500 psi concrete, add		0.11	
1105	Structural precast, for 4000 psi concrete, add		0.17	
1110	Structural precast, for 4500 psi concrete, add		0.22	
1115	Structural precast, for 5000 psi concrete, add		0.33	
1050	Structural precast, slabs, 5" thick	SF	6.10	
1100	Structural precast, for 3500 psi concrete, add		0.12	
1105	Structural precast, for 4000 psi concrete, add		0.18	
1110	Structural precast, for 4500 psi concrete, add		0.24	
1115	Structural precast, for 5000 psi concrete, add		0.37	
1060	Structural precast, slabs, 6" thick	SF	5.34	
1100	Structural precast, for 3500 psi concrete, add		0.11	
1105	Structural precast, for 4000 psi concrete, add		0.16	
1110	Structural precast, for 4500 psi concrete, add		0.21	
1115	Structural precast, for 5000 psi concrete, add		0.32	
1080	Structural precast, slabs, 8" thick	SF	5.64	
1100	Structural precast, for 3500 psi concrete, add		0.11	
1105	Structural precast, for 4000 psi concrete, add		0.17	
1110	Structural precast, for 4500 psi concrete, add		0.23	
1115	Structural precast, for 5000 psi concrete, add		0.34	
03440 0009	Tees			
NOTE: Includes Cost For Erection				
3000	Structural precast, under 40', prestressed multi tee,	SF	5.53	
3005	Structural precast, over 40', prestressed multi tee,	SF	6.50	
3030	Structural precast, under 40', prestressed single tee, roof	SF	9.00	
3040	Structural precast, over 40', prestressed single tee, roof	SF	11.09	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3050	Structural precast, under 40', prestressed single tee, roof	SF	10.69	
3055	Structural precast, over 40', prestressed single tee, roof	SF	12.71	
3060	Structural precast, under 40', wall panel, double tee	SF	7.35	
3080	Structural precast, over 40', wall panel, double tee	SF	14.14	

03450 Architectural Precast

NOTE: For Erection Costs See Section 03490.

03454 0010 Wall panel

Note: Material Cost Includes Cost Of 3000 Psi (210 Kg/Cm²) Concrete, Reinforcing Steel, Inbedded Items, Formwork And Precast Plant Operations

0340	Wall panel, 8' x 16', 4" thick, uninsulated, smooth grey, mat	SF	10.00	
4010	Structural precast, for 3500 psi concrete, add		0.20	
4015	Structural precast, for 4000 psi concrete, add		0.30	
4020	Structural precast, for 4500 psi concrete, add		0.40	
4025	Structural precast, for 5000 psi concrete, add		0.60	
4030	Structural precast, for white facing, add		2.00	
4035	Structural precast, solid white through thickness, add		2.00	
4040	Structural precast, broken rib finish, add		2.00	
4045	Structural precast, fluted surface, add		1.50	
4050	Structural precast, exposed aggregate, add		1.50	
4055	Structural precast, sandblasting of surface, add		1.20	
0350	Wall panel, 8' x 16', 5" thick, uninsulated, smooth grey, mat	SF	12.25	
4010	Structural precast, for 3500 psi concrete, add		0.25	
4015	Structural precast, for 4000 psi concrete, add		0.37	
4020	Structural precast, for 4500 psi concrete, add		0.49	
4025	Structural precast, for 5000 psi concrete, add		0.74	
4030	Structural precast, for white facing, add		2.45	
4035	Structural precast, solid white through thickness, add		2.45	
4040	Structural precast, broken rib finish, add		2.45	
4045	Structural precast, fluted surface, add		1.84	
4050	Structural precast, exposed aggregate, add		1.84	
4055	Structural precast, sandblasting of surface, add		1.47	
0360	Wall panel, 8' x 16', 6" thick, uninsulated, smooth grey, mat	SF	14.29	
4010	Structural precast, for 3500 psi concrete, add		0.29	
4015	Structural precast, for 4000 psi concrete, add		0.43	
4020	Structural precast, for 4500 psi concrete, add		0.57	
4025	Structural precast, for 5000 psi concrete, add		0.86	
4030	Structural precast, for white facing, add		2.86	
4035	Structural precast, solid white through thickness, add		2.86	
4040	Structural precast, broken rib finish, add		2.86	
4045	Structural precast, fluted surface, add		2.14	
4050	Structural precast, exposed aggregate, add		2.14	
4055	Structural precast, sandblasting of surface, add		1.71	
0380	Wall panel, 8' x 16', 8" thick, uninsulated, smooth grey, mat	SF	17.87	
4010	Structural precast, for 3500 psi concrete, add		0.36	
4015	Structural precast, for 4000 psi concrete, add		0.54	
4020	Structural precast, for 4500 psi concrete, add		0.71	
4025	Structural precast, for 5000 psi concrete, add		1.07	
4030	Structural precast, for white facing, add		3.57	
4035	Structural precast, solid white through thickness, add		3.57	
4040	Structural precast, broken rib finish, add		3.57	
4045	Structural precast, fluted surface, add		2.68	
4050	Structural precast, exposed aggregate, add		2.68	
4055	Structural precast, sandblasting of surface, add		2.14	

03455 0010 Precast concrete retaining walls

Note: Precast Filter Fabric, Soil Reinforcing Mesh And Cast-In-Place Coping. Price Does Not Include Concrete Leveling Pad, Select Earth Backfill, Or Engineering Fees.

0100	Precast conc retaining walls, 10 - 15' high, tied-back earth	SF	18.02	
0110	Precast conc retaining walls, 16 - 20' high, tied-back earth	SF	16.47	
0120	Precast conc retaining walls, 21 - 25' high, tied-back earth	SF	15.70	
0130	Precast conc retaining walls, 26 - 30' high, tied-back earth	SF	16.13	
0140	Precast conc retaining walls, over 30' high, tied-back earth	SF	15.74	

03470 Tilt-Up Precast

NOTE: Include Cost For Erection

03474 0009 Tilt-up

0010	Tilt-up, precast wall panel construction, 5.5" thick walls	SF	6.25	
0100	Tilt-up, precast wall panel construction, 7.5" thick walls	SF	6.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
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0120	Tilt-up, precast wall panel construction, 9.25" thick walls	SF	7.49	
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03480 Precast Specialties, Lintels

NOTE: Include Cost For Erection.

03482 0010 Lintels

0800	Lintels, precast conc, stock units to 5' L, 4" W 8" H	LF	9.42	3.84
0850	Lintels, precast conc, stock units 5'-12' L, 4" W 8" H	LF	12.32	5.13
1000	Lintels, precast conc, stock units to 5' L, 6" W 8" H	LF	15.36	5.12
1050	Lintels, precast conc, stock units 5'-12' L, 6" W 8" H	LF	13.58	5.13
1200	Lintels, precast conc, stock units to 5' L, 8" W 8" H	LF	16.79	5.12
1250	Lintels, precast conc, stock units 5'-12' L, 8" W 8" H	LF	15.80	5.13
1300	Lintels, precast conc, stock units to 5' L, 8" W 12" H	LF	23.31	11.58
1320	Lintels, precast conc, stock units 5'-12' L, 8" W 12" H	LF	23.25	11.04
1400	Lintels, precast conc, stock units to 14' L, 10" W 8" H	LF	42.38	8.93
1450	Lintels, precast conc, stock units to 19' L, 12" W 8" H	LF	44.62	8.43
1500	Lintels, precast conc, stock units to 5' L, 12" W 12" H	LF	26.37	12.13
1520	Lintels, precast conc, stock units 5'-12' L, 12" W 12" H	LF	25.51	11.58
1540	Lintels, precast conc, stock units to 5' L, 12" W 16" H	LF	28.89	11.04
1560	Lintels, precast conc, stock units 5'-12' L, 12" W 16" H	LF	27.04	10.47

03490 Precast Erection

NOTE: Erection Costs Include: Handling, Hoisting In Place, Alignment, Bracing And Permanent Connections. Cost Does Not Include Grout Or Caulking Of Joints.

03490 2000 Precast Concrete Planter

03490 2100 Installation Cost

Note: Installation Costs Include Handling, Hoisting Into Place, Alignment, And Permanent Connections. Costs Do Not Include Grouting

2101	Install Precst Planter, 0-4 Ton/Ea	EA	84.48	
2102	Install Precst Planter, 4-6 Ton/Ea	EA	93.91	
2103	Install Precst Planter, 6-8 Ton/Ea	EA	120.91	
2104	Install Precst Planter, 8-10 Tn/Ea	EA	169.70	

03490 3000 Precast Concrete Handrails

03490 3100 Installation Cost

Note: Installation Costs Include Handling, Hoisting Into Place, Alignment, And Permanent Connections. Costs Do Not Include Grouting

3101	Install Prec Hdrl, 0-2 Ton/Hdrl	EA	56.40	
3102	Install Prec Hdrl, Over 2 Tn/Hdrl	EA	67.65	

03490 4100 Sun Screen Blades

03490 4110 Installation Cost

Note: Installation Costs Include Handling, Hoisting Into Place, Alignment, Bracing, And Permanent Connecntions

4111	Install Prec Sun Screen Blade, 0-1 Ton/Ea	EA	28.20	
4112	Install Prec Sun Screen Blade, 1-2 Ton/Ea	EA	33.88	
4113	Install Prec Sun Screen Blade, 2-3 Ton/Ea	EA	42.33	

03490 4200 Sun Screen/Trellis Units

03490 4210 Installation Cost Using A 50 Ton Hydraulic Crane

Note: Installation Cost Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent To Connections

4211	Install Prec Trellis, 0-1 Tn/Unit 100' (30M) Max Rad w/50 Ton Cran	EA	134.51	
4212	Install Prec Trellis, 1-3 Tn/Unit 65' (20M) Max Rad w/50 Ton Crane	EA	150.46	
4213	Install Prec Trellis, 3-5 Tn/Unit 50' (15M) Max Rad w/50 Ton Crane	EA	170.69	
4214	Install Prec Trellis, 5-7 Tn/Unit 40' (12M) Max Rad w/50 Ton Crane	EA	182.43	

03490 5200 Precast Skylight Shells

03490 5210 Installation Cost Using A 90 Ton Crawler Crane

Note: Installation Cost Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections

5211	Instl Prec Skylt Shell, 0-4 Tn/Ea Based on 90 Ton Crawler Crane	EA	193.98	
5212	Instl Prec Skylt Shell, 4-6 Tn/Ea Based on 90 Ton Crawler Crane	EA	215.39	
5213	Instl Prec Skylt Shell, 6-8 Tn/Ea Based on 90 Ton Crawler Crane	EA	242.13	

03490 5300 Precast Seating Piece

03490 5310 Installation Costs Using 20 M Hydraulic Crane

Note: Installation Cost Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections

03490 6000 Precast Mnaret Segments

03490 6100 Installation Costs Using 50 Ton Hydraulic Crane

Note: Using a 50 Ton Hydraulic Crane. Installation Costs Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03490 6110 L - Shaped Segments				
6111	Instl Minaret, L-Shp Seg, 0-1Tn/Ea 100' (30M) Max Rad w/50 Ton Cran	EA	130.89	
6112	Instl Minaret, L-Shp Seg, 1-3Tn/Ea 65' (20M) Max Rad w/50 Ton Crane	EA	146.68	
6113	Instl Minaret, L-Shp Seg, 3-5Tn/Ea 50' (15M) Max Rad w/50 Ton Crane	EA	165.85	
6114	Instl Minaret, L-Shp Seg, 5-7Tn/Ea 40' (12M) Max Rad w/50 Ton Crane	EA	176.90	
03490 6120 O - Shaped Segments				
6121	Instl Minaret, 0-Shp Seg, 0-1Tn/Ea 100' (30M) Max Rad w/50 Ton Cran	EA	138.33	
6122	Instl Minaret, 0-Shp Seg, 1-3Tn/Ea 65' (20M) Max Rad w/50 Ton Crane	EA	155.26	
6123	Instl Minaret, 0-Shp Seg, 3-5Tn/Ea 50' (15M) Max Rad w/50 Ton Crane	EA	175.83	
6124	Instl Minaret, 0-Shp Seg, 5-7Tn/Ea 40' (12M) Max Rad w/50 Ton Crane	EA	188.31	
03490 6130 Platform Segment				
6131	Instl Minaret, Pltfm Seg, 0-1Tn/Ea 100' (30M) Max Rad w/50 Ton Cran	EA	265.35	
6132	Instl Minaret, Pltfm Seg, 1-3Tn/Ea 65' (20M) Max Rad w/50 Ton Crane	EA	320.76	
6133	Instl Minaret, Pltfm Seg, 3-5Tn/Ea 50' (15M) Max Rad w/50 Ton Crane	EA	355.95	
6134	Instl Minaret, Pltfm Seg, 5-7Tn/Ea 40' (12M) Max Rad w/50 Ton Crane	EA	399.84	
03490 6140 Cap Segment				
6141	Instl Minaret, Cap Seg, 0-1 Ton/Ea 100' (30M) Max Rad w/50 Ton Cran	EA	145.22	
6142	Instl Minaret, Cap Seg, 1-3 Ton/Ea 65' (20M) Max Rad w/50 Ton Crane	EA	162.16	
6143	Instl Minaret, Cap Seg, 3-5 Ton/Ea 50' (15M) Max Rad w/50 Ton Crane	EA	184.73	
6144	Instl Minaret, Cap Seg, 5-7 Ton/Ea 40' (12M) Max Rad w/50 Ton Crane	EA	197.21	
03490 6200 Installation Costs Using A 90 Ton Crawler Crane				
Note: Using A 90 Ton Crawler Crane. Installation Costs Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections. Costs Do Not Include Grouting Or Caulking Of Joints				
03490 6210 L - Shaped Segments				
6211	Instl Minaret, L-Shp Seg, 0-1Tn/Ea 180' (55M) Max Rad w/90 Ton Cran	EA	135.88	
6212	Instl Minaret, L-Shp Seg, 1-3Tn/Ea 135' (41M) Max Rad w/90 Ton Cran	EA	152.27	
6213	Instl Minaret, L-Shp Seg, 3-5Tn/Ea 100' (30M) Max Rad w/90 Ton Cran	EA	172.17	
6214	Instl Minaret, L-Shp Seg, 5-7Tn/Ea 79' (24M) Max Rad w/90 Ton Crane	EA	183.64	
03490 6220 O - Shaped Segment				
6221	Instl Minaret, 0-Shp Seg, 0-1Tn/Ea 180' (55M) Max Rad w/90 Ton Cran	EA	143.61	
6222	Instl Minaret, 0-Shp Seg, 1-3Tn/Ea 135' (41M) Max Rad w/90 Ton Cran	EA	161.18	
6223	Instl Minaret, 0-Shp Seg, 3-5Tn/Ea 100' (30M) Max Rad w/90 Ton Cran	EA	182.54	
6224	Instl Minaret, 0-Shp Seg, 5-7Tn/Ea 79' (24M) Max Rad w/90 Ton Crane	EA	195.49	
03490 6230 Platform Segment				
6231	Instl Minaret, Pltfm Seg, 0-1Tn/Ea 180' (55M) Max Rad w/90 Ton Cran	EA	219.58	
6232	Instl Minaret, Pltfm Seg, 1-3Tn/Ea 135' (41M) Max Rad w/90 Ton Cran	EA	265.80	
6233	Instl Minaret, Pltfm Seg, 3-5Tn/Ea 100' (30M) Max Rad w/90 Ton Cran	EA	294.18	
6234	Instl Minaret, Pltfm Seg, 5-7Tn/Ea 79' (24M) Max Rad w/90 Ton Crane	EA	332.99	
03490 6240 Cap Segment				
6241	Instl Minaret, Cap Seg, 0-1 Ton/Ea 180' (55M) Max Rad w/90 Ton Cran	EA	150.75	
6242	Instl Minaret, Cap Seg, 1-3 Ton/Ea 135' (41M) Max Rad w/90 Ton Cran	EA	168.34	
6243	Instl Minaret, Cap Seg, 3-5 Ton/Ea 100' (30M) Max Rad w/90 Ton Cran	EA	191.78	
6244	Instl Minaret, Cap Seg, 5-7 Ton/Ea 79' (24M) Max Rad w/90 Ton Crane	EA	204.73	
03491 0008 Wall panels, decks, beans, columns				
03491 0009 Wall panel				
Note: Erection Costs Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections. Costs Do Not Include Grouting Or Caulking Of Joints				
0010	Precast erection, 100' max rad, 50 ton crane, 0-1 ton/pc, wall	EA	162.80	
0100	Precast erection, 65' max rad, 50 ton crane, 1-3 ton/pc, wall	EA	183.15	
0130	Precast erection, 50' max rad, 50 ton crane, 3-5 ton/pc, wall	EA	195.36	
0150	Precast erection, 40' max rad, 50 ton crane, 5-7 ton/pc, wall	EA	209.31	
0170	Precast erection, 33' max rad, 50 ton crane, 7-9 ton/pc, wall	EA	225.41	
0190	Precast erection, 30' max rad, 50 ton crane, 9-11 ton/pc, wall	EA	225.41	
1100	Precast erection, 25' max rad, 50 ton crane, 11-13 ton/pc, wall	EA	244.19	
1300	Precast erection, 23' max rad, 50 ton crane, 13-15 ton/pc, wall	EA	244.19	
2000	Precast erection, 180' max rad, 90 ton crane, 0-1 ton/pc, wall	EA	183.19	
2010	Precast erection, 121' max rad, 90 ton crane, 1-3 ton/pc, wall	EA	206.09	
2020	Precast erection, 31' max rad, 90 ton crane, 20-25 ton/pc, wall	EA	299.77	
2025	Precast erection, 26' max rad, 90 ton crane, 25-30 ton/pc, wall	EA	329.74	
2030	Precast erection, 89' max rad, 90 ton crane, 3-5 ton/pc, wall	EA	219.83	
2035	Precast erection, 23' max rad, 90 ton crane, 35-40 ton/pc, wall	EA	366.38	
2040	Precast erection, 25' max rad, 90 ton crane, 30-35 ton/pc, wall	EA	329.74	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2050	Precast erection, 75' max rad, 90 ton crane, 5-7 ton/pc, wall	EA	235.53	
2070	Precast erection, 65' max rad, 90 ton crane, 7-9 ton/pc, wall	EA	253.64	
2090	Precast erection, 55' max rad, 90 ton crane, 9-11 ton/pc, wall	EA	253.64	
2110	Precast erection, 90' max rad, 90 ton crane, 11-13 ton/pc, wall	EA	274.78	
2130	Precast erection, 43' max rad, 90 ton crane, 13-15 ton/pc, wall	EA	274.78	
2150	Precast erection, 36' max rad, 90 ton crane, 15-20 ton/pc, wall	EA	299.77	
03491 2999	Floor deck			
3000	Precast erection, 150' max rad, 90 ton crane, 0-2 ton/pc, floor	EA	137.39	
3030	Precast erection, 121' max rad, 90 ton crane, 2-3 ton/pc, floor	EA	149.88	
3040	Precast erection, 105' max rad, 90 ton crane, 3-4 ton/pc, floor	EA	164.87	
3050	Precast erection, 88' max rad, 90 ton crane, 4-5 ton/pc, floor	EA	164.87	
3060	Precast erection, 82' max rad, 90 ton crane, 5-6 ton/pc, floor	EA	183.19	
3070	Precast erection, 75' max rad, 90 ton crane, 6-7 ton/pc, floor	EA	183.19	
3080	Precast erection, 70' max rad, 90 ton crane, 7-8 ton/pc, floor	EA	206.09	
3090	Precast erection, 65' max rad, 90 ton crane, 8-9 ton/pc, floor	EA	219.83	
3100	Precast erection, 60' max rad, 90 ton crane, 9-10 ton/pc, floor	EA	235.53	
03491 3999	Beams, girders, joists			
Note: Erection Costs Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections. Costs Do Not Include Grouting Or Caulking Of Joints				
4000	Precast erection, 89' max rad, 90 ton crane, 0-5 ton/pc,	EA	219.83	
4010	Precast erection, 60' max rad, 90 ton crane, 5-10 ton/pc,	EA	219.83	
4020	Precast erection, 43' max rad, 90 ton crane, 10-15 ton/pc,	EA	219.83	
4030	Precast erection, 36' max rad, 90 ton crane, 15-20 ton/pc,	EA	235.53	
4040	Precast erection, 110' max rad, 90 ton crane, 0-5 ton/pc,	EA	253.64	
4050	Precast erection, 75' max rad, 90 ton crane, 5-10 ton/pc,	EA	253.64	
4060	Precast erection, 55' max rad, 90 ton crane, 10-15 ton/pc,	EA	274.78	
4070	Precast erection, 50' max rad, 90 ton crane, 15-20 ton/pc,	EA	274.78	
4080	Precast erection, 40' max rad, 90 ton crane, 20-25 ton/pc,	EA	274.78	
4090	Precast erection, 33' max rad, 90 ton crane, 25-30 ton/pc,	EA	329.74	
4100	Precast erection, 30' max rad, 90 ton crane, 30-35 ton/pc,	EA	329.74	
4110	Precast erection, 28' max rad, 90 ton crane, 35-40 ton/pc,	EA	329.74	
03491 4999	Column			
Note: Erection Costs Include Handling, Hoisting Into Place, Alignment, Bracing And Permanent Connections. Costs Do Not Include Grouting Or Caulking Of Joints				
5000	Precast erection, 121' max rad, 90 ton crane, 0-3 ton/pc, column	EA	206.09	
5030	Precast erection, 89' max rad, 90 ton crane, 3-5 ton/pc, column	EA	206.09	
5050	Precast erection, 75' max rad, 90 ton crane, 5-7 ton/pc, column	EA	206.09	
5070	Precast erection, 65' max rad, 90 ton crane, 7-9 ton/pc, column	EA	219.83	
5090	Precast erection, 55' max rad, 90 ton crane, 9-11 ton/pc,	EA	219.83	
5110	Precast erection, 50' max rad, 90 ton crane, 11-13 ton/pc,	EA	235.53	
5130	Precast erection, 43' max rad, 90 ton crane, 13-15 ton/pc,	EA	235.53	

03500 Cementitious Decks & Toppings

03510 Gypsum

03510 1000 Gypsum Fill (Class A)

1001	Prec Gyp Fill Conc Deck, 2"Thk Class A, (51mm) Thick	SF	2.70	
1002	Prec Gyp Fill Conc Deck, 2-1/2"Tk Class A, (63mm) Thick	SF	3.33	
1003	Prec Gyp Fill Conc Deck, 3"Thk Class A, (76mm) Thick	SF	3.97	
1004	Prec Gyp Fill Conc Deck, 3-1/2"Tk Class A, (88mm) Thick	SF	4.61	
1005	Precst Gyp Fill Conc Deck, 4"Thk Class A, (10cm) Thick	SF	5.27	

03510 2000 Formboard (For Lightweight Deck)

2001	Gyp Deck Formboard, 1/2"Sheetrock For Lightweight Deck, (13mm)Thk	SF	0.95	
2002	Gyp Deck Formbd, 1" Min Fib Board For Lightweight Deck, (25mm)Thk	SF	1.28	
2003	Gyp Deck Formbd, 1-1/2"Min Fib Bd For Lightweight Deck, (37mm)Thk	SF	2.88	
2004	Gyp Deck Formbd, 1" Cem Fib Board For Lightweight Deck, (25mm)Thk	SF	1.02	
2005	Gyp Deck Formbd, 1-1/2"Cem Fib Bd For Lightweight Deck, (37mm)Thk	SF	1.27	
2006	Gyp Deck Formbd, 1" Glass Fib Bd For Lightweight Deck, (25mm)Thk	SF	1.46	
2007	Gyp Deck Formbd, 1-1/2"Glass Fib For Lightweight Deck, (37mm)Thk	SF	1.85	

03510 3000 Board Deck Support For Above

3001	Gyp Deck Formbd Sup, 5' Bulb Tee 40 #/SF, (1.5 M) Span	SF	0.39	
3002	Gyp Deck Formbd Sup, 8' Bulb Tee 40 #/SF, (2.4 M) Span	SF	0.70	

03520 Lightweight Concrete

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03520 4000	Gypsum Plank			
4001	Insul Conc Gyp Plank, 2"(51mm)Tk Roof Deck	SF	1.80	
4002	Insul Conc Gyp Plank, 3"(76mm)Tk Roof Deck	SF	2.41	
03522 0009	Concrete channel slabs			
0010	Cementitious deck, straight, ltwt, 2.75" or 3.5" thk, channel	SF	4.27	
0335	Cementitious deck, 3.5" thk, ltwt, str insul, rf deck,	SF	5.47	
0375	Cementitious deck, 3.75" thk, ltwt, str insul, rf deck,	SF	5.86	
0475	Cementitious deck, 4.75" thk, ltwt, str insul, rf deck,	SF	8.51	
1275	Cementitious deck, chopped insul rf deck, 2.75"thk, ltwt, channel	SF	7.06	
1350	Cementitious deck, chopped insul rf deck, 3.5"thk, ltwt, channel	SF	8.86	
1375	Cementitious deck, chopped insul rf deck, 3.75"thk, ltwt, channel	SF	9.45	
1475	Cementitious deck, chopped insul rf deck, 4.75"thk, ltwt, channel	SF	13.44	
03524 0009	Concrete plank			
0010	Cementitious deck, ltwt, plank, nailable, T&G, 2" thick	SF	4.16	0.76
0200	<i>Cementious deck, for sloping roofs, slope over 4 in 12, add</i>		0.28	
0250	<i>Cementious deck, slope over 6 in 12, add</i>		0.17	
0025	Cementitious deck, 2.5" thick, ltwt, plank, insulated, roof	SF	4.56	0.75
0200	<i>Cementious deck, for sloping roofs, slope over 4 in 12, add</i>		0.30	
0250	<i>Cementious deck, slope over 6 in 12, add</i>		0.18	
0030	Cementitious deck, 3" thick, ltwt, plank, insulated, roof	SF	5.19	0.75
0200	<i>Cementious deck, for sloping roofs, slope over 4 in 12, add</i>		0.33	
0250	<i>Cementious deck, slope over 6 in 12, add</i>		0.20	
0035	Cementitious deck, 3.5" thick, ltwt, plank, insulated, roof	SF	5.54	0.76
0200	<i>Cementious deck, for sloping roofs, slope over 4 in 12, add</i>		0.36	
0250	<i>Cementious deck, slope over 6 in 12, add</i>		0.21	
0040	Cementitious deck, 4" thick, ltwt, plank, insulated, roof	SF	6.28	0.75
0200	<i>Cementious deck, for sloping roofs, slope over 4 in 12, add</i>		0.37	
0250	<i>Cementious deck, slope over 6 in 12, add</i>		0.22	
03526 0010	Insulating			
0105	Insulating ltwt cell conc roof fill, 1:4 field mix,	CY	146.11	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		24.58	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		12.29	
0110	Insulating ltwt cell conc roof fill, 1:6 field mix	CY	174.48	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		24.58	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		12.29	
0140	Insulating 3" insul roof deck, also vermiculite, perlite, 1:4	SF	1.31	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		0.21	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		0.10	
0160	Insulating 3" insul roof deck, also vermiculite, perlite, 1:6	SF	1.57	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		0.21	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		0.10	
0200	Insulating roof deck, roof fill, 2" T, ready mix, 1:6 mix	SF	0.94	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		0.12	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		0.06	
0250	Insulating roof deck, roof fill, 3" T, ready mix, 1:6 mix	SF	1.36	
0500	<i>Insulating roof conc, for smooth trowel finish, add</i>		0.16	
0510	<i>Insulating roof conc, for building over 50' high, add</i>		0.08	
03530	Wood Fiber Systems			
03536 0010	Wood fiber			
03536 0049	Plank			
03536 0049	Bevelled			
0050	Wood fiber, lightweight cement, plank, bevelled, 1" thick	SF	2.07	0.86
03536 0099	T & G			
0100	Wood fiber, lightweight cement, plank, T & G, 1-1/2" thick	SF	1.88	0.87
0150	Wood fiber, lightweight cement, plank, T & G, 2" thick	SF	2.12	0.87
0200	Wood fiber, lightweight cement, plank, T & G, 2-1/2" thick	SF	2.49	0.87
0250	Wood fiber, lightweight cement, plank, T & G, 3" thick	SF	2.87	0.86
0300	Wood fiber, lightweight cement, plank, T & G, 3-1/2" thick	SF	4.93	0.87
0350	Wood fiber, lightweight cement, plank, T & G, 4" thick	SF	5.58	0.87
03536 0999	Bulb tee			
1000	Wood fiber, ltwt cement, 6' span, bulb tee/sub-purlin/grout, add	SF	2.07	
1100	Wood fiber, ltwt cement, 8' span, bulb tee/sub-purlin/grout, add	SF	2.17	
03700	Concrete Restoration & Cleaning			
03720	Concrete Resurfacing			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
03720 1000	Bush Hammer Concrete			
1001	Bush Hammer Green Concrete	SF	2.03	
1002	Bush Hammer Cured Concrete	SF	3.05	
03720 2000	Patching Concrete			
	NOTE: Includes Chipping And Cleaning Of Floor, Prep, And Clean-up.			
03720 2100	Floors			
2101	Patch Floors, 1/4", Regular Grout	SF	2.75	
2102	Patch Floors, 1/4", Epoxy Grout	SF	5.99	
03720 2200	Walls			
2201	Patch Walls, Epoxy Grout	SF	5.49	
03720 4000	Concrete Finishes			
03720 4300	Concrete Patching			
	Note: Costs Do Not Include Chipping Out Of Concrete			
03720 4320	Walls			
4324	Polymer Wall Patch, Avg 4" Thick , Incl Chip, Clean & Disposal	SF	5.97	
03730	Concrete Rehabilitation			
03730 0010	Crack repair			
1000	Conc rehabilitation, sand blasting	SF	2.29	
03740	Self Leveling Underlayment			
03740 1000	Self Leveling Underlayment for Concrete Floors (Includes Surface Prep)			
1002	1/4" Thick, Avg Depth, Self Leveling Underlayment	SF	2.43	
1003	1/2" Thick, Avg Depth, Self Leveling Underlayment	SF	4.06	
1005	1" Thick, Avg Depth, Self Leveling Underlayment	SF	7.40	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
04100 Mortar & Masonry Accessories				
04100 Mortar				
Note: Mortar And Sand Are Included In Brick Masonry And Block Masonry Costs.				
04110 2000 Sand Fill				
04110 2100 Cavity Walls Sand Fill Cms				
2101	Sand Fill Cavity Walls - 2"Space (0.167 CF/SF)	SF	1.15	
2102	Sand Fill Cavity Walls - 3"Space (0.250 CF/SF)	SF	1.61	
2103	Sand Fill Cavity Walls - 4"Space (0.333 CF/SF)	SF	1.99	
2104	Sand Fill Cavity Walls - 6"Space (0.500 CF/SF)	SF	2.70	
04116 0009 Grouting, not including block				
04116 0010 Bond beams and lintels Concrete Fill, Not Including Block				
0011	Grouting bond bm & lintels, 0.15 CF/LF, 8" D, pumped, no blk, 6" T	LF	1.37	
0020	Grouting bond bm & lintels, 0.2 CF/LF, 8" D, pumped, no blk, 8" T	LF	1.63	
0050	Grouting bond bm & lintels, 0.25 CF/LF, 8" D, pumped, no blk, 10" T	LF	1.98	
0060	Grouting bond bm & lintels, 0.3 CF/LF, 8" D, pumped, no blk, 12" T	LF	2.31	
04116 0199 Concrete block cores				
0200	Grouting conc block cores, 0.067 CF/SF, solid, 4" T, by hand	SF	1.34	
0210	Grouting conc block cores, 0.175 CF/SF, solid, 6" T, pumped	SF	2.23	
0250	Grouting conc block cores, 0.258 CF/SF, solid, 8" T, pumped	SF	2.67	
0300	Grouting conc block cores, 0.340 CF/SF, solid, 10" T, pumped	SF	3.07	
0350	Grouting conc block cores, 0.422 CF/SF, solid, 12" T, pumped	SF	3.49	
04116 0499 Cavity walls				
0500	Grouting, cavity wall, 0.167 CF/SF, 2" space, pumped	SF	1.35	
0550	Grouting, cavity wall, 0.250 CF/SF, 3" space, pumped	SF	1.98	
0600	Grouting, cavity wall, 0.333 CF/SF, 4" space, pumped	SF	2.37	
0700	Grouting, cavity wall, 0.500 CF/SF, 6" space, pumped	SF	3.50	
04116 0799 Door frames				
0800	Grouting, door frame, 2.5 CF/opening, 3' x 7' opening	OPN	28.53	
0850	Grouting, door frame, 3.5 CF/opening, 6' x 7' opening	OPN	38.75	
04124 7000 Cement And Sand Grout On Walls, To 1/8 In Thick				
7001	1/8"(3cm)Thk Grout on Walls Cement and Sand Grout	SF	1.35	
04150 Masonry Accessories				
04152 0009 Anchor bolts				
0010	Anchor bolts, hooked type w/nut & washer, 1/2" dia, 8" long	EA	1.87	
0012	5/8"x 8"L, Hook Type Anchor Bolt (21cm Long) w/Nuts, (Masonry)	EA	2.03	
0030	Anchor bolts, hooked type w/nut & washer, 12" long, 1/2" dia	EA	2.24	
0032	5/8"x12"L, Hook Type Anchor Bolt (31cm Long) w/Nuts, (Masonry)	EA	2.47	
0060	Anchor bolts, hooked type w/nut & washer, 3/4" dia, 8" long	EA	4.04	
0070	Anchor bolts, hooked type w/nut & washer, 12" long, 3/4" dia	EA	4.48	
04154 0009 Control joint				
0010	Control joint, rubber, 4" & wider wall	LF	3.83	0.19
0050	Control joint, PVC, 4" wall	LF	2.67	0.19
0100	Control joint, rubber, 6" wall	LF	6.61	0.28
0120	Control joint, PVC, 6" wall	LF	3.10	0.12
0140	Control joint, rubber, 8" & wider wall	LF	8.29	0.34
0160	Control joint, PVC, 8" wall	LF	3.42	0.09
04155 0009 Joint reinforcing				
04155 0009 Steel bars				
0010	Joint reinf, steel bars, placed horiz, #3 & #4 bars	LB	0.94	
0020	Joint reinf, steel bars, placed horiz, #5 & #6 bars	LB	0.70	
0050	Joint reinf, steel bars, placed vertical, #3 & #4 bars	LB	1.10	
0060	Joint reinf, steel bars, placed vertical, #5 & #6 bars	LB	0.77	
04155 0500 Wire strips, ladder type, mill galv				
0600	Joint reinf, 9 ga sides & ties, 4" wall, galv, wire strips, ladder	CLF	21.00	
3500	Joint reinf, for hot dip galvanizing, add		6.37	
3510	Joint reinf, for class 1 finish, add		1.27	
3600	Joint reinf, for cavity wall type with drip section, add		1.08	
0650	Joint reinf, 9 ga sides & ties, 6" wall, galv, wire strips, ladder	CLF	20.91	
3500	Joint reinf, for hot dip galvanizing, add		6.33	
3510	Joint reinf, for class 1 finish, add		1.27	
3600	Joint reinf, for cavity wall type with drip section, add		1.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0700	Joint reinf, 9 ga sides & ties, 8" wall, galv, wire strips, ladder	CLF	23.21	
3500	Joint reinf, for hot dip galvanizing, add		6.65	
3510	Joint reinf, for class 1 finish, add		1.33	
3600	Joint reinf, for cavity wall type with drip section, add		1.26	
0750	Joint reinf, 9 ga sides & ties, 10" wall, galv, wire strips,	CLF	26.42	
3500	Joint reinf, for hot dip galvanizing, add		7.02	
3510	Joint reinf, for class 1 finish, add		1.40	
3600	Joint reinf, for cavity wall type with drip section, add		1.52	
0800	Joint reinf, 9 ga sides & ties, 12" wall, galv, wire strips,	CLF	27.19	
3500	Joint reinf, for hot dip galvanizing, add		7.40	
3510	Joint reinf, for class 1 finish, add		1.48	
3600	Joint reinf, for cavity wall type with drip section, add		1.54	
04155 1000	Wire strips, truss type, mill galv			
1150	Joint reinf, wire strips, truss type, galv, 6" wall	CLF	25.33	
3500	Joint reinf, for hot dip galvanizing, add		8.54	
3510	Joint reinf, for class 1 finish, add		1.71	
3600	Joint reinf, for cavity wall type with drip section, add		1.17	
1200	Joint reinf, wire strips, truss type, galv, 8" wall	CLF	27.21	
3500	Joint reinf, for hot dip galvanizing, add		8.65	
3510	Joint reinf, for class 1 finish, add		1.73	
3600	Joint reinf, for cavity wall type with drip section, add		1.34	
1250	Joint reinf, wire strips, truss type, galv, 10" wall	CLF	30.29	
3500	Joint reinf, for hot dip galvanizing, add		8.95	
3510	Joint reinf, for class 1 finish, add		1.79	
3600	Joint reinf, for cavity wall type with drip section, add		1.60	
1300	Joint reinf, wire strips, truss type, galv, 12" wall	CLF	31.25	
3500	Joint reinf, for hot dip galvanizing, add		9.43	
3510	Joint reinf, for class 1 finish, add		1.89	
3600	Joint reinf, for cavity wall type with drip section, add		1.62	
1350	Joint reinf, wire strips, truss type, galv, 14" wall	CLF	47.81	
3500	Joint reinf, for hot dip galvanizing, add		9.66	
3510	Joint reinf, for class 1 finish, add		1.93	
3600	Joint reinf, for cavity wall type with drip section, add		3.24	
04160 0009	Wall ties			
04160 0009	To brick veneer			
0010	Wall ties, to brick veneer, 22 gauge, galv, corrugated, 7/8" x	EA	0.30	
04160 0599	Cavity Wall, Z Type			
04160 0599	Z type			
0600	Wall ties, cavity wall, 1/4" dia, 6" long, Z type, galvanized	EA	0.45	
0650	Wall ties, cavity wall, 3/16" dia, 6" long, Z type, galvanized	EA	0.34	
0660	Wall ties, cavity wall, 1/8" dia, 6" long, Z-type, galvanized	EA	0.39	
0800	Wall ties, cavity wall, 1/4" dia, 8" long, Z-type, galvanized	EA	0.53	
0850	Wall ties, cavity wall, 3/16" dia, 8" long, Z-type, galvanized	EA	0.35	
0860	Wall ties, cavity wall, 3/16" dia, 8" long, Z-type, copperweld	EA	0.86	
0900	Wall ties, cavity wall, 3/16" dia, 10" long, Z-type, galv	EA	0.60	
0910	Wall ties, cavity wall, 1/4" dia, 10" long, Z-type, galv	EA	0.79	
0950	Wall ties, cavity wall, 3/16" dia, 12" long, Z-type, galv	EA	0.59	
04160 0999	Rectangular type			
1000	Wall ties, cavity wall, 1/4" dia, 2" x 6", galv, rect type	EA	0.70	
1010	Wall ties, cavity wall, 1/4" dia, 2" x 8", galv, rect type	EA	0.95	
1020	Wall ties, cavity wall, 1/4" dia, 2" x 10", galv, rect type	EA	0.93	
1030	Wall ties, cavity wall, 1/4" dia, 2" x 12", galv, rect type	EA	1.00	
1050	Wall ties, cavity wall, 1/4" dia, 2" x 8" or 4"x6", galv,	EA	0.74	
1060	Wall ties, cavity wall, 1/4" dia, 4" x 8", galv, rect type	EA	0.93	
1070	Wall ties, cavity wall, 1/4" dia, 4" x 10", galv, rect type	EA	1.00	
1080	Wall ties, cavity wall, 1/4" dia, 4" x 12", galv, rect type	EA	1.03	
1100	Wall ties, cavity wall, 3/16" dia, 2" x 6", galv, rect type	EA	0.44	
1110	Wall ties, cavity wall, 3/16" dia, 2" x 8", galv, rect type	EA	0.66	
1120	Wall ties, cavity wall, 3/16" dia, 2" x 10", galv, rect type	EA	0.70	
1130	Wall ties, cavity wall, 3/16" dia, 2" x 12", galv, rect type	EA	0.73	
1150	Wall ties, cavity wall, 3/16" dia, 2" x 8" or 4"x6", galv,	EA	0.51	
1160	Wall ties, cavity wall, 3/16" dia, 4" x 8", galv, rect type	EA	0.70	
1170	Wall ties, cavity wall, 3/16" dia, 4" x 10", galv, rect type	EA	0.73	
1180	Wall ties, cavity wall, 3/16" dia, 4" x 12", galv, rect type	EA	0.76	
04160 1200	Mesh wall tie			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1400	Wall ties, 1/2" mesh, galv, 16 ga, 12" L, 3" W	EA	1.20	
1442	Wall ties, 1/2" mesh, galv, 16 ga, 16" L, 3" W	EA	1.70	
1444	Wall ties, 1/2" mesh, galv, 16 ga, 20" L, 3" W	EA	1.96	
1446	Wall ties, 1/2" mesh, galv, 16 ga, 24" L, 3" W	EA	2.14	
04161 1000	Epoxy Grouting			
1001	Epoxy Grout, Patching	SF	2.93	
1002	Epoxy Bonding Agent	CF	69.98	
04162 0009	Vent box			
0010	Vent box, extruded aluminum 4" deep, 2-3/8" x 8-1/8"	EA	58.85	2.04
0600	Vent box, for cast aluminum add		6.07	
0050	Vent box, extruded aluminum 4" deep, 5" x 8-1/8"	EA	90.06	2.91
0600	Vent box, for cast aluminum add		9.62	
0120	Vent box, extruded aluminum 4" deep, 2.5" x 16"	EA	148.74	4.21
0600	Vent box, for cast aluminum add		16.66	
0175	Vent box, extruded aluminum 4" deep, 5" x 24"	EA	135.35	2.82
0600	Vent box, for cast aluminum add		14.89	
0250	Vent box, extruded aluminum 4" deep, 7.75" x 16.5"	EA	141.83	3.10
0600	Vent box, for cast aluminum add		15.53	
0275	Vent box, extruded aluminum 4" deep, 8" x 24"	EA	136.47	2.69
0600	Vent box, for cast aluminum add		14.89	
04170 3000	Dovetail Anchors			
3001	24Ga Galv Dovetail Anchor Slot (Steel Anchor, Filled)	LF	1.16	
3002	20Ga Galv Dovetail Anchor Slot (Steel Anchor, Filled)	LF	1.48	
3011	16 Ga x 3-1/2" Dovetail Anchor	EA	0.52	
3012	16 Ga x 5-1/2" Dovetail Anchor	EA	0.57	
3013	12 Ga x 3-1/2" Dovetail Anchor	EA	0.63	
3014	12 Ga x 5-1/2" Dovetail Anchor	EA	0.70	
04170 4010	Corrugated, 3-1/2 In (89M) Long			
4011	16Gax3-1/2" (89mm) Corr Brick Anch	EA	0.67	
4012	12Gax3-1/2" (89mm) Corr Brick Anch	EA	0.78	
04170 4030	Cavity Wall Anchors Corrugated, Galvanized 5 In (127M) Long			
4031	16Ga x 5" (127mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	0.83	
4032	12Ga x 5" (127mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	1.16	
04170 4040	Cavity Wall Anchors - Corrugated 7 In Long Galv.			
4041	28Ga x 7" (178mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	0.36	
4042	24Ga x 7" (178mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	0.36	
4043	22Ga x 7" (178mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	0.37	
4044	16Ga x 7" (178mm) Cavity Wall Anch (Galvanized and Corrugated)	EA	0.54	
4051	16Ga x 3"x 8" Mesh Tie	EA	1.19	
04171	Preassembled Masonry Panels			
04171 1000	Preassembled Masonry Panels			
1010	Preassembled Masonry Panels-Max -Incl Brick, Epoxy Mortar, & Hoist		22.62	
04180	Control Joints			
04180 1000	Rubber Or Polyvinyl Chloride Control Joints			
04190	Scaffolding - Tubular Steel			
Note: Costs Based On One Use Per Month. For Use With Unit Masonry Construction Only. Height Shown In Line Items Are For Height Of Work. Costs Include Assembly And Disassembly Of Scaffolding.				
04190 8000	Basic Materials JOC			
NOTE: Scaffolds Based On Monthly Rental, Each Item Includes Rental For One Month				
8001	Ext Bldg Scaffold, 1 to 5 Story Tubular Steel, Based on 1 Month	CSF	91.74	
8002	Ext Bldg Scaffold, 6 to 12 Story Tubular Steel, Based on 1 Month	CSF	94.67	
8003	Int Scaffold Wall, 0' -16' (4.9M) Tubular Steel, Based on 1 Month	CSF	86.51	
8004	Int Scaf Wall, 16' (4.9M) -30' (9.1M) Tubular Steel, Based on 1 Month	CSF	76.50	
8005	Int Bldg Scaf Work, 0' -30' (9.1M) Tubular Steel, Based on 1 Month	CCF	10.28	
8006	Int Bldg Scaf Work, Over30' (9.1M) Tubular Steel, Based on 1 Month	CCF	12.32	
04200	Unit Masonry			
04210	Brick Masonry			
Note: All Brick Prices Include Brick And Mortar. Wall Ties, Reinforcing, Scaffolding, Etc. Are Priced Separately				
04210 0009	Coping			
0040	Coping, for 12" wall, 6" wide (stock units), precast conc	LF	20.01	1.88

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0050	Coping, precast conc 10" wide, 4" tapers to 3.5", 8" wall	LF	19.68	1.08
0110	Coping, precast conc 14" wide, 4" tapers to 3.5", 14" wall	LF	19.89	0.88

04220 Concrete Unit Masonry

Note: All CMU Includes Block And Mortar. Horizontal And Vertical Reinf. Not Included. See Csi 04150

04220 2000 Foundation Wall Block - Nrc, Sand Aggregate, 8 In X 16 In

2005	Fdn Wall CMU, 8"x16"x6" (15cm)Sol (Sand Aggregate)	SF	4.89	
9022	Two Stories Thru Four Add		0.47	
9023	Five Thru Six Stories Add		0.63	
2006	Fdn Wall CMU, 8"x16"x8" (21cm)Sol (Sand Aggregate)	SF	5.48	
9022	Two Stories Thru Four Add		0.51	
9023	Five Thru Six Stories Add		0.69	
2007	Fdn Wall CMU, 8"x16"x10" (25cm)Sol (Sand Aggregate)	SF	6.32	
9022	Two Stories Thru Four Add		0.57	
9023	Five Thru Six Stories Add		0.76	
2008	Fdn Wall CMU, 8"x16"x12" (31cm)Sol (Sand Aggregate)	SF	7.60	
9022	Two Stories Thru Four Add		0.73	
9023	Five Thru Six Stories Add		0.98	

04220 7000 Solar Screen CMU

7001	6"x6"x4" (10cm)Solar Screen CMU	SF	11.05	
9022	Two Stories Thru Four Add		1.03	
9023	Five Thru Six Stories Add		1.37	
7002	8"x8"x4" (10cm)Solar Screen CMU	SF	9.72	
9022	Two Stories Thru Four Add		0.69	
9023	Five Thru Six Stories Add		0.91	
7003	12"x12"x4" (10cm)Solar Screen CMU	SF	7.44	
9022	Two Stories Thru Four Add		0.62	
9023	Five Thru Six Stories Add		0.82	
7004	8"x16"x8" (21cm)Solar Screen CMU	SF	7.03	
9022	Two Stories Thru Four Add		0.56	
9023	Five Thru Six Stories Add		0.75	

04225 0010 Brick Walls, brick including mortar

1100	Walls, face brick, 6.75/SF, 4" thick, red, running bond	SF	8.76	
4610	Walls, brick, for full header every 6th course, add		0.21	
4615	Walls, brick, for English, full header every 2nd course, add		0.42	
4620	Walls, brick, for Flemish, alternate header every course, add		0.63	
4625	Walls, brick, for curved walls, add		1.58	
4630	Walls, brick, for interior veneer construction, add		0.79	
4635	Walls, brick, for stacked bond, add		0.53	
4640	Walls, brick, for battered walls, add		1.58	
4645	Walls, brick, for corbels, add		3.95	
4650	Walls, brick, for colored mortar, add		0.17	
1170	Walls, face brick, 6.4/SF, 4" thick, buff, running bond	SF	10.57	
4610	Walls, brick, for full header every 6th course, add		0.22	
4615	Walls, brick, for English, full header every 2nd course, add		0.43	
4620	Walls, brick, for Flemish, alternate header every course, add		0.65	
4625	Walls, brick, for curved walls, add		1.62	
4630	Walls, brick, for interior veneer construction, add		0.81	
4635	Walls, brick, for stacked bond, add		0.54	
4640	Walls, brick, for battered walls, add		1.62	
4645	Walls, brick, for corbels, add		4.04	
4650	Walls, brick, for colored mortar, add		0.26	
1500	Walls, norman brick, 4" thick, running bond, 5.10/SF	SF	8.64	
1510	Walls, brick, for buff or gray face, add		0.75	
1515	Walls, brick, for marble chip, add		1.00	
4610	Walls, brick, for full header every 6th course, add		0.14	
4615	Walls, brick, for English, full header every 2nd course, add		0.29	
4620	Walls, brick, for Flemish, alternate header every course, add		0.43	
4625	Walls, brick, for curved walls, add		1.09	
4630	Walls, brick, for interior veneer construction, add		0.54	
4635	Walls, brick, for stacked bond, add		0.36	
4640	Walls, brick, for battered walls, add		1.09	
4645	Walls, brick, for corbels, add		2.72	
4650	Walls, brick, for colored mortar, add		0.25	
3000	Walls, common brick, 4" thick, double wythe, 13.5/SF	SF	14.67	
4610	Walls, brick, for full header every 6th course, add		0.36	
4615	Walls, brick, for English, full header every 2nd course, add		0.71	
4620	Walls, brick, for Flemish, alternate header every course, add		1.07	
4625	Walls, brick, for curved walls, add		2.68	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4630	Walls, brick, for interior veneer construction, add		1.34	
4635	Walls, brick, for stacked bond, add		0.89	
4640	Walls, brick, for battered walls, add		2.68	
4645	Walls, brick, for corbels, add		6.69	
4650	Walls, brick, for colored mortar, add		0.29	
3100	Walls, standard brick, double wythe, face, 13.5/SF	SF	16.25	
4610	Walls, brick, for full header every 6th course, add		0.37	
4615	Walls, brick, for English, full header every 2nd course, add		0.74	
4620	Walls, brick, for Flemish, alternate header every course, add		1.11	
4625	Walls, brick, for curved walls, add		2.78	
4630	Walls, brick, for interior veneer construction, add		1.39	
4635	Walls, brick, for stacked bond, add		0.93	
4640	Walls, brick, for battered walls, add		2.78	
4645	Walls, brick, for corbels, add		6.96	
4650	Walls, brick, for colored mortar, add		0.35	
4250	Walls, brick, jumbo red face (3.0/SF w/running bond), cavity	SF	6.12	
4610	Walls, brick, for full header every 6th course, add		0.10	
4615	Walls, brick, for English, full header every 2nd course, add		0.21	
4620	Walls, brick, for Flemish, alternate header every course, add		0.31	
4625	Walls, brick, for curved walls, add		0.77	
4630	Walls, brick, for interior veneer construction, add		0.39	
4635	Walls, brick, for stacked bond, add		0.26	
4640	Walls, brick, for battered walls, add		0.77	
4645	Walls, brick, for corbels, add		1.94	
4650	Walls, brick, for colored mortar, add		0.18	
4260	Walls, brick, 4" back-up (3/SF running bond), cavity, jumbo red	SF	6.12	
4610	Walls, brick, for full header every 6th course, add		0.10	
4615	Walls, brick, for English, full header every 2nd course, add		0.21	
4620	Walls, brick, for Flemish, alternate header every course, add		0.31	
4625	Walls, brick, for curved walls, add		0.77	
4630	Walls, brick, for interior veneer construction, add		0.39	
4635	Walls, brick, for stacked bond, add		0.26	
4640	Walls, brick, for battered walls, add		0.77	
4645	Walls, brick, for corbels, add		1.94	
4650	Walls, brick, for colored mortar, add		0.18	
4270	Walls, brick, 8" back-up (6/SF running bond), cavity, jumbo red	SF	12.31	
4610	Walls, brick, for full header every 6th course, add		0.21	
4615	Walls, brick, for English, full header every 2nd course, add		0.41	
4620	Walls, brick, for Flemish, alternate header every course, add		0.62	
4625	Walls, brick, for curved walls, add		1.55	
4630	Walls, brick, for interior veneer construction, add		0.77	
4635	Walls, brick, for stacked bond, add		0.52	
4640	Walls, brick, for battered walls, add		1.55	
4645	Walls, brick, for corbels, add		3.86	
4650	Walls, brick, for colored mortar, add		0.36	
4280	Walls, brick, 12" firewall (9/SF running bond), cavity, jumbo red	SF	18.55	
4610	Walls, brick, for full header every 6th course, add		0.31	
4615	Walls, brick, for English, full header every 2nd course, add		0.62	
4620	Walls, brick, for Flemish, alternate header every course, add		0.93	
4625	Walls, brick, for curved walls, add		2.32	
4630	Walls, brick, for interior veneer construction, add		1.16	
4635	Walls, brick, for stacked bond, add		0.77	
4640	Walls, brick, for battered walls, add		2.32	
4645	Walls, brick, for corbels, add		5.80	
4650	Walls, brick, for colored mortar, add		0.54	
4290	Walls, brick, 16" firewall (12/SF running bond), cavity, jumbo red	SF	23.89	
4610	Walls, brick, for full header every 6th course, add		0.37	
4615	Walls, brick, for English, full header every 2nd course, add		0.74	
4620	Walls, brick, for Flemish, alternate header every course, add		1.11	
4625	Walls, brick, for curved walls, add		2.78	
4630	Walls, brick, for interior veneer construction, add		1.39	
4635	Walls, brick, for stacked bond, add		0.93	
4640	Walls, brick, for battered walls, add		2.78	
4645	Walls, brick, for corbels, add		6.96	
4650	Walls, brick, for colored mortar, add		0.73	
04227 0010	Walls, brick, common including mortar			
0800	Walls, 4" x 2-2/3"x8", 4" wall, as face brick, brick, common	SF	8.88	
1100	Walls, brick, for full header every 6th course, add		0.22	
1105	Walls, brick, for English, full header every 2nd course, add		0.43	
1110	Walls, brick, for Flemish, alternate header every course, add		0.65	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1115	Walls, brick, for curved walls, add		1.62	
1120	Walls, brick, for interior veneer construction, add		0.81	
1125	Walls, brick, for stacked bond, add		0.54	
1130	Walls, brick, for battered walls, add		1.62	
1135	Walls, brick, for corbels, add		4.04	
1140	Walls, brick, for colored mortar, add		0.17	
0850	Walls, 6.75/SF, 4" x 2-2/3"x8", 4" wall, as back up, brick,	SF	7.71	
1100	Walls, brick, for full header every 6th course, add		0.19	
1105	Walls, brick, for English, full header every 2nd course, add		0.39	
1110	Walls, brick, for Flemish, alternate header every course, add		0.58	
1115	Walls, brick, for curved walls, add		1.45	
1120	Walls, brick, for interior veneer construction, add		0.72	
1125	Walls, brick, for stacked bond, add		0.48	
1130	Walls, brick, for battered walls, add		1.45	
1135	Walls, brick, for corbels, add		3.62	
1140	Walls, brick, for colored mortar, add		0.14	
0900	Walls, 13.5/SF, 4" x 2-2/3"x8", 8" wall, brick, common	SF	14.47	
1100	Walls, brick, for full header every 6th course, add		0.34	
1105	Walls, brick, for English, full header every 2nd course, add		0.69	
1110	Walls, brick, for Flemish, alternate header every course, add		1.03	
1115	Walls, brick, for curved walls, add		2.58	
1120	Walls, brick, for interior veneer construction, add		1.29	
1125	Walls, brick, for stacked bond, add		0.86	
1130	Walls, brick, for battered walls, add		2.58	
1135	Walls, brick, for corbels, add		6.44	
1140	Walls, brick, for colored mortar, add		0.29	
1000	Walls, 20.25/SF, 4" x 2-2/3"x8", 12" wall, brick, common	SF	21.05	
1100	Walls, brick, for full header every 6th course, add		0.49	
1105	Walls, brick, for English, full header every 2nd course, add		0.98	
1110	Walls, brick, for Flemish, alternate header every course, add		1.47	
1115	Walls, brick, for curved walls, add		3.66	
1120	Walls, brick, for interior veneer construction, add		1.83	
1125	Walls, brick, for stacked bond, add		1.22	
1130	Walls, brick, for battered walls, add		3.66	
1135	Walls, brick, for corbels, add		9.16	
1140	Walls, brick, for colored mortar, add		0.44	
1050	Walls, 27/SF, 4" x 2-2/3"x8", 16" wall, brick, common	SF	27.38	
1100	Walls, brick, for full header every 6th course, add		0.62	
1105	Walls, brick, for English, full header every 2nd course, add		1.24	
1110	Walls, brick, for Flemish, alternate header every course, add		1.86	
1115	Walls, brick, for curved walls, add		4.64	
1120	Walls, brick, for interior veneer construction, add		2.32	
1125	Walls, brick, for stacked bond, add		1.55	
1130	Walls, brick, for battered walls, add		4.64	
1135	Walls, brick, for corbels, add		11.60	
1140	Walls, brick, for colored mortar, add		0.60	
04231 0009	Window sill			
0010	Window sill, bluestone, thermal top, 10" wide, 1.5" thick	LF	22.61	0.88
0600	Window sill, precast conc, 9" wide, 4" tapers to 3", 8" wall	LF	19.15	0.88
0620	Window sill, precast conc, 6" wide	LF	18.81	0.88
0650	Window sill, precast conc, 11" wide	LF	19.34	0.88
0720	Window sill, precast conc, 14" wide	LF	24.19	0.88

04232 Concrete Unit Masonry

Note: All CMU Includes Block And Mortar. Horizontal And Vertical Reinf. Not Included. See Csi 04150

04234 0010 Concrete block, back-up, no scaffolding

0050	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 2" thk	SF	3.51	
0455	Concrete block, back-up, for special color, add		0.14	
0460	Concrete block, back-up, for stacked bond, add		0.63	
0465	Concrete block, back-up, for scored block, add		0.11	
0470	Concrete block, back-up, for bullnose block, add		0.11	
0475	Concrete block, back-up, two stories thru four, add		0.37	
0480	Concrete block, back-up, five thru six stories, add		0.49	
0200	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 4" thk	SF	3.63	
0455	Concrete block, back-up, for special color, add		0.13	
0460	Concrete block, back-up, for stacked bond, add		0.69	
0465	Concrete block, back-up, for scored block, add		0.10	
0470	Concrete block, back-up, for bullnose block, add		0.10	
0475	Concrete block, back-up, two stories thru four, add		0.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0480	Concrete block, back-up, five thru six stories, add		0.53	
0300	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 6" thk	SF	3.95	
0455	Concrete block, back-up, for special color, add		0.15	
0460	Concrete block, back-up, for stacked bond, add		0.72	
0465	Concrete block, back-up, for scored block, add		0.12	
0470	Concrete block, back-up, for bullnose block, add		0.12	
0475	Concrete block, back-up, two stories thru four, add		0.41	
0480	Concrete block, back-up, five thru six stories, add		0.55	
0350	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 8" thk	SF	4.27	
0455	Concrete block, back-up, for special color, add		0.18	
0460	Concrete block, back-up, for stacked bond, add		0.75	
0465	Concrete block, back-up, for scored block, add		0.14	
0470	Concrete block, back-up, for bullnose block, add		0.14	
0475	Concrete block, back-up, two stories thru four, add		0.44	
0480	Concrete block, back-up, five thru six stories, add		0.58	
0400	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 10" thk	SF	4.90	
0455	Concrete block, back-up, for special color, add		0.25	
0460	Concrete block, back-up, for stacked bond, add		0.77	
0465	Concrete block, back-up, for scored block, add		0.19	
0470	Concrete block, back-up, for bullnose block, add		0.19	
0475	Concrete block, back-up, two stories thru four, add		0.45	
0480	Concrete block, back-up, five thru six stories, add		0.59	
0450	Conc blk back-up, 2000 PSI, no scaf, no reinf, 8" x 16", 12" thk	SF	5.72	
0455	Concrete block, back-up, for special color, add		0.26	
0460	Concrete block, back-up, for stacked bond, add		0.96	
0465	Concrete block, back-up, for scored block, add		0.20	
0470	Concrete block, back-up, for bullnose block, add		0.20	
0475	Concrete block, back-up, two stories thru four, add		0.56	
0480	Concrete block, back-up, five thru six stories, add		0.74	
04235 0010 Concrete block, decorative, no scaffolding/reinf				
04235 2500 Ground face				
2600	Conc blk decorative, 8" x 16" x 4" thk, no scaf/reinf, ground	SF	8.74	
8500	Concrete block, decorative, for stacked bond, add		0.87	
8560	Concrete block, decorative, two stories thru four, add		0.50	
8570	Concrete block, decorative, five thru six stories, add		0.67	
8600	Concrete block, decorative, for scored block, add		0.54	
8750	Concrete block, decorative, for bullnose block, add		0.54	
2650	Conc blk decorative, 8" x 16" x 6" thk, no scaf/reinf, ground	SF	9.54	
8500	Concrete block, decorative, for stacked bond, add		0.97	
8560	Concrete block, decorative, two stories thru four, add		0.56	
8570	Concrete block, decorative, five thru six stories, add		0.75	
8600	Concrete block, decorative, for scored block, add		0.58	
8750	Concrete block, decorative, for bullnose block, add		0.58	
2700	Conc blk decorative, 8" x 16" x 8" thk, no scaf/reinf, ground	SF	10.04	
8500	Concrete block, decorative, for stacked bond, add		1.04	
8560	Concrete block, decorative, two stories thru four, add		0.60	
8570	Concrete block, decorative, five thru six stories, add		0.80	
8600	Concrete block, decorative, for scored block, add		0.60	
8750	Concrete block, decorative, for bullnose block, add		0.60	
2725	Conc blk decorative, 8" x 16" x 10" thk, no scaf/reinf, ground	SF	11.15	
8500	Concrete block, decorative, for stacked bond, add		1.21	
8560	Concrete block, decorative, two stories thru four, add		0.70	
8570	Concrete block, decorative, five thru six stories, add		0.93	
8600	Concrete block, decorative, for scored block, add		0.65	
8750	Concrete block, decorative, for bullnose block, add		0.65	
2750	Conc blk decorative, 8" x 16" x 12" thk, no scaf/reinf, ground	SF	12.04	
8500	Concrete block, decorative, for stacked bond, add		1.34	
8560	Concrete block, decorative, two stories thru four, add		0.77	
8570	Concrete block, decorative, five thru six stories, add		1.03	
8600	Concrete block, decorative, for scored block, add		0.69	
8750	Concrete block, decorative, for bullnose block, add		0.69	
04235 5000 Split rib profile				
5100	Conc blk decorative, 8" x 16" x 4", 1" split rib, 8 ribs, no	SF	5.13	
8500	Concrete block, decorative, for stacked bond, add		0.87	
8560	Concrete block, decorative, two stories thru four, add		0.50	
8570	Concrete block, decorative, five thru six stories, add		0.67	
8600	Concrete block, decorative, for scored block, add		0.18	
8750	Concrete block, decorative, for bullnose block, add		0.18	
8800	Concrete block, decorative, for special color, add		0.23	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5150	Conc blk decorative, 8" x 16" x 6", 1" split rib, 8 ribs, no	SF	5.59	
8500	Concrete block, decorative, for stacked bond, add		0.93	
8560	Concrete block, decorative, two stories thru four, add		0.54	
8570	Concrete block, decorative, five thru six stories, add		0.71	
8600	Concrete block, decorative, for scored block, add		0.20	
8750	Concrete block, decorative, for bullnose block, add		0.20	
8800	Concrete block, decorative, for special color, add		0.26	
5200	Conc blk decorative, 8" x 16" x 8", 1" split rib, 8 ribs, no	SF	6.19	
8500	Concrete block, decorative, for stacked bond, add		0.99	
8560	Concrete block, decorative, two stories thru four, add		0.57	
8570	Concrete block, decorative, five thru six stories, add		0.76	
8600	Concrete block, decorative, for scored block, add		0.24	
8750	Concrete block, decorative, for bullnose block, add		0.24	
8800	Concrete block, decorative, for special color, add		0.31	
5225	Conc blk decorative, 8" x 16" x 10", 1" split rib, 8 ribs, no	SF	8.95	
8500	Concrete block, decorative, for stacked bond, add		1.01	
8560	Concrete block, decorative, two stories thru four, add		0.58	
8570	Concrete block, decorative, five thru six stories, add		0.77	
8600	Concrete block, decorative, for scored block, add		0.51	
8750	Concrete block, decorative, for bullnose block, add		0.51	
8800	Concrete block, decorative, for special color, add		0.66	
5250	Conc blk decorative, 8" x 16" x 12", 1" split rib, 8 ribs, no	SF	7.95	
8500	Concrete block, decorative, for stacked bond, add		1.29	
8560	Concrete block, decorative, two stories thru four, add		0.75	
8570	Concrete block, decorative, five thru six stories, add		0.99	
8600	Concrete block, decorative, for scored block, add		0.30	
8750	Concrete block, decorative, for bullnose block, add		0.30	
8800	Concrete block, decorative, for special color, add		0.39	
04235 6000 Split face or scored split face				
6100	Conc blk decorative, 8" x 16" x 4", no scaf/reinf, split/scored	SF	5.67	
8500	Concrete block, decorative, for stacked bond, add		0.86	
8560	Concrete block, decorative, two stories thru four, add		0.50	
8570	Concrete block, decorative, five thru six stories, add		0.66	
8600	Concrete block, decorative, for scored block, add		0.24	
8750	Concrete block, decorative, for bullnose block, add		0.24	
8800	Concrete block, decorative, for special color, add		0.31	
6150	Conc blk decorative, 8" x 16" x 6", no scaf/reinf, split/scored	SF	6.73	
8500	Concrete block, decorative, for stacked bond, add		0.96	
8560	Concrete block, decorative, two stories thru four, add		0.55	
8570	Concrete block, decorative, five thru six stories, add		0.74	
8600	Concrete block, decorative, for scored block, add		0.31	
8750	Concrete block, decorative, for bullnose block, add		0.31	
8800	Concrete block, decorative, for special color, add		0.40	
6200	Conc blk decorative, 8" x 16" x 8", no scaf/reinf, split/scored	SF	7.42	
8500	Concrete block, decorative, for stacked bond, add		1.02	
8560	Concrete block, decorative, two stories thru four, add		0.59	
8570	Concrete block, decorative, five thru six stories, add		0.79	
8600	Concrete block, decorative, for scored block, add		0.35	
8750	Concrete block, decorative, for bullnose block, add		0.35	
8800	Concrete block, decorative, for special color, add		0.45	
6225	Conc blk decorative, 8" x 16" x 10", no scaf/reinf, split/scored	SF	8.72	
8500	Concrete block, decorative, for stacked bond, add		1.21	
8560	Concrete block, decorative, two stories thru four, add		0.70	
8570	Concrete block, decorative, five thru six stories, add		0.93	
8600	Concrete block, decorative, for scored block, add		0.41	
8750	Concrete block, decorative, for bullnose block, add		0.41	
8800	Concrete block, decorative, for special color, add		0.53	
6250	Conc blk decorative, 8" x 16" x 12", no scaf/reinf, split/scored	SF	9.73	
8500	Concrete block, decorative, for stacked bond, add		1.32	
8560	Concrete block, decorative, two stories thru four, add		0.76	
8570	Concrete block, decorative, five thru six stories, add		1.01	
8600	Concrete block, decorative, for scored block, add		0.47	
8750	Concrete block, decorative, for bullnose block, add		0.47	
8800	Concrete block, decorative, for special color, add		0.61	
04235 8000 Hexagonal face profile				
8100	Conc blk decorative, 8" x 16", 4" thk, hollow, no scaf/reinf,	SF	6.06	
8500	Concrete block, decorative, for stacked bond, add		0.87	
8560	Concrete block, decorative, two stories thru four, add		0.50	
8570	Concrete block, decorative, five thru six stories, add		0.67	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8600	Concrete block, decorative, for scored block, add		0.27	
8750	Concrete block, decorative, for bullnose block, add		0.27	
8800	Concrete block, decorative, for special color, add		0.35	
8200	Conc blk decorative, 8" x 16", 4" thk, solid, no scaf/reinf,	SF	7.25	
8500	Concrete block, decorative, for stacked bond, add		0.87	
8560	Concrete block, decorative, two stories thru four, add		0.50	
8570	Concrete block, decorative, five thru six stories, add		0.67	
8600	Concrete block, decorative, for scored block, add		0.39	
8750	Concrete block, decorative, for bullnose block, add		0.39	
8800	Concrete block, decorative, for special color, add		0.51	
04237 0010	Concrete block, partitions, no scaffolding			
04237 0100	Acoustical slotted block			
0200	Conc blk ptn, no scaf, NRC .50, type A, 4" thk, acoust slotted	SF	6.91	
0450	Conc blk ptn, acoust slotted, for special color, add		0.32	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		0.96	
0205	Conc blk ptn, no scaf, NRC .65-.75, filled, 4" thk, acoust	SF	7.71	
0450	Conc blk ptn, acoust slotted, for special color, add		0.41	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		0.94	
0250	Conc blk ptn, no scaf, NRC .50 type A, 6" thk, acoust slotted	SF	7.85	
0450	Conc blk ptn, acoust slotted, for special color, add		0.39	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		1.04	
0410	Conc blk ptn, no scaf, NRC .55 type Q, 8" thk, acoust slotted	SF	9.62	
0450	Conc blk ptn, acoust slotted, for special color, add		0.52	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		1.14	
0420	Conc blk ptn, no scaf, NRC .50-.60, filled, 8" thk, acoust	SF	10.81	
0450	Conc blk ptn, acoust slotted, for special color, add		0.64	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		1.14	
0430	Conc blk ptn, no scaf, NRC .60-.75, filled, 8" thk, acoust	SF	12.09	
0450	Conc blk ptn, acoust slotted, for special color, add		0.77	
0460	Conc blk ptn, acoust slotted, for stacked bond, add		1.14	
04237 1000	Lightweight block			
04237 1099	Hollow, not reinforced			
1100	Conc blk ptn, no scaf, lt wt, no reinf, 8" x 16" x 4" thk	SF	3.77	
5700	Conc blk ptn, for special color, add		0.15	
5705	Conc blk ptn, for stacked bond, add		0.69	
5710	Conc blk ptn, for scored block, add		0.11	
5715	Conc blk ptn, for bullnose block, add		0.11	
5720	Conc blk ptn, two stories thru four, add		0.40	
5725	Conc blk ptn, five thru six stories, add		0.53	
1150	Conc blk ptn, no scaf/reinf, 8" x 16" x 6" thk, lt wt, hollow	SF	4.29	
5700	Conc blk ptn, for special color, add		0.19	
5705	Conc blk ptn, for stacked bond, add		0.74	
5710	Conc blk ptn, for scored block, add		0.15	
5715	Conc blk ptn, for bullnose block, add		0.15	
5720	Conc blk ptn, two stories thru four, add		0.42	
5725	Conc blk ptn, five thru six stories, add		0.57	
1200	Conc blk ptn, no scaf/reinf, 8" x 16" x 8" thk, lt wt, hollow	SF	4.83	
5700	Conc blk ptn, for special color, add		0.24	
5705	Conc blk ptn, for stacked bond, add		0.78	
5710	Conc blk ptn, for scored block, add		0.18	
5715	Conc blk ptn, for bullnose block, add		0.18	
5720	Conc blk ptn, two stories thru four, add		0.45	
5725	Conc blk ptn, five thru six stories, add		0.60	
1250	Conc blk ptn, no scaf/reinf, 8" x 16" x 10" thk, lt wt, hollow	SF	5.62	
5700	Conc blk ptn, for special color, add		0.32	
5705	Conc blk ptn, for stacked bond, add		0.81	
5710	Conc blk ptn, for scored block, add		0.25	
5715	Conc blk ptn, for bullnose block, add		0.25	
5720	Conc blk ptn, two stories thru four, add		0.47	
5725	Conc blk ptn, five thru six stories, add		0.63	
1300	Conc blk ptn, no scaf/reinf, 8" x 16" x 12" thk, lt wt, hollow	SF	6.72	
5700	Conc blk ptn, for special color, add		0.37	
5705	Conc blk ptn, for stacked bond, add		1.02	
5710	Conc blk ptn, for scored block, add		0.28	
5715	Conc blk ptn, for bullnose block, add		0.28	
5720	Conc blk ptn, two stories thru four, add		0.59	
5725	Conc blk ptn, five thru six stories, add		0.78	
04237 2799	Solid, not reinforced			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2800	Conc blk ptn, no scaf/reinf, 8" x 16" x 2" thk, lt wt, solid	SF	4.00	
5700	Conc blk ptn, for special color, add		0.18	
5705	Conc blk ptn, for stacked bond, add		0.69	
5710	Conc blk ptn, for scored block, add		0.14	
5715	Conc blk ptn, for bullnose block, add		0.14	
5720	Conc blk ptn, two stories thru four, add		0.40	
5725	Conc blk ptn, five thru six stories, add		0.53	
2900	Conc blk ptn, no scaf/reinf, 8" x 16" x 4" thk, lt wt, solid	SF	4.36	
5700	Conc blk ptn, for special color, add		0.21	
5705	Conc blk ptn, for stacked bond, add		0.72	
5710	Conc blk ptn, for scored block, add		0.16	
5715	Conc blk ptn, for bullnose block, add		0.16	
5720	Conc blk ptn, two stories thru four, add		0.41	
5725	Conc blk ptn, five thru six stories, add		0.55	
2950	Conc blk ptn, no scaf/reinf, 8" x 16" x 6" thk, lt wt, solid	SF	5.36	
5700	Conc blk ptn, for special color, add		0.31	
5705	Conc blk ptn, for stacked bond, add		0.77	
5710	Conc blk ptn, for scored block, add		0.24	
5715	Conc blk ptn, for bullnose block, add		0.24	
5720	Conc blk ptn, two stories thru four, add		0.45	
5725	Conc blk ptn, five thru six stories, add		0.59	
3000	Conc blk ptn, no scaf/reinf, 8" x 16" x 8" thk, lt wt, solid	SF	5.96	
5700	Conc blk ptn, for special color, add		0.36	
5705	Conc blk ptn, for stacked bond, add		0.83	
5710	Conc blk ptn, for scored block, add		0.28	
5715	Conc blk ptn, for bullnose block, add		0.28	
5720	Conc blk ptn, two stories thru four, add		0.48	
5725	Conc blk ptn, five thru six stories, add		0.64	
3050	Conc blk ptn, no scaf/reinf, 8" x 16" x 10" thk, lt wt, solid	SF	7.27	
5700	Conc blk ptn, for special color, add		0.51	
5705	Conc blk ptn, for stacked bond, add		0.86	
5710	Conc blk ptn, for scored block, add		0.40	
5715	Conc blk ptn, for bullnose block, add		0.40	
5720	Conc blk ptn, two stories thru four, add		0.50	
5725	Conc blk ptn, five thru six stories, add		0.66	
3100	Conc blk ptn, no scaf/reinf, 8" x 16" x 12" thk, lt wt, solid	SF	8.35	
5700	Conc blk ptn, for special color, add		0.55	
5705	Conc blk ptn, for stacked bond, add		1.08	
5710	Conc blk ptn, for scored block, add		0.42	
5715	Conc blk ptn, for bullnose block, add		0.42	
5720	Conc blk ptn, two stories thru four, add		0.62	
5725	Conc blk ptn, five thru six stories, add		0.83	
04237 4000	Regular block			
04237 4099	Hollow, not reinforced			
4100	Conc blk ptn, no scaf/reinf, 8" x 16" x 4" thk, rglr, hollow	SF	3.69	
5700	Conc blk ptn, for special color, add		0.13	
5705	Conc blk ptn, for stacked bond, add		0.70	
5710	Conc blk ptn, for scored block, add		0.10	
5715	Conc blk ptn, for bullnose block, add		0.10	
5720	Conc blk ptn, two stories thru four, add		0.41	
5725	Conc blk ptn, five thru six stories, add		0.54	
4150	Conc blk ptn, no scaf/reinf, 8" x 16" x 6" thk, rglr, hollow	SF	4.16	
5700	Conc blk ptn, for special color, add		0.16	
5705	Conc blk ptn, for stacked bond, add		0.75	
5710	Conc blk ptn, for scored block, add		0.13	
5715	Conc blk ptn, for bullnose block, add		0.13	
5720	Conc blk ptn, two stories thru four, add		0.44	
5725	Conc blk ptn, five thru six stories, add		0.58	
4200	Conc blk ptn, no scaf/reinf, 8" x 16" x 8" thk, rglr, hollow	SF	4.91	
5700	Conc blk ptn, for special color, add		0.24	
5705	Conc blk ptn, for stacked bond, add		0.80	
5710	Conc blk ptn, for scored block, add		0.18	
5715	Conc blk ptn, for bullnose block, add		0.18	
5720	Conc blk ptn, two stories thru four, add		0.46	
5725	Conc blk ptn, five thru six stories, add		0.62	
4250	Conc blk ptn, no scaf/reinf, 8" x 16" x 10" thk, rglr, hollow	SF	5.52	
5700	Conc blk ptn, for special color, add		0.30	
5705	Conc blk ptn, for stacked bond, add		0.84	
5710	Conc blk ptn, for scored block, add		0.23	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5715	Conc blk ptn, for bullnose block, add		0.23	
5720	Conc blk ptn, two stories thru four, add		0.48	
5725	Conc blk ptn, five thru six stories, add		0.64	
4300	Conc blk ptn, no scaf/reinf, 8" x 16" x 12" thk, rglr, hollow	SF	6.58	
5700	Conc blk ptn, for special color, add		0.33	
5705	Conc blk ptn, for stacked bond, add		1.05	
5710	Conc blk ptn, for scored block, add		0.26	
5715	Conc blk ptn, for bullnose block, add		0.26	
5720	Conc blk ptn, two stories thru four, add		0.60	
5725	Conc blk ptn, five thru six stories, add		0.80	
04237 4899	Solid, not reinforced			
4900	Conc blk ptn, no scaf/reinf, 8" x 16" x 2" thk, rglr, solid	SF	3.97	
5700	Conc blk ptn, for special color, add		0.17	
5705	Conc blk ptn, for stacked bond, add		0.69	
5710	Conc blk ptn, for scored block, add		0.13	
5715	Conc blk ptn, for bullnose block, add		0.13	
5720	Conc blk ptn, two stories thru four, add		0.40	
5725	Conc blk ptn, five thru six stories, add		0.53	
5050	Conc blk ptn, no scaf/reinf, 8" x 16" x 4" thk, rglr, solid	SF	4.34	
5700	Conc blk ptn, for special color, add		0.20	
5705	Conc blk ptn, for stacked bond, add		0.73	
5710	Conc blk ptn, for scored block, add		0.16	
5715	Conc blk ptn, for bullnose block, add		0.16	
5720	Conc blk ptn, two stories thru four, add		0.42	
5725	Conc blk ptn, five thru six stories, add		0.56	
5100	Conc blk ptn, no scaf/reinf, 8" x 16" x 6" thk, rglr, solid	SF	5.17	
5700	Conc blk ptn, for special color, add		0.28	
5705	Conc blk ptn, for stacked bond, add		0.78	
5710	Conc blk ptn, for scored block, add		0.22	
5715	Conc blk ptn, for bullnose block, add		0.22	
5720	Conc blk ptn, two stories thru four, add		0.45	
5725	Conc blk ptn, five thru six stories, add		0.60	
5150	Conc blk ptn, no scaf/reinf, 8" x 16" x 8" thk, rglr, solid	SF	5.88	
5700	Conc blk ptn, for special color, add		0.35	
5705	Conc blk ptn, for stacked bond, add		0.84	
5710	Conc blk ptn, for scored block, add		0.27	
5715	Conc blk ptn, for bullnose block, add		0.27	
5720	Conc blk ptn, two stories thru four, add		0.48	
5725	Conc blk ptn, five thru six stories, add		0.64	
5175	Conc blk ptn, no scaf/reinf, 8" x 16" x 10" thk, rglr, solid	SF	6.20	
5700	Conc blk ptn, for special color, add		0.36	
5705	Conc blk ptn, for stacked bond, add		0.89	
5710	Conc blk ptn, for scored block, add		0.28	
5715	Conc blk ptn, for bullnose block, add		0.28	
5720	Conc blk ptn, two stories thru four, add		0.51	
5725	Conc blk ptn, five thru six stories, add		0.68	
5200	Conc blk ptn, no scaf/reinf, 8" x 16" x 12" thk, rglr, solid	SF	8.23	
5700	Conc blk ptn, for special color, add		0.52	
5705	Conc blk ptn, for stacked bond, add		1.09	
5710	Conc blk ptn, for scored block, add		0.40	
5715	Conc blk ptn, for bullnose block, add		0.40	
5720	Conc blk ptn, two stories thru four, add		0.63	
5725	Conc blk ptn, five thru six stories, add		0.84	
04240 0010	Glazed concrete block, no scaffolding or reinf			
Note: Not Incl. Grout Or Reinforcing				
04240 0099	Single face			
0100	Glazed conc block, 2" thk, no scaf/reinf, 8" x 16", single	SF	12.01	
1700	Glazed conc blk, for special shapes, add		8.79	
0200	Glazed conc block, 4" thk, no scaf/reinf, 8" x 16", single	SF	10.60	
1700	Glazed conc blk, for special shapes, add		7.24	
0250	Glazed conc block, 6" thk, no scaf/reinf, 8" x 16", single	SF	11.61	
1700	Glazed conc blk, for special shapes, add		8.10	
0300	Glazed conc block, 8" thk, no scaf/reinf, 8" x 16", single	SF	12.31	
1700	Glazed conc blk, for special shapes, add		8.57	
0350	Glazed conc block, 10" thk, no scaf/reinf, 8" x 16", single	SF	13.09	
1700	Glazed conc blk, for special shapes, add		9.16	
0400	Glazed conc block, 12" thk, no scaf/reinf, 8" x 16", single	SF	14.17	
1700	Glazed conc blk, for special shapes, add		9.29	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
04240 0699 Double face				
0700	Glazed conc block, 4" thk, no scaff/reinf, 8" x 16", double	SF	15.50	
1700	Glazed conc blk, for special shapes, add		11.76	
0750	Glazed conc block, 6" thk, no scaff/reinf, 8" x 16", double	SF	16.84	
1700	Glazed conc blk, for special shapes, add		12.84	
0800	Glazed conc block, 8" thk, no scaff/reinf, 8" x 16", double	SF	17.54	
1700	Glazed conc blk, for special shapes, add		13.25	
04240 1000 Hollow Clay Tile For Back-Up Or Partitions, (12 In X 12 In)				
04240 1010 Scored Face, Load Bearing				
1011	4" (10cm)Thk Clay Tile, Load Brg 12"x12"Hol , Scored Face, Back-Up	SF	7.88	
1031	For Smooth Face - One Side Add		0.52	
1032	For Smooth Face - Two Sides Add		0.88	
1700	Glazed conc blk, for special shapes, add		4.02	
1012	6" (15cm)Thk Clay Tile, Load Brg 12"x12"Hol , Scored Face, Back-Up	SF	8.58	
1031	For Smooth Face - One Side Add		0.57	
1032	For Smooth Face - Two Sides Add		0.98	
1700	Glazed conc blk, for special shapes, add		4.52	
1013	8" (21cm)Thk Clay Tile, Load Brg 12"x12"Hol , Scored Face, Back-Up	SF	9.69	
1031	For Smooth Face - One Side Add		0.67	
1032	For Smooth Face - Two Sides Add		1.14	
1700	Glazed conc blk, for special shapes, add		5.40	
1014	10" (25cm)Thk Clay Tile, Load Brg 12"x12"Hol , Scored Face, Back-Up	SF	13.53	
1031	For Smooth Face - One Side Add		1.04	
1032	For Smooth Face - Two Sides Add		1.80	
1700	Glazed conc blk, for special shapes, add		8.99	
1015	12" (31cm)Thk Clay Tile, Load Brg 12"x12"Hol , Scored Face, Back-Up	SF	18.06	
1031	For Smooth Face - One Side Add		1.46	
1032	For Smooth Face - Two Sides Add		2.55	
1700	Glazed conc blk, for special shapes, add		13.08	
04240 1020 Scored Face, Non-Load Bearing				
1021	3" (76mm)Thk Clay Tile, Non Brg 12"x12"Hol , Scored Face, Back-Up	SF	6.56	
1031	For Smooth Face - One Side Add		0.42	
1032	For Smooth Face - Two Sides Add		0.70	
1700	Glazed conc blk, for special shapes, add		3.13	
1022	4" (10cm)Thk Clay Tile, Non Brg 12"x12"Hol , Scored Face, Back-Up	SF	7.95	
1031	For Smooth Face - One Side Add		0.54	
1032	For Smooth Face - Two Sides Add		0.93	
1700	Glazed conc blk, for special shapes, add		4.36	
1023	6" (15cm)Thk Clay Tile, Non Brg 12"x12"Hol , Scored Face, Back-Up	SF	8.14	
1031	For Smooth Face - One Side Add		0.55	
1032	For Smooth Face - Two Sides Add		0.94	
1700	Glazed conc blk, for special shapes, add		4.38	
1024	8" (21cm)Thk Clay Tile, Non Brg 12"x12"Hol , Scored Face, Back-Up	SF	12.78	
1031	For Smooth Face - One Side Add		0.99	
1032	For Smooth Face - Two Sides Add		1.73	
1700	Glazed conc blk, for special shapes, add		8.72	
1025	12" (31cm)Thk Clay Tile, Non Brg 12"x12"Hol , Scored Face, Back-Up	SF	17.62	
1031	For Smooth Face - One Side Add		1.44	
1032	For Smooth Face - Two Sides Add		2.54	
1700	Glazed conc blk, for special shapes, add		13.08	
04240 1255 Corner, bullnose or square				
1256	Glazed conc block, 2" thk, no scaff, corner, bullnose or square	EA	31.02	
1700	Glazed conc blk, for special shapes, add		26.88	
1710	Glazed conc blk, two stories thru four, add		0.62	
1720	Glazed conc blk, five thru six stories, add		0.83	
1258	Glazed conc block, 4" thk, no scaff, corner, bullnose or square	EA	31.17	
1700	Glazed conc blk, for special shapes, add		26.88	
1710	Glazed conc blk, two stories thru four, add		0.64	
1720	Glazed conc blk, five thru six stories, add		0.86	
1260	Glazed conc block, 6" thk, no scaff, corner, bullnose or square	EA	31.34	
1700	Glazed conc blk, for special shapes, add		26.88	
1710	Glazed conc blk, two stories thru four, add		0.67	
1720	Glazed conc blk, five thru six stories, add		0.89	
1270	Glazed conc block, 8" thk, no scaff, corner, bullnose or square	EA	38.86	
1700	Glazed conc blk, for special shapes, add		34.22	
1710	Glazed conc blk, two stories thru four, add		0.70	
1720	Glazed conc blk, five thru six stories, add		0.93	
1280	Glazed conc block, 10" thk, no scaff, corner, bullnose or square	EA	41.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1700	Glazed conc blk, for special shapes, add		36.25	
1710	Glazed conc blk, two stories thru four, add		0.72	
1720	Glazed conc blk, five thru six stories, add		0.97	
1290	Glazed conc block, 12" thk, no scaf, corner, bullnose or square	EA	47.98	
1700	Glazed conc blk, for special shapes, add		42.94	
1710	Glazed conc blk, two stories thru four, add		0.76	
1720	Glazed conc blk, five thru six stories, add		1.01	
04240 1499 Cove base				
1500	Glazed conc block, no scaf, cove base, 8" x 16", 2" thk	LF	13.57	
1700	Glazed conc blk, for special shapes, add		9.89	
1710	Glazed conc blk, two stories thru four, add		0.55	
1720	Glazed conc blk, five thru six stories, add		0.74	
1550	Glazed conc block, no scaf, cove base, 8" x 16", 4" thk	LF	14.16	
1700	Glazed conc blk, for special shapes, add		11.09	
1710	Glazed conc blk, two stories thru four, add		0.61	
1720	Glazed conc blk, five thru six stories, add		0.81	
1600	Glazed conc block, no scaf, cove base, 8" x 16", 6" thk	LF	14.87	
1700	Glazed conc blk, for special shapes, add		11.49	
1710	Glazed conc blk, two stories thru four, add		0.66	
1720	Glazed conc blk, five thru six stories, add		0.88	
1650	Glazed conc block, no scaf, cove base, 8" x 16", 8" thk	LF	15.76	
1700	Glazed conc blk, for special shapes, add		11.03	
1710	Glazed conc blk, two stories thru four, add		0.71	
1720	Glazed conc blk, five thru six stories, add		0.95	
04245 Reinforced Unit Masonry				
04245 0010 Concrete block bond beam no scaf,grout or reinf				
04245 0099 Regular block				
0100	Concrete block bond beam 8" H, 8" thk, no scaf, no grout/reinf,	LF	3.97	
0600	Conc blk bond beam for special color, add		0.25	
0610	Conc blk bond beam for stacked bond, add		0.53	
0620	Conc blk bond beam for scored block, add		0.19	
0630	Conc blk bond beam for bullnose block, add		0.19	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		2.95	
0650	Conc blk bond beam two stories thru four, add		0.31	
0660	Conc blk bond beam five thru six stories, add		0.41	
0125	Concrete block bond beam 8" H, 6" thk, no scaf, no grout/reinf,	LF	3.98	
0600	Conc blk bond beam for special color, add		0.23	
0610	Conc blk bond beam for stacked bond, add		0.57	
0620	Conc blk bond beam for scored block, add		0.18	
0630	Conc blk bond beam for bullnose block, add		0.18	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		2.88	
0650	Conc blk bond beam two stories thru four, add		0.33	
0660	Conc blk bond beam five thru six stories, add		0.44	
0150	Concrete block bond beam 8" H, 12"thk, no scaf, no grout/reinf,	LF	5.30	
0600	Conc blk bond beam for special color, add		0.34	
0610	Conc blk bond beam for stacked bond, add		0.70	
0620	Conc blk bond beam for scored block, add		0.26	
0630	Conc blk bond beam for bullnose block, add		0.26	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		3.96	
0650	Conc blk bond beam two stories thru four, add		0.40	
0660	Conc blk bond beam five thru six stories, add		0.54	
04245 0499 Lightweight				
0500	Concrete block bond beam 8" H, 8" thk, no scaf, no grout/reinf,	LF	4.00	
0600	Conc blk bond beam for special color, add		0.26	
0610	Conc blk bond beam for stacked bond, add		0.53	
0620	Conc blk bond beam for scored block, add		0.20	
0630	Conc blk bond beam for bullnose block, add		0.20	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		2.99	
0650	Conc blk bond beam two stories thru four, add		0.30	
0660	Conc blk bond beam five thru six stories, add		0.40	
0525	Concrete block bond beam 8" H, 6" thk, no scaf, no grout/reinf,	LF	4.10	
0600	Conc blk bond beam for special color, add		0.25	
0610	Conc blk bond beam for stacked bond, add		0.56	
0620	Conc blk bond beam for scored block, add		0.20	
0630	Conc blk bond beam for bullnose block, add		0.20	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		3.03	
0650	Conc blk bond beam two stories thru four, add		0.32	
0660	Conc blk bond beam five thru six stories, add		0.43	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0550	Concrete block bond beam 8" H, 12"thk, no scaf, no grout/reinf,	LF	5.52	
0600	Conc blk bond beam for special color, add		0.38	
0610	Conc blk bond beam for stacked bond, add		0.68	
0620	Conc blk bond beam for scored block, add		0.29	
0630	Conc blk bond beam for bullnose block, add		0.29	
0640	Conc blk bond beam grout and fill with 2 #5 rebar, add		4.21	
0650	Conc blk bond beam two stories thru four, add		0.39	
0660	Conc blk bond beam five thru six stories, add		0.53	
04247 0010	Concrete block foundation wall, no scaffolding			
0200	Conc blk, 8"x 16"x 6" thk, no scaf/reinf, rglr, fdn wall	SF	4.27	
0355	Conc blk fdn wall, for special color, add		0.22	
0360	Conc blk fdn wall, for stacked bond, add		0.67	
0365	Conc blk fdn wall, for scored block, add		0.17	
0370	Conc blk fdn wall, for bullnose block, add		0.17	
0375	Conc blk fdn wall, two stories thru four, add		0.39	
0380	Conc blk fdn wall, five thru six stories, add		0.52	
0250	Conc blk, 8"x 16"x 8" thk, no scaf/reinf, rglr, fdn wall	SF	4.75	
0355	Conc blk fdn wall, for special color, add		0.27	
0360	Conc blk fdn wall, for stacked bond, add		0.70	
0365	Conc blk fdn wall, for scored block, add		0.21	
0370	Conc blk fdn wall, for bullnose block, add		0.21	
0375	Conc blk fdn wall, two stories thru four, add		0.41	
0380	Conc blk fdn wall, five thru six stories, add		0.54	
0300	Conc blk, 8"x 16"x 10" thk, no scaf/reinf, rglr, fdn wall	SF	5.72	
0355	Conc blk fdn wall, for special color, add		0.38	
0360	Conc blk fdn wall, for stacked bond, add		0.72	
0365	Conc blk fdn wall, for scored block, add		0.30	
0370	Conc blk fdn wall, for bullnose block, add		0.30	
0375	Conc blk fdn wall, two stories thru four, add		0.41	
0380	Conc blk fdn wall, five thru six stories, add		0.55	
0350	Conc blk, 8"x 16"x 12" thk, no scaf/reinf, rglr, fdn wall	SF	6.64	
0355	Conc blk fdn wall, for special color, add		0.41	
0360	Conc blk fdn wall, for stacked bond, add		0.90	
0365	Conc blk fdn wall, for scored block, add		0.32	
0370	Conc blk fdn wall, for bullnose block, add		0.32	
0375	Conc blk fdn wall, two stories thru four, add		0.52	
0380	Conc blk fdn wall, five thru six stories, add		0.69	
04248 0010	Concrete block, high strength, no scaffolding			
	NOTE: 3500 PSI			
04248 0060	Hollow, reinforced			
0400	Conc blk high str, 8" x 16" x 2", no scaf, hollow, 3500 PSI	SF	4.18	
1000	Conc blk, high str, for 75% solid block, add		0.41	
1050	Conc blk, high str, for 100% solid block, add		0.68	
1055	Conc blk, high str, for special color, add		0.18	
1060	Conc blk, high str, for stacked bond, add		0.74	
1065	Conc blk, high str, for scored block, add		0.14	
1070	Conc blk, high str, for bullnose block, add		0.14	
1075	Conc blk, high str, two stories thru four, add		0.42	
1080	Conc blk, high str, five thru six stories, add		0.57	
0410	Conc blk high str, 8" x 16" x 4", no scaf, hollow, 3500 PSI	SF	4.25	
1000	Conc blk, high str, for 75% solid block, add		0.36	
1050	Conc blk, high str, for 100% solid block, add		0.60	
1055	Conc blk, high str, for special color, add		0.16	
1060	Conc blk, high str, for stacked bond, add		0.79	
1065	Conc blk, high str, for scored block, add		0.12	
1070	Conc blk, high str, for bullnose block, add		0.12	
1075	Conc blk, high str, two stories thru four, add		0.46	
1080	Conc blk, high str, five thru six stories, add		0.61	
0420	Conc blk high str, 8" x 16" x 6", no scaf, hollow, 3500 PSI	SF	4.80	
1000	Conc blk, high str, for 75% solid block, add		0.45	
1050	Conc blk, high str, for 100% solid block, add		0.75	
1055	Conc blk, high str, for special color, add		0.19	
1060	Conc blk, high str, for stacked bond, add		0.86	
1065	Conc blk, high str, for scored block, add		0.15	
1070	Conc blk, high str, for bullnose block, add		0.15	
1075	Conc blk, high str, two stories thru four, add		0.50	
1080	Conc blk, high str, five thru six stories, add		0.66	
0430	Conc blk high str, 8" x 16" x 8", no scaf, hollow, 3500 PSI	SF	5.30	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1000	Conc blk, high str, for 75% solid block, add		0.54	
1050	Conc blk, high str, for 100% solid block, add		0.90	
1055	Conc blk, high str, for special color, add		0.23	
1060	Conc blk, high str, for stacked bond, add		0.91	
1065	Conc blk, high str, for scored block, add		0.18	
1070	Conc blk, high str, for bullnose block, add		0.18	
1075	Conc blk, high str, two stories thru four, add		0.53	
1080	Conc blk, high str, five thru six stories, add		0.70	
0440	Conc blk high str, 8" x 16" x 10", no scaf, hollow, 3500 PSI	SF	6.07	
1000	Conc blk, high str, for 75% solid block, add		0.70	
1050	Conc blk, high str, for 100% solid block, add		1.17	
1055	Conc blk, high str, for special color, add		0.30	
1060	Conc blk, high str, for stacked bond, add		0.97	
1065	Conc blk, high str, for scored block, add		0.23	
1070	Conc blk, high str, for bullnose block, add		0.23	
1075	Conc blk, high str, two stories thru four, add		0.56	
1080	Conc blk, high str, five thru six stories, add		0.75	
0450	Conc blk high str, 8" x 16" x 12", no scaf, hollow, 3500 PSI	SF	6.46	
1000	Conc blk, high str, for 75% solid block, add		0.78	
1050	Conc blk, high str, for 100% solid block, add		1.30	
1055	Conc blk, high str, for special color, add		0.34	
1060	Conc blk, high str, for stacked bond, add		1.01	
1065	Conc blk, high str, for scored block, add		0.26	
1070	Conc blk, high str, for bullnose block, add		0.26	
1075	Conc blk, high str, two stories thru four, add		0.58	
1080	Conc blk, high str, five thru six stories, add		0.77	

04251 Terra Cotta Veneer

04251 1000 Coping

1001	8-9"W x 3"Thk Terra Cotta Coping (Veneer)	LF	15.77	2.71
3001	For Smooth Tile Instead Of Scored, Add		1.14	
3002	For Reinforcing With Steel Rods, Add		1.42	
3003	For Lcl Quantities, Add		1.58	
1002	12-13"Wx3"Thk Terra Cotta Coping (Veneer)	LF	20.15	2.48
3001	For Smooth Tile Instead Of Scored, Add		1.93	
3002	For Reinforcing With Steel Rods, Add		2.08	
3003	For Lcl Quantities, Add		2.02	

04251 2000 Partition Or Back Up (Scored)

04251 2200 Non-Load Bearing (12 In X 12 In)

2201	3" (76mm)Thk Terra Cotta, Non Brg 12"x12"Scored Face, Back-Up/Ptns	SF	5.80	
3001	For Smooth Tile Instead Of Scored, Add		0.64	
3002	For Reinforcing With Steel Rods, Add		0.65	
3003	For Lcl Quantities, Add		0.58	
2202	4" (10cm)Thk Terra Cotta, Non Brg 12"x12"Scored Face, Back-Up/Ptns	SF	6.19	
3001	For Smooth Tile Instead Of Scored, Add		0.67	
3002	For Reinforcing With Steel Rods, Add		0.68	
3003	For Lcl Quantities, Add		0.62	
2203	6" (15cm)Thk Terra Cotta, Non Brg 12"x12"Scored Face, Back-Up/Ptns	SF	7.83	
3001	For Smooth Tile Instead Of Scored, Add		0.92	
3002	For Reinforcing With Steel Rods, Add		0.90	
3003	For Lcl Quantities, Add		0.78	
2204	8" (21cm)Thk Terra Cotta, Non Brg 12"x12"Scored Face, Back-Up/Ptns	SF	9.49	
3001	For Smooth Tile Instead Of Scored, Add		1.15	
3002	For Reinforcing With Steel Rods, Add		1.11	
3003	For Lcl Quantities, Add		0.95	

04251 2400 Load Bearing (12 In X 12 In)

04251 2420 In Walls

2421	4" (10cm)Thk Terra Cotta, Walls 12"x12"Load Brg Scored Face	SF	6.52	
3001	For Smooth Tile Instead Of Scored, Add		0.73	
3002	For Reinforcing With Steel Rods, Add		0.73	
3003	For Lcl Quantities, Add		0.65	
2422	6" (15cm)Thk Terra Cotta, Walls 12"x12"Load Brg Scored Face	SF	8.57	
3001	For Smooth Tile Instead Of Scored, Add		1.05	
3002	For Reinforcing With Steel Rods, Add		1.01	
3003	For Lcl Quantities, Add		0.86	
2423	8" (21cm)Thk Terra Cotta, Walls 12"x12"Load Brg Scored Face	SF	10.21	
3001	For Smooth Tile Instead Of Scored, Add		1.28	
3002	For Reinforcing With Steel Rods, Add		1.22	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3003	For Lcl Quantities, Add		1.02	
2424	10"(25cm)Thk Terra Cotta,Walls 12"x12"Load Brg Scored Face	SF	10.82	
3001	For Smooth Tile Instead Of Scored, Add		1.31	
3002	For Reinforcing With Steel Rods, Add		1.27	
3003	For Lcl Quantities, Add		1.08	
2425	12"(31cm)Thk Terra Cotta,Walls 12"x12"Load Brg Scored Face	SF	12.94	
3001	For Smooth Tile Instead Of Scored, Add		1.59	
3002	For Reinforcing With Steel Rods, Add		1.53	
3003	For Lcl Quantities, Add		1.29	
04251 2440 In Floors				
2441	4"(10cm)Thk Terra Cotta,Floors 12"x12"Load Brg Scored Face	SF	5.70	
3001	For Smooth Tile Instead Of Scored, Add		0.73	
3002	For Reinforcing With Steel Rods, Add		0.69	
3003	For Lcl Quantities, Add		0.57	
2442	6"(15cm)Thk Terra Cotta,Floors 12"x12"Load Brg Scored Face	SF	7.66	
3001	For Smooth Tile Instead Of Scored, Add		1.05	
3002	For Reinforcing With Steel Rods, Add		0.97	
3003	For Lcl Quantities, Add		0.77	
2443	8"(21cm)Thk Terra Cotta,Floors 12"x12"Load Brg Scored Face	SF	9.27	
3001	For Smooth Tile Instead Of Scored, Add		1.28	
3002	For Reinforcing With Steel Rods, Add		1.18	
3003	For Lcl Quantities, Add		0.93	
2444	10"(25cm)Thk Terra Cotta,Floors 12"x12"Load Brg Scored Face	SF	9.76	
3001	For Smooth Tile Instead Of Scored, Add		1.31	
3002	For Reinforcing With Steel Rods, Add		1.22	
3003	For Lcl Quantities, Add		0.98	
2445	12"(31cm)Thk Terra Cotta,Floors 12"x12"Load Brg Scored Face	SF	11.57	
3001	For Smooth Tile Instead Of Scored, Add		1.59	
3002	For Reinforcing With Steel Rods, Add		1.46	
3003	For Lcl Quantities, Add		1.16	
04252 Masonry Panels				
Note: Prices Include Std. Brick Epoxy Mortar, And Hoisting				
04253 0009 Wall panels				
0020	Wall panels prefabricated, 4" thick	SF	15.38	
0200	Wall panels, 4" brick & 2" concrete back-up, add		4.75	
0300	Wall panels, 4" brick & 1" urethane & 3" concrete back-up, add		6.64	
04254 Structural Facing Tile				
04255 0010 Structural facing tile, no scaffolding				
04255 0019 6T functional colors				
0020	Strl facing tile, glazed 1 side, 5-1/3"x 12", no scaf, 6T, 2" th	SF	13.15	
1400	Strl facing tile, for designer colors, add		2.00	
1410	Strl facing tile, for colors other than white, add		0.80	
1420	Strl facing tile, for stacked bond with ground ends, add		0.92	
0100	Strl facing tile, glazed 1 side, 5-1/3"x 12", no scaf, 6T, 4" th	SF	14.92	
1400	Strl facing tile, for designer colors, add		2.41	
1410	Strl facing tile, for colors other than white, add		0.97	
1420	Strl facing tile, for stacked bond with ground ends, add		1.01	
0150	Strl facing tile, glazed 2 side, 5-1/3"x 12", no scaf, 6T, 4" th	SF	21.32	
1400	Strl facing tile, for designer colors, add		3.84	
1410	Strl facing tile, for colors other than white, add		1.54	
1420	Strl facing tile, for stacked bond with ground ends, add		1.36	
0250	Strl facing tile, glazed 1 side, 5-1/3"x 12", no scaf, 6T, 6" th	SF	19.79	
1400	Strl facing tile, for designer colors, add		3.57	
1410	Strl facing tile, for colors other than white, add		1.43	
1420	Strl facing tile, for stacked bond with ground ends, add		1.27	
0300	Strl facing tile, glazed 2 side, 5-1/3"x 12", no scaf, 6T, 6" th	SF	34.82	
1400	Strl facing tile, for designer colors, add		7.14	
1410	Strl facing tile, for colors other than white, add		2.86	
1420	Strl facing tile, for stacked bond with ground ends, add		2.05	
0400	Strl facing tile, glazed 1 side, 5-1/3"x 12", no scaf, 6T, 8" th	SF	24.80	
1400	Strl facing tile, for designer colors, add		4.59	
1410	Strl facing tile, for colors other than white, add		1.84	
1420	Strl facing tile, for stacked bond with ground ends, add		1.56	
04255 0499 6T special shapes				
0500	Strl facing tile, group 1, 5-1/3"x 12", no scaf, 6T special	SF	20.02	
1400	Strl facing tile, for designer colors, add		3.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1410	Strl facing tile, for colors other than white, add		1.35	
1420	Strl facing tile, for stacked bond with ground ends, add		1.33	
0550	Strl facing tile, group 2, 5-1/3"x 12", no scaf, 6T special	SF	24.64	
1400	Strl facing tile, for designer colors, add		4.42	
1410	Strl facing tile, for colors other than white, add		1.77	
1420	Strl facing tile, for stacked bond with ground ends, add		1.58	
0600	Strl facing tile, group 3, 5-1/3"x 12", no scaf, 6T special	SF	28.67	
1400	Strl facing tile, for designer colors, add		5.31	
1410	Strl facing tile, for colors other than white, add		2.12	
1420	Strl facing tile, for stacked bond with ground ends, add		1.81	
0650	Strl facing tile, group 4, 5-1/3"x 12", no scaf, 6T special	SF	50.41	
1400	Strl facing tile, for designer colors, add		10.60	
1410	Strl facing tile, for colors other than white, add		4.24	
1420	Strl facing tile, for stacked bond with ground ends, add		2.92	
0700	Strl facing tile, group 5, 5-1/3"x 12", no scaf, 6T special	SF	69.11	
1400	Strl facing tile, for designer colors, add		15.10	
1410	Strl facing tile, for colors other than white, add		6.04	
1420	Strl facing tile, for stacked bond with ground ends, add		3.89	
04255 0999	6T fire rated			
1000	Strl facing tile, 4" thk, 1 hr, 5-1/3"x 12", no scaf, 6T fire	SF	28.29	
1400	Strl facing tile, for designer colors, add		5.69	
1410	Strl facing tile, for colors other than white, add		2.28	
1420	Strl facing tile, for stacked bond with ground ends, add		1.69	
1050	Strl facing tile, 4" thk, 2 hr, 5-1/3"x 12", no scaf, 6T fire	SF	23.99	
1400	Strl facing tile, for designer colors, add		4.29	
1410	Strl facing tile, for colors other than white, add		1.72	
1420	Strl facing tile, for stacked bond with ground ends, add		1.54	
04255 1299	6T acoustic			
1300	Strl facing tile, 5-1/3"x 12", no scaf, 6T acoustic, 4" thk	SF	20.19	
1310	Strl facing tile, 5-1/3"x 12", no scaf, 6T acoustic, 6" thk	SF	22.56	
1320	Strl facing tile, 5-1/3"x 12", no scaf, 6T acoustic, 8" thk	SF	24.46	
04255 1349	8T acoustic			
1350	Strl facing tile, 5-1/3"x 12", no scaf, 8T acoustic, 4" thk	SF	14.11	
1360	Strl facing tile, 5-1/3"x 12", no scaf, 8T acoustic, 6" thk	SF	14.91	
1370	Strl facing tile, 5-1/3"x 12", no scaf, 8T acoustic, 8" thk	SF	17.02	
04255 2000	8Wseries			
2050	Strl facing tile, glazed 1 side, no scaf, 8W 8" x 16", 2" thk	SF	11.32	
3200	Strl facing tile, for designer colors, add		2.03	
3310	Strl facing tile, for colors other than white, add		0.81	
3320	Strl facing tile, for stacked bond with ground ends, add		0.73	
2100	Strl facing tile, glazed 1 side, no scaf, 8W 8" x 16", 4" thk	SF	12.12	
3200	Strl facing tile, for designer colors, add		2.19	
3310	Strl facing tile, for colors other than white, add		0.88	
3320	Strl facing tile, for stacked bond with ground ends, add		0.77	
2150	Strl facing tile, glazed 2 side, no scaf, 8W 8" x 16", 4" thk	SF	17.60	
3200	Strl facing tile, for designer colors, add		3.51	
3310	Strl facing tile, for colors other than white, add		1.40	
3320	Strl facing tile, for stacked bond with ground ends, add		1.06	
2200	Strl facing tile, glazed 1 side, no scaf, 8W 8" x 16", 6" thk	SF	15.96	
3200	Strl facing tile, for designer colors, add		3.11	
3310	Strl facing tile, for colors other than white, add		1.25	
3320	Strl facing tile, for stacked bond with ground ends, add		0.97	
2210	Strl facing tile, glazed 2 side, no scaf, 8W 8" x 16", 6" thk	SF	18.09	
3200	Strl facing tile, for designer colors, add		3.36	
3310	Strl facing tile, for colors other than white, add		1.35	
3320	Strl facing tile, for stacked bond with ground ends, add		1.14	
2250	Strl facing tile, glazed 1 side, no scaf, 8W 8" x 16", 8" thk	SF	18.09	
3200	Strl facing tile, for designer colors, add		3.59	
3310	Strl facing tile, for colors other than white, add		1.44	
3320	Strl facing tile, for stacked bond with ground ends, add		1.09	
2260	Strl facing tile, glazed 2 side, no scaf, 8W 8" x 16", 8" thk	SF	16.72	
3200	Strl facing tile, for designer colors, add		2.86	
3310	Strl facing tile, for colors other than white, add		1.15	
3320	Strl facing tile, for stacked bond with ground ends, add		1.10	
04255 2499	8Wspecial shapes			
2500	Strl facing tile, no scaf, 8W special shapes, group 1	SF	17.87	
3200	Strl facing tile, for designer colors, add		3.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3310	Strl facing tile, for colors other than white, add		1.35	
3320	Strl facing tile, for stacked bond with ground ends, add		1.11	
2550	Strl facing tile, no scaf, 8W, special shapes, group 2	SF	22.12	
3200	Strl facing tile, for designer colors, add		4.37	
3310	Strl facing tile, for colors other than white, add		1.75	
3320	Strl facing tile, for stacked bond with ground ends, add		1.34	
2600	Strl facing tile, no scaf, 8W, special shapes, group 3	SF	25.00	
3200	Strl facing tile, for designer colors, add		5.00	
3310	Strl facing tile, for colors other than white, add		2.00	
3320	Strl facing tile, for stacked bond with ground ends, add		1.50	
2650	Strl facing tile, no scaf, 8W, special shapes, group 4	SF	44.71	
3200	Strl facing tile, for designer colors, add		9.87	
3310	Strl facing tile, for colors other than white, add		3.95	
3320	Strl facing tile, for stacked bond with ground ends, add		2.50	
2700	Strl facing tile, no scaf, 8W, special shapes, group 5	SF	84.91	
3200	Strl facing tile, for designer colors, add		19.87	
3310	Strl facing tile, for colors other than white, add		7.95	
3320	Strl facing tile, for stacked bond with ground ends, add		4.52	

04259 Masonry Veneer

04260 0010 Brick veneer, no scaf, 3% brk & 25% mortar waste

0020	Brick veneer, 4"x 2-2/3"x 8", sel common, incl waste, TL lot,	SF	3.79	
1400	Brick veneer, for battered walls, add		0.70	
1450	Brick veneer, for corbels, add		1.74	
1500	Brick veneer, for curved walls, add		0.70	
3400	Brick veneer, for cavity wall construction, add		0.35	
3450	Brick veneer, for stacked bond, add		0.23	
3500	Brick veneer, for interior veneer construction, add		0.35	
3550	Brick veneer, for curved walls, add		0.70	
3600	Brick veneer, for full header every 6th course, add		0.09	
3610	Brick veneer, for English, full header every 2nd course, add		0.19	
3620	Brick veneer, for Flemish, alternate header every course, add		0.28	
3630	Brick veneer, for colored mortar, add		0.07	
1000	Brick veneer, 6" x 4" x 12", jumbo, incl waste, TL lot, no	SF	8.32	
1400	Brick veneer, for battered walls, add		0.80	
1450	Brick veneer, for corbels, add		2.01	
1500	Brick veneer, for curved walls, add		0.80	
3400	Brick veneer, for cavity wall construction, add		0.40	
3450	Brick veneer, for stacked bond, add		0.27	
3500	Brick veneer, for interior veneer construction, add		0.40	
3550	Brick veneer, for curved walls, add		0.80	
3600	Brick veneer, for full header every 6th course, add		0.11	
3610	Brick veneer, for English, full header every 2nd course, add		0.21	
3620	Brick veneer, for Flemish, alternate header every course, add		0.32	
3630	Brick veneer, for colored mortar, add		0.28	
2020	Brick veneer, 4"x 2-2/3"x 8", std, red, incl waste, TL lot, no	SF	8.79	
1400	Brick veneer, for battered walls, add		1.58	
1450	Brick veneer, for corbels, add		3.95	
3400	Brick veneer, for cavity wall construction, add		0.79	
3450	Brick veneer, for stacked bond, add		0.53	
3500	Brick veneer, for interior veneer construction, add		0.79	
3550	Brick veneer, for curved walls, add		1.58	
3600	Brick veneer, for full header every 6th course, add		0.21	
3610	Brick veneer, for English, full header every 2nd course, add		0.42	
3620	Brick veneer, for Flemish, alternate header every course, add		0.63	
3630	Brick veneer, for colored mortar, add		0.18	
2700	Brick veneer, running bond, glazed face, incl waste, TL lot,	SF	15.91	
1400	Brick veneer, for battered walls, add		1.66	
1450	Brick veneer, for corbels, add		4.14	
3400	Brick veneer, for cavity wall construction, add		0.83	
3450	Brick veneer, for stacked bond, add		0.55	
3500	Brick veneer, for interior veneer construction, add		0.83	
3550	Brick veneer, for curved walls, add		1.66	
3600	Brick veneer, for full header every 6th course, add		0.22	
3610	Brick veneer, for English, full header every 2nd course, add		0.44	
3620	Brick veneer, for Flemish, alternate header every course, add		0.66	
3630	Brick veneer, for colored mortar, add		0.52	
3050	Brick veneer, 4" x 2-2/3" x 12", norman, incl waste, TL lot, no	SF	7.07	
1400	Brick veneer, for battered walls, add		1.09	
1450	Brick veneer, for corbels, add		2.72	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3385	Brick veneer, for marble chip, add		0.52	
3400	Brick veneer, for cavity wall construction, add		0.54	
3450	Brick veneer, for stacked bond, add		0.36	
3500	Brick veneer, for interior veneer construction, add		0.54	
3550	Brick veneer, for curved walls, add		1.09	
3600	Brick veneer, for full header every 6th course, add		0.14	
3610	Brick veneer, for English, full header every 2nd course, add		0.29	
3620	Brick veneer, for Flemish, alternate header every course, add		0.43	
3630	Brick veneer, for colored mortar, add		0.17	
3375	Brick veneer, buff face brick, incl waste, TL lot, no scaf	SF	9.00	
1400	Brick veneer, for battered walls, add		1.62	
1450	Brick veneer, for corbels, add		4.04	
3400	Brick veneer, for cavity wall construction, add		0.81	
3450	Brick veneer, for stacked bond, add		0.54	
3500	Brick veneer, for interior veneer construction, add		0.81	
3550	Brick veneer, for curved walls, add		1.62	
3600	Brick veneer, for full header every 6th course, add		0.22	
3610	Brick veneer, for English, full header every 2nd course, add		0.43	
3620	Brick veneer, for Flemish, alternate header every course, add		0.65	
3630	Brick veneer, for colored mortar, add		0.18	

04261 Glass Unit Masonry

04270 0010 Glass block, no scaffolding

04270 0099 Plain

0100	Glass block, no scaf, 6" x 6", 4" thk, plain, under 1,000 SF	SF	27.83	
0700	Glass block, for solar reflective blocks, add		17.75	
0730	Glass block, for sculptured blocks, add		6.21	
0740	Glass block, for colored glass, add		3.55	
0150	Glass block, no scaf, 8" x 8", 4" thk, plain, under 1,000 SF	SF	20.46	
0700	Glass block, for solar reflective blocks, add		13.21	
0730	Glass block, for sculptured blocks, add		4.62	
0740	Glass block, for colored glass, add		2.64	
0200	Glass block, no scaf, 12" x 12", 4" thk, plain, under 1,000 SF	SF	22.59	
0700	Glass block, for solar reflective blocks, add		15.96	
0730	Glass block, for sculptured blocks, add		5.59	
0740	Glass block, for colored glass, add		3.19	
0300	Glass block, no scaf, 6" x 6", 4" thk, plain, 1,000 to 5,000 SF	SF	26.85	
0700	Glass block, for solar reflective blocks, add		18.26	
0730	Glass block, for sculptured blocks, add		6.39	
0740	Glass block, for colored glass, add		3.65	
0350	Glass block, no scaf, 8" x 8", 4" thk, plain, 1,000 to 5,000 SF	SF	19.60	
0700	Glass block, for solar reflective blocks, add		13.50	
0730	Glass block, for sculptured blocks, add		4.73	
0740	Glass block, for colored glass, add		2.70	
0400	Glass block, no scaf, 12"x12", 4" thk, plain, 1,000 to 5,000 SF	SF	21.81	
0700	Glass block, for solar reflective blocks, add		16.42	
0730	Glass block, for sculptured blocks, add		5.75	
0740	Glass block, for colored glass, add		3.28	
0500	Glass block, no scaf, 6" x 6", 4" thk, plain, over 5,000 SF	SF	25.63	
0700	Glass block, for solar reflective blocks, add		17.63	
0730	Glass block, for sculptured blocks, add		6.17	
0740	Glass block, for colored glass, add		3.53	
0550	Glass block, no scaf, 8" x 8", 4" thk, plain, over 5,000 SF	SF	18.43	
0700	Glass block, for solar reflective blocks, add		13.04	
0730	Glass block, for sculptured blocks, add		4.56	
0740	Glass block, for colored glass, add		2.61	
0600	Glass block, no scaf, 12" x 12", 4" thk, plain, over 5,000 SF	SF	20.62	
0700	Glass block, for solar reflective blocks, add		15.79	
0730	Glass block, for sculptured blocks, add		5.53	
0740	Glass block, for colored glass, add		3.16	

04280 1000 Hollow Gypsum Block

1001	2" (51mm)Thk Hollow Gypsum Block 12x30"Ptn Block, Car Load Lot	SF	2.93	
1011	For Lcl Lots, Add		0.17	
1002	3" (76mm)Thk Hollow Gypsum Block 12x30"Ptn Block, Car Load Lot	SF	3.26	
1011	For Lcl Lots, Add		0.19	
1003	4" (10cm)Thk Hollow Gypsum Block 12x30"Ptn Block, Car Load Lot	SF	3.71	
1011	For Lcl Lots, Add		0.21	
1004	6" (15cm)Thk Hollow Gypsum Block 12x30"Ptn Block, Car Load Lot	SF	4.04	
1011	For Lcl Lots, Add		0.23	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
04400	Stone			
04405	Cast Stone			
04405 1000	Cast Stone			
1001	Mblded Stone Column Cover	SF	26.07	
04410	Rough Stone			
04411 0009	Rough stone wall			
0010	Rough stone wall, dry, under 18" thk	CF	21.34	
0600	Rough stone wall, up to 18" thk, rubble stone walls, in mortar	CF	23.20	
04411 2000	Ashlar Veneer (Random Size, Medium Prices Stone,			
2010	4" Thk Ashlar Stone Veneer, Squa re Cut	SF	23.96	
2020	6" Thk Ashlar Stone Veneer, Squa re Cut	SF	24.87	
04422	Marble			
04422 1000	Mrble (Italian)			
04422 1100	Facing Panels			
1101	3/4"(19mm)Thk Mrble Face Panel (Italian)	SF	51.27	
1102	1-1/2"(37mm)Th Mrble Face Panel (Italian)	SF	61.34	
1103	2-1/4"(57mm)Th Mrble Face Panel (Italian)	SF	73.78	
04422 1200	Column Bases-1 In (25Mn) Thick			
1201	4" (10cm)High Mrble Colum Bases (Italian) 1" (25mm)Thick Base	LF	42.21	
1202	6" (15cm)High Mrble Colum Bases (Italian) 1" (25mm)Thick Base	LF	50.01	
04422 1300	Columns			
1301	Plain Faced Solid Mrble Columns (Italian)	CY	1,422.18	
1302	Fluted,Solid Mrble Columns (Italian)(Carved)	CY	1,540.31	
04422 1400	Flooring			
1401	Mrble Travertine Flooring (Italian)	SF	17.12	
1402	12x12"x1/2"(13mm)Mrble Flooring (Italian) Std Size,Uniform Colo	SF	22.05	
1403	Special Design Mrble Flooring (Ital)Milti Color,(No Circular)	SF	25.67	
1404	12x12"x3/8"(13mm)Mrble Flooring	SF	20.98	
04422 1500	Mscellaneous Mrble Items			
1502	12" (31cm) Mrble Stair Treads (Italian)	LF	49.85	
1503	3' (91cm)L Plain Mrble Threshold 4-6" (15cm)W x7/8" (22mm)Th (Ital	EA	58.23	
1504	6" (15cm)Wide Mrble Window Sills 2" (51mm)Thick (Italian)	LF	65.07	
1507	6" (15cm)Wide Mrble Stair Risers (Italian)	LF	31.52	
1508	3' (91cm)L Bevel Mrble Threshold (Ital)4-6" (15cm)W x7/8" (22mm)T	EA	77.61	
1509	5" (15cm)Wide Mrble Window Stool (Ital) 7/8" (22mm)Thick, Polished	LF	25.07	
04422 3000	Mrble (Local), MxinmmSize 3 Ft X 1.5 Ft			
04422 3100	Facing Panels			
3101	3/4"(19mm)Thk Mrble Face Panel (Local) 3' (91cm)x 1.5' (46cm)Max	SF	58.54	
4001	Shipping For 30 Mles (50Km) Add		0.26	
4002	Shipping For 60 Mles (100Km) Add		0.52	
4003	Shipping For 300 Mles (500Km) Add		2.62	
4004	Shipping For 600 Mles (1000Km) Add		5.23	
3102	1-1/2"(37mm)Th Mrble Face Panel (Local) 3' (91cm)x 1.5' (46cm)Max	SF	60.65	
4001	Shipping For 30 Mles (50Km) Add		0.27	
4002	Shipping For 60 Mles (100Km) Add		0.54	
4003	Shipping For 300 Mles (500Km) Add		2.72	
4004	Shipping For 600 Mles (1000Km) Add		5.44	
3103	2-1/4"(57mm)Th Mrble Face Panel (Local) 3' (91cm)x 1.5' (46cm)Max	SF	73.56	
4001	Shipping For 30 Mles (50Km) Add		0.33	
4002	Shipping For 60 Mles (100Km) Add		0.67	
4003	Shipping For 300 Mles (500Km) Add		3.33	
4004	Shipping For 600 Mles (1000Km) Add		6.66	
04422 3200	Flooring			
3201	Mrble Travertine Flooring (Local)	SF	20.51	
4001	Shipping For 30 Mles (50Km) Add		0.08	
4002	Shipping For 60 Mles (100Km) Add		0.16	
4003	Shipping For 300 Mles (500Km) Add		0.78	
4004	Shipping For 600 Mles (1000Km) Add		1.57	
3202	12"x12"x1/2"(13mm)Mrble Floor'g (Local) Std Size,Uni form Color	SF	19.51	
4001	Shipping For 30 Mles (50Km) Add		0.06	
4002	Shipping For 60 Mles (100Km) Add		0.12	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4003	Shipping For 300 Miles (500Km) Add		0.60	
4004	Shipping For 600 Miles (1000Km) Add		1.21	
3203	Special Design Marble Flooring (Local)Multi Color, (No Circular)	SF	26.43	
4001	Shipping For 30 Miles (50Km) Add		0.10	
4002	Shipping For 60 Miles (100Km) Add		0.19	
4003	Shipping For 300 Miles (500Km) Add		0.96	
4004	Shipping For 600 Miles (1000Km) Add		1.92	
3204	12"x12"x3/8" (13mm) Marble Floor'g Local, Std Size, Uniform Color	SF	17.61	
4001	Shipping For 30 Miles (50Km) Add		0.05	
4002	Shipping For 60 Miles (100Km) Add		0.10	
4003	Shipping For 300 Miles (500Km) Add		0.49	
4004	Shipping For 600 Miles (1000Km) Add		0.98	
04422 3300 Miscellaneous Marble Items				
3301	12" (31cm) Marble Stair Treads (Local)	LF	51.37	
4001	Shipping For 30 Miles (50Km) Add		0.25	
4002	Shipping For 60 Miles (100Km) Add		0.49	
4003	Shipping For 300 Miles (500Km) Add		2.47	
4004	Shipping For 600 Miles (1000Km) Add		4.93	
3302	6" (15cm) Wide Marble Stair Risers (Local)	LF	38.42	
4001	Shipping For 30 Miles (50Km) Add		0.18	
4002	Shipping For 60 Miles (100Km) Add		0.36	
4003	Shipping For 300 Miles (500Km) Add		1.81	
4004	Shipping For 600 Miles (1000Km) Add		3.62	
3303	3' (91cm) L Plain Marble Threshold (Local) 4-6" (15cm) W x 7/8" (22mm) T	EA	59.85	
4001	Shipping For 30 Miles (50Km) Add		0.26	
4002	Shipping For 60 Miles (100Km) Add		0.52	
4003	Shipping For 300 Miles (500Km) Add		2.62	
4004	Shipping For 600 Miles (1000Km) Add		5.23	
3304	3' (91cm) L Bevel Marble Threshold (Local) 4-6" (15cm) W x 7/8" (22mm) T	EA	79.97	
4001	Shipping For 30 Miles (50Km) Add		0.38	
4002	Shipping For 60 Miles (100Km) Add		0.76	
4003	Shipping For 300 Miles (500Km) Add		3.82	
4004	Shipping For 600 Miles (1000Km) Add		7.65	
3305	6" (15cm) Wide Marble Window Sills (Local) 2" (51mm) Thick	LF	20.91	
4001	Shipping For 30 Miles (50Km) Add		0.09	
4002	Shipping For 60 Miles (100Km) Add		0.18	
4003	Shipping For 300 Miles (500Km) Add		0.89	
4004	Shipping For 600 Miles (1000Km) Add		1.78	
3306	5" (15cm) Wide Marble Window Stool (Local) 7/8" (22mm) Thick, Polished	LF	48.53	
4001	Shipping For 30 Miles (50Km) Add		0.25	
4002	Shipping For 60 Miles (100Km) Add		0.49	
4003	Shipping For 300 Miles (500Km) Add		2.47	
4004	Shipping For 600 Miles (1000Km) Add		4.93	
3307	Patio Blocks, Nonslid, 7/8" Thk	SF	18.21	
04423 Limestone				
04423 1000 Panels Up To 12 Ft X 5 Ft				
1001	2" (51mm) Th SmtH Limestone Panel Panels Up to 12' (3 7M)x5' (1 5M)	SF	28.68	
4001	Shipping For 30 Miles (50Km) Add		0.13	
4002	Shipping For 60 Miles (100Km) Add		0.26	
4003	Shipping For 300 Miles (500Km) Add		2.59	
4004	Shipping For 600 Miles (100Km) Add		5.19	
1002	2" (51mm) Smooth Limestone Panel Panels Up to 12' (3 7M)x5' (1 5M)	SF	28.68	
4001	Shipping For 30 Miles (50Km) Add		0.13	
4002	Shipping For 60 Miles (100Km) Add		0.26	
4003	Shipping For 300 Miles (500Km) Add		2.59	
4004	Shipping For 600 Miles (100Km) Add		5.19	
1003	3" (76mm) Smooth Limestone Panel Panels Up to 12' (3 7M)x5' (1 5M)	SF	30.77	
4001	Shipping For 30 Miles (50Km) Add		0.14	
4002	Shipping For 60 Miles (100Km) Add		0.29	
4003	Shipping For 300 Miles (500Km) Add		2.87	
4004	Shipping For 600 Miles (100Km) Add		5.74	
1004	4" (10cm) Smooth Limestone Panel Panels Up to 12' (3 7M)x5' (1 5M)	SF	37.19	
4001	Shipping For 30 Miles (50Km) Add		0.19	
4002	Shipping For 60 Miles (100Km) Add		0.38	
4003	Shipping For 300 Miles (500Km) Add		3.83	
4004	Shipping For 600 Miles (100Km) Add		7.65	
04423 2000 Ashlar Veneer				
2001	4" (10cm) Ashlar Veneer Limestone Random Med Priced Stone	SF	32.75	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4001	Shipping For 30 Miles (50Km) Add		0.23	
4002	Shipping For 60 Miles (100Km) Add		0.47	
4003	Shipping For 300 Miles (500Km) Add		4.65	
4004	Shipping For 600 Miles (100Km) Add		9.30	
2002	4" (10cm) Ashlar Veneer Limestone Random High Priced Stone	SF	33.54	
4001	Shipping For 30 Miles (50Km) Add		0.23	
4002	Shipping For 60 Miles (100Km) Add		0.47	
4003	Shipping For 300 Miles (500Km) Add		4.65	
4004	Shipping For 600 Miles (100Km) Add		9.30	
2003	6" To 8" Thk, Pitched Face Limestone, Ashlar Veneer Random	SF	53.59	
4001	Shipping For 30 Miles (50Km) Add		0.39	
4002	Shipping For 60 Miles (100Km) Add		0.79	
4003	Shipping For 300 Miles (500Km) Add		7.90	
4004	Shipping For 600 Miles (100Km) Add		15.80	
4005	Mdifier For High Lime Historic Mrtar, Add		0.03	
04423 3000 Msc. Limestone Items				
3001	14" (36cm) Wide Limestone Steps 6" (15cm) Deep, Extra Hard	LF	53.34	
4001	Shipping For 30 Miles (50Km) Add		0.42	
4002	Shipping For 60 Miles (100Km) Add		0.84	
4003	Shipping For 300 Miles (500Km) Add		8.36	
4004	Shipping For 600 Miles (100Km) Add		16.72	
3002	Smooth Finish Limestone Coping	CF	82.74	
4001	Shipping For 30 Miles (50Km) Add		0.57	
4002	Shipping For 60 Miles (100Km) Add		1.14	
4003	Shipping For 300 Miles (500Km) Add		11.35	
4004	Shipping For 600 Miles (100Km) Add		22.70	
3003	Limestone Sill, Lintel, Janb, etc Smooth Finish	CF	96.56	
4001	Shipping For 30 Miles (50Km) Add		0.62	
4002	Shipping For 60 Miles (100Km) Add		1.24	
4003	Shipping For 300 Miles (500Km) Add		12.38	
4004	Shipping For 600 Miles (100Km) Add		24.76	
04424 Granite				
04424 1000 Veneer Facing Panels - Polished				
Note: Add Cost Of Attaching Metal And Back Up Metal From Appropriate Sections.				
04424 1000 Basic Cost Items				
1001	7/8" (22mm) Th Black Granite Panel Veneer Facing	SF	62.30	
3001	Shipping For 30 Miles (50Km) Add		0.47	
3002	Shipping For 60 Miles (100Km) Add		0.71	
3003	Shipping For 300 Miles (500Km) Add		2.36	
3004	Shipping For 600 Miles (1000Km) Add		4.72	
1002	7/8" (22mm) Th Gray Granite Panel Veneer Facing	SF	54.83	
3001	Shipping For 30 Miles (50Km) Add		0.40	
3002	Shipping For 60 Miles (100Km) Add		0.60	
3003	Shipping For 300 Miles (500Km) Add		1.99	
3004	Shipping For 600 Miles (1000Km) Add		3.98	
04424 2200 Other Granite Items				
2201	4" (10cm) High Granite Base	LF	15.33	
3001	Shipping For 30 Miles (50Km) Add		0.10	
3002	Shipping For 60 Miles (100Km) Add		0.16	
3003	Shipping For 300 Miles (500Km) Add		0.52	
3004	Shipping For 600 Miles (1000Km) Add		1.04	
2202	6" (15cm) High Granite Base	LF	15.71	
3001	Shipping For 30 Miles (50Km) Add		0.09	
3002	Shipping For 60 Miles (100Km) Add		0.14	
3003	Shipping For 300 Miles (500Km) Add		0.46	
3004	Shipping For 600 Miles (1000Km) Add		0.92	
2203	Straight Granite Curb, City Type 6" (15cm) Hi x16" (41cm) Finish Face	LF	20.77	
3001	Shipping For 30 Miles (50Km) Add		0.13	
3002	Shipping For 60 Miles (100Km) Add		0.19	
3003	Shipping For 300 Miles (500Km) Add		0.64	
3004	Shipping For 600 Miles (1000Km) Add		1.28	
2204	>5' (1 5M) Radius Granite Curbs	LF	23.20	
3001	Shipping For 30 Miles (50Km) Add		0.10	
3002	Shipping For 60 Miles (100Km) Add		0.15	
3003	Shipping For 300 Miles (500Km) Add		0.49	
3004	Shipping For 600 Miles (1000Km) Add		0.99	
04424 2300 Msc. Granite Items				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	4"x4" (10cm) Granite Pavers, Durex Split Face Finish	SF	23.95	
3001	Shipping For 30 Miles (50Km) Add		0.16	
3002	Shipping For 60 Miles (100Km) Add		0.24	
3003	Shipping For 300 Miles (500Km) Add		0.80	
3004	Shipping For 600 Miles (1000Km) Add		1.60	
2302	4"x4" (10cm) Granite Pavers, Pink Split Face Finish	SF	23.77	
3001	Shipping For 30 Miles (50Km) Add		0.16	
3002	Shipping For 60 Miles (100Km) Add		0.24	
3003	Shipping For 300 Miles (500Km) Add		0.79	
3004	Shipping For 600 Miles (1000Km) Add		1.58	
2303	4"x4" (10cm) Granite Pavers, Black Split Face Finish	SF	23.25	
3001	Shipping For 30 Miles (50Km) Add		0.15	
3002	Shipping For 60 Miles (100Km) Add		0.23	
3003	Shipping For 300 Miles (500Km) Add		0.76	
3004	Shipping For 600 Miles (1000Km) Add		1.53	
2304	Bldg Granite w/Mch Finish -Min Incl Steps, Copings, Platforms, etc	CF	40.86	
3001	Shipping For 30 Miles (50Km) Add		0.16	
3002	Shipping For 60 Miles (100Km) Add		0.24	
3003	Shipping For 300 Miles (500Km) Add		0.81	
3004	Shipping For 600 Miles (1000Km) Add		1.62	
2305	Bldg Granite w/Mch Finish -Avg Incl Steps, Copings, Platforms, etc	CF	45.20	
3001	Shipping For 30 Miles (50Km) Add		0.18	
3002	Shipping For 60 Miles (100Km) Add		0.27	
3003	Shipping For 300 Miles (500Km) Add		0.89	
3004	Shipping For 600 Miles (1000Km) Add		1.78	
2306	Bldg Granite w/Mch Finish -Max Incl Steps, Copings, Platforms, etc	CF	50.02	
3001	Shipping For 30 Miles (50Km) Add		0.19	
3002	Shipping For 60 Miles (100Km) Add		0.29	
3003	Shipping For 300 Miles (500Km) Add		0.96	
3004	Shipping For 600 Miles (1000Km) Add		1.92	

04426 Slate (Panels or Sills)

04426 1000 Slate Panels

1001	1" (25mm) Thk Slate Panels 3' (91cm) to 6' (1 8M) SF	SF	32.11	
1002	2" (51mm) Thk Slate Panels 3' (91cm) to 6' (1 8M) SF	SF	43.13	

04426 2000 1 In (25Mm) Thick Slate Sills Or Stools

2001	6" (15cm) W Slate Sills or Stools 1" (25mm) Thk w/Sand Finish	LF	15.15	
2002	10" (25cm) W Slate Sills or Stools 1" (25mm) Thk w/Sand Finish	LF	22.16	

04426 3000 2 In (51Mm) Thick Slate Sills Or Stools

3001	6" (15cm) W Slate Sills or Stools 2" (51mm) Thk w/Sand Finish	LF	21.17	
3002	10" (25cm) W Slate Sills or Stools 2" (51mm) Thk w/Sand Finish	LF	36.19	

04429 Miscellaneous Patching

04429 1000 Clean And Patch Existing Stonework

1001	Clean And Patch Existing Stonework	SF	2.27	
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04429 2000 Removal Of Deteriorated Stone

2001	Removal Of Deteriorated Stone	SF	2.88	
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04450 Stone Veneer

04451 0011 Ashlar veneer (Random Size, Medium Prices Stone, Square Cut)

0054	Ashlar veneer, medium-priced stone	SF	16.96	
0120	Ashlar veneer, 6" + or - thick, random or random rectangular	SF	18.18	

04500 Masonry Restoration, Cleaning & Refractories

04510 Masonry Cleaning

04510 5000 Chemical Cleaning Of Brick Or Block

5001	Chemical Cleaning Of Brick Or Block	SF	0.79	
5002	Chemical Clean Of Synthetic Stucco Bldg. Incl Scaffolding	SF	0.79	

04510 6000 Water Blasting

Note: Covers All Masonry Products.

6001	Smooth Brick Or Block	SF	0.76	
6002	Rough Brick, Block Or Stone	SF	1.22	

04512 0010 Cleaning masonry

2001	Steam Clean Masonry Bldg Smooth Face, Incl Scaffolding	SF	1.06	
2100	Masonry cleaning, w/scaf, steam, masonry bldg, common brick face	SF	1.24	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2120	Masonry cleaning, wire cut brick face, w/scaf, steam clean bldg	SF	1.55	
2130	Masonry cleaning, no scaf, sand blast bldg face, w/poly/wood ped	SF	1.64	
3002	Sand Blast Bldg Face-Night Shift With Pedestrian Protection	SF	5.82	
04516 0009	Clean and point			
0010	Clean & point smooth brick	SF	1.17	
0012	Clean & Point Limestone On Historic Buildings	SF	1.40	
0013	Clean & point brick Masonry	SF	0.62	
0014	Clean & Point Marble & Granite	SF	0.47	
4003	Clean & Point Limestone On Historic Buildings	SF	1.56	
4004	Clean & Point Marble & Granite	SF	0.62	
04518 0009	Washing brick			
NOTE: Included in new construction				
0010	Washing brick, acid wash, smooth brick	SF	0.73	
0050	Washing brick, acid wash, rough brick	SF	0.93	
04520	Masonry Restoration			
04521 0010	Caulking masonry, no staging			
1000	Caulking masonry, oil base, 1/2" x 1/2", cut out & re-caulk, no	LF	2.15	
1050	Caulking masonry, butyl, 1/2" x 1/2", cut out & re-caulk, no scaf	LF	2.48	
1100	Caulking masonry, polysulfide, 1/2" x 1/2", cut out & re-caulk,	LF	2.90	
1150	Caulking masonry, silicone, 1/2" x 1/2", cut out & re-caulk, no	LF	3.11	
1160	Caulking masonry, acrylic	LF	4.59	
04527 0010	Pointing masonry			
0300	Pointing masonry, running bond, cut & repoint brick, hard mortar	SF	4.46	
0600	Pointing masonry, running bond, cut & repoint brick, soft old	SF	3.44	
0800	Pointing masonry, clean & repoint block masonry	SF	0.64	
0810	Cut & Repoint Brick & Stone Work	LF	3.34	
0820	Cut & Repoint Brick, Mask & Grout	SF	4.48	
04527 0900	Masking Doors & Windows			
0910	Masking Doors & Windows	SF	0.92	
04528 0010	Restoration of Masonry Joints			
0100	Brick Pointing Mortar	LF	1.07	
0110	Brick Pointing Mortar - White	LF	1.29	
0120	Mortar With Masonry Cement Type M 1:1:6 Mix	CF	5.41	
0130	Mortar With Masonry Cement Type N, 1:3 Mix	CF	5.08	
0140	Mortar With Masonry Cement Type U, 1:3 Mix	CF	5.18	
0150	Mortar With Masonry Cement Type PM 1:1:6 Mix 2500 PSI	CF	5.51	
0160	Mortar With Masonry Cement Type S, V2:1:4 Mix	CF	5.76	
0170	With Portland Cement And Lime Type M 1:1/4:3 Mix	CF	6.33	
0180	With Portland Cement And Lime Type N, 1:1:6 Mix	CF	5.34	
0190	With Portland Cement And Lime Type O, 1:2:9 Mix	CF	5.20	
0200	With Portland Cement And Lime Type PL, 1:1/2:4 Mix 2500 PSI	CF	5.94	
0210	With Portland Cement And Lime Type R, 1:3:12 Mix 75 PSI	CF	5.24	
0220	With Portland Cement And Lime Type S, 1:1/2:4 Mix 1800 PSI	CF	5.94	
0230	Mortar for Glass Block	CF	10.42	
0240	Mortar For Fire Brick 80LB Bag	BAG	17.94	
04530	Toothing Masonry Cutouts			
04530 0010	Toothing Masonry Cutouts			
0100	Toothing Masonry Cutouts, Brick Soft (Old) Mortar	VLF	4.19	
0200	Toothing Masonry Cutouts, Block Soft (old) Mortar	VLF	3.38	
04540	Selective Demolition Brick			
04540 0010	Selective Demolition Brick			
0100	4 SF Opening 4" Thick, Not Including Toothing	EA	33.80	
0200	4 SF Opening 8" Thick, Not Including Toothing	EA	56.66	
0300	4 SF Opening 8" Thick, Not Including Toothing	EA	101.36	
04550	Flue Liners			
04554 0009	Flue lining, including mortar joints			
Note: Including Mortar Joints				
0010	Flue lining, including mortar joints, 8" x 8"	LF	7.37	
0100	Flue lining, including mortar joints, 8" x 12"	LF	9.93	
0200	Flue lining, including mortar joints, 12" x 12"	LF	11.88	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0300	Flue lining, including mortar joints, 12" x 18"	LF	17.60	
0305	Flue lining, including mortar joints, 16" x 16"	LF	21.09	
0400	Flue lining, including mortar joints, 18" x 18"	LF	22.70	
0450	18" Diameter Round Flue Liners	LF	45.79	
0500	Flue lining, including mortar joints, 20" x 20"	LF	31.48	
0600	Flue lining, including mortar joints, 24" x 24"	LF	41.52	
0650	24" Diameter Round Flue Liners	LF	71.78	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
05001 Metal Materials, Coatings & Fastenings				
05005 Metal Fastening				
05020 0010 Expansion anchors				
05020 1349 Concrete anchor including drilling				
1350	Expansion anchors, 1/2" dia x 4.25" long, conc, incl drilling	EA	20.93	4.74
1355	Expansion anchors, 1/2" dia x 5.25" long, conc, incl drilling	EA	22.16	5.08
1360	Expansion anchors, 1/2" dia x 7" long, conc, incl drilling	EA	23.46	5.59
1365	Expansion anchors, 3/4" dia x 5.75" long, conc, incl drilling	EA	27.86	6.09
1370	Expansion anchors, 3/4" dia x 7" long, conc, incl drilling	EA	30.14	6.53
1375	Expansion anchors, 3/4" dia x 8.5" long, conc, incl drilling	EA	32.53	7.03
1380	Expansion anchors, 3/4" dia x 10" long, conc, incl drilling	EA	34.14	7.20
1385	Expansion anchors, 1" dia x 7.75" long, conc, incl drilling	EA	33.69	6.09
1390	Expansion anchors, 1" dia x 9" long, conc, incl drilling	EA	35.77	6.36
1395	Expansion anchors, 1" dia x 12" long, conc, incl drilling	EA	40.20	7.13
1400	Expansion anchors, 1.25" dia x 9" long, conc, incl drilling	EA	42.64	6.29
1405	Expansion anchors, 1.25" dia x 12" long, conc, incl drilling	EA	47.96	6.93
05020 1409 Concrete anchor with rod and epoxy				
1410	Expansion anchors, 1.75" dia x 15", conc, w/rod & epoxy	EA	75.27	2.83
1415	Expansion anchors, 1.75" dia x 18", conc, w/rod & epoxy	EA	84.73	3.47
1420	Expansion anchors, 2" dia x 18" long, conc, w/rod & epoxy	EA	88.28	3.57
1425	Expansion anchors, 2" dia x 24" long, conc, w/rod & epoxy	EA	94.56	4.01
05020 1429 Chemical anchor with rod and epoxy				
1430	Expansion anchors, 3/4" dia x 9.5", chemical, w/rod & epoxy	EA	38.73	7.37
1432	7/8"x10"(25.4cm)L Chemical Anch w/Rod & Epoxy Cartridge	EA	40.85	7.84
1435	Expansion anchors, 1" dia x 11.75", chemical, w/rod & epoxy	EA	50.67	8.31
1440	Expansion anchors, 1.25" dia x 14", chemical, w/rod & epoxy	EA	70.00	11.07
05020 2034 Self drilling anchor, snap off				
2035	Expansion anchors, self drill, snap-off, 1/4" dia, 1.25" min D	EA	15.43	1.63
2094	Expansion anchors, drill holes overhead, add		1.48	
6001	Drill Holes In Wall, Add		1.85	
2036	5/16"Snap-Off Self Drilling Anch 1-15/16" Min Depth in Concrete	EA	19.73	2.30
2094	Expansion anchors, drill holes overhead, add		1.89	
6001	Drill Holes In Wall, Add		2.36	
2037	3/8" Snap-Off Self Drilling Anch 1-17/32" Min Depth in Concrete	EA	22.98	2.83
2094	Expansion anchors, drill holes overhead, add		2.20	
6001	Drill Holes In Wall, Add		2.75	
2040	Expansion anchors, self drill, snap-off, 1/2" dia, 1-15/16" min D	EA	27.07	3.36
2094	Expansion anchors, drill holes overhead, add		2.56	
6001	Drill Holes In Wall, Add		3.20	
2042	5/8" Snap-Off Self Drilling Anch 2-15/32" Min Depth in Concrete	EA	29.13	4.73
2094	Expansion anchors, drill holes overhead, add		2.59	
6001	Drill Holes In Wall, Add		3.24	
2045	Expansion anchors, self drill, snap-off, 3/4" dia, 3" min D	EA	46.16	5.52
2094	Expansion anchors, drill holes overhead, add		4.16	
6001	Drill Holes In Wall, Add		5.20	
2046	7/8" Snap-Off Self Drilling Anch 3-11/16" Min Depth in Concrete	EA	48.63	5.86
2094	Expansion anchors, drill holes overhead, add		4.37	
6001	Drill Holes In Wall, Add		5.46	
05020 2049 Self drilling anchor, flush				
2050	Expansion anchors, 1.25" min depth, 1/4" dia, self drill,	EA	15.43	2.20
2094	Expansion anchors, drill holes overhead, add		1.48	
6001	Drill Holes In Wall, Add		1.85	
2052	5/16" Flush Self Drilling Anchor 1-7/32" Min Depth in Concrete	EA	19.31	2.70
2094	Expansion anchors, drill holes overhead, add		1.84	
6001	Drill Holes In Wall, Add		2.30	
2054	3/8" Flush Self Drilling Anchor 1-7/16" Min Depth in Concrete	EA	23.19	3.16
2094	Expansion anchors, drill holes overhead, add		2.20	
6001	Drill Holes In Wall, Add		2.75	
2055	Expansion anchors, 1-15/16" min depth, 1/2" dia, self drill,	EA	27.07	3.66
2094	Expansion anchors, drill holes overhead, add		2.56	
6001	Drill Holes In Wall, Add		3.20	
2057	5/8" Flush Self Drilling Anchor 2-3/8" Min Depth in Concrete	EA	29.62	4.46
2094	Expansion anchors, drill holes overhead, add		2.66	
6001	Drill Holes In Wall, Add		3.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2060	Expansion anchors, 3" min depth, 3/4" dia, self drill, flush	EA	46.16	5.03
2094	Expansion anchors, drill holes overhead, add		4.16	
6001	Drill Holes In Wall, Add		5.20	
05020 2064	Non-drilling anchor			
2065	Expansion anchors, 1-1/8" drilled depth, 1/4" dia,	EA	15.48	2.53
2094	Expansion anchors, drill holes overhead, add		1.48	
6001	Drill Holes In Wall, Add		1.85	
2067	3/8" Non-Drilling Anchor 1-9/16" Drilled Depth	EA	16.19	2.80
2094	Expansion anchors, drill holes overhead, add		1.54	
6001	Drill Holes In Wall, Add		1.92	
2070	Expansion anchors, 2-1/16" drilled depth, 1/2" dia,	EA	27.01	4.19
2094	Expansion anchors, drill holes overhead, add		2.56	
6001	Drill Holes In Wall, Add		3.20	
2072	5/8" Non-Drilling Anchor 2-9/16" Drilled Depth	EA	30.72	5.19
2094	Expansion anchors, drill holes overhead, add		2.87	
6001	Drill Holes In Wall, Add		3.59	
2075	Expansion anchors, 3-3/16" drilled depth, 3/4" dia,	EA	51.25	6.26
2094	Expansion anchors, drill holes overhead, add		4.75	
6001	Drill Holes In Wall, Add		5.94	
05020 2079	Multi-set anchor hollow wall			
2080	Expansion anchors, 1" min depth in conc, 1/4" dia, multi-set	EA	13.54	2.46
2094	Expansion anchors, drill holes overhead, add		1.33	
6001	Drill Holes In Wall, Add		1.66	
2082	3/8" Multi-Set Anchor 1-3/8" Min Depth in Concrete	EA	14.68	2.83
2094	Expansion anchors, drill holes overhead, add		1.43	
6001	Drill Holes In Wall, Add		1.79	
2085	Expansion anchors, 1.75" min depth in conc, 1/2" dia,	EA	24.26	4.09
2094	Expansion anchors, drill holes overhead, add		2.38	
6001	Drill Holes In Wall, Add		2.97	
2087	5/8" Multi-Set Anchor 2-1/4" Min Depth in Concrete	EA	25.92	5.06
2094	Expansion anchors, drill holes overhead, add		2.47	
6001	Drill Holes In Wall, Add		3.09	
2090	Expansion anchors, 2.5" min depth in conc, 3/4" dia,	EA	34.85	5.89
2094	Expansion anchors, drill holes overhead, add		3.33	
6001	Drill Holes In Wall, Add		4.16	
2850	Expansion anchors, 5/8" to 1-1/8" long, 3/8" dia, hollow wall,	EA	3.23	0.42
6001	Drill Holes In Wall, Add		0.30	
2860	Expansion anchors, 5/8" to 1.25" long, 1/2" dia, hollow wall,	EA	3.46	0.42
6001	Drill Holes In Wall, Add		0.30	
05020 2999	Toggle bolts			
3000	Expansion anchors, 1/8" dia, 2" long, multi-set, bright stl,	EA	3.44	
6001	Drill Holes In Wall, Add		0.39	
3450	Expansion anchors, 1/8" dia, 4" long, multi-set, bright stl,	EA	4.07	
6001	Drill Holes In Wall, Add		0.44	
3600	Expansion anchors, 3/8" dia, 3" long, multi-set, bright stl,	EA	4.77	
6001	Drill Holes In Wall, Add		0.48	
3650	Expansion anchors, 3/8" dia, 4" long, multi-set, bright stl,	EA	5.20	
6001	Drill Holes In Wall, Add		0.51	
3800	Expansion anchors, 1/2" dia, 4" long, multi-set, bright stl,	EA	7.48	
6001	Drill Holes In Wall, Add		0.56	
05020 5000	Screw anchors, conc, masonry, stone, no layout/drill			
6650	Expansion anchors, lead, 1" long, #6 & #8, screw, for conc,	EA	1.21	
6001	Drill Holes In Wall, Add		0.13	
6680	Expansion anchors, lead, 1" long, #10 & #12, screw, for	EA	1.44	
6001	Drill Holes In Wall, Add		0.15	
05020 8000	Wedge anchors, no layout or drilling			
Note: (Anchor Size In Diameter X OverAll Length). Drilling Not Included.				
8050	Expansion anchors, 1.75" long, wedge, carbon steel, 1/4" dia	EA	2.20	0.43
6001	Drill Holes In Wall, Add		0.22	
8740	Expansion anchors, drill holes overhead, add		0.18	
8075	Expansion anchors, 2.25" long, wedge, carbon steel, 1/4" dia	EA	2.42	0.37
6001	Drill Holes In Wall, Add		0.24	
8740	Expansion anchors, drill holes overhead, add		0.19	
8100	Expansion anchors, 3 1/4" long, wedge, carbon steel, 1/4" dia	EA	2.53	0.27
6001	Drill Holes In Wall, Add		0.23	
8740	Expansion anchors, drill holes overhead, add		0.18	
8110	3/8" Dia x 2-1/4"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	9.44	1.98

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6001	Drill Holes In Wall, Add		1.12	
8740	Expansion anchors, drill holes overhead, add		0.89	
8120	3/8" Dia x 3"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	14.25	1.98
6001	Drill Holes In Wall, Add		1.70	
8740	Expansion anchors, drill holes overhead, add		1.36	
8130	3/8" Dia x 5"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	23.65	1.98
6001	Drill Holes In Wall, Add		2.85	
8740	Expansion anchors, drill holes overhead, add		2.28	
8250	Expansion anchors, 2.75" long, wedge, carbon steel, 1/2" dia	EA	3.07	
6001	Drill Holes In Wall, Add		0.24	
8740	Expansion anchors, drill holes overhead, add		0.19	
8260	Expansion anchors, 4.25" long, wedge, carbon steel, 1/2" dia	EA	3.48	0.47
6001	Drill Holes In Wall, Add		0.25	
8740	Expansion anchors, drill holes overhead, add		0.20	
8270	Expansion anchors, wedge, carbon steel, 1/2" dia, 5.5" long	EA	3.74	0.43
6001	Drill Holes In Wall, Add		0.25	
8740	Expansion anchors, drill holes overhead, add		0.20	
8300	Expansion anchors, wedge, carbon steel, 1/2" dia, 7" long	EA	4.07	0.37
6001	Drill Holes In Wall, Add		0.26	
8740	Expansion anchors, drill holes overhead, add		0.21	
8310	5/8" Dia x 5"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	28.42	3.25
6001	Drill Holes In Wall, Add		3.32	
8740	Expansion anchors, drill holes overhead, add		2.66	
8320	5/8" Dia x 7"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	36.19	3.25
6001	Drill Holes In Wall, Add		4.21	
8740	Expansion anchors, drill holes overhead, add		3.37	
8330	5/8" Dia x 8-1/2"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	40.15	3.25
6001	Drill Holes In Wall, Add		4.66	
8740	Expansion anchors, drill holes overhead, add		3.73	
8350	Expansion anchors, wedge, carbon steel, 5/8" dia, 3.5" long	EA	4.27	0.83
6001	Drill Holes In Wall, Add		0.26	
8740	Expansion anchors, drill holes overhead, add		0.21	
8450	Expansion anchors, 4.25" long, wedge, carbon steel, 3/4" dia	EA	5.27	0.83
6001	Drill Holes In Wall, Add		0.29	
8740	Expansion anchors, drill holes overhead, add		0.23	
8460	Expansion anchors, wedge, carbon steel, 3/4" dia, 5.5" long	EA	5.91	0.83
6001	Drill Holes In Wall, Add		0.30	
8740	Expansion anchors, drill holes overhead, add		0.24	
8470	Expansion anchors, wedge, carbon steel, 3/4" dia, 8.5" long	EA	8.06	0.80
6001	Drill Holes In Wall, Add		0.32	
8740	Expansion anchors, drill holes overhead, add		0.25	
8500	Expansion anchors, wedge, carbon steel, 3/4" dia, 10" long	EA	9.27	0.70
6001	Drill Holes In Wall, Add		0.33	
8740	Expansion anchors, drill holes overhead, add		0.27	
8510	7/8" Dia x 6"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	38.53	3.95
6001	Drill Holes In Wall, Add		4.05	
8740	Expansion anchors, drill holes overhead, add		3.24	
8520	7/8" Dia x 8"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	51.64	4.45
6001	Drill Holes In Wall, Add		5.53	
8740	Expansion anchors, drill holes overhead, add		4.42	
8530	7/8" Dia x 10"L Wedge Anchor Expansion Bolt w/Nut & Washer	EA	64.11	4.45
6001	Drill Holes In Wall, Add		6.98	
8740	Expansion anchors, drill holes overhead, add		5.58	
8550	Expansion anchors, wedge, carbon steel, 1" dia, 6" long	EA	12.55	1.53
6001	Drill Holes In Wall, Add		0.33	
8740	Expansion anchors, drill holes overhead, add		0.27	
8575	Expansion anchors, wedge, carbon steel, 1" dia, 9" long	EA	16.30	1.57
6001	Drill Holes In Wall, Add		0.42	
8740	Expansion anchors, drill holes overhead, add		0.33	
8600	Expansion anchors, wedge, carbon steel, 1" dia, 12" long	EA	17.10	1.27
6001	Drill Holes In Wall, Add		0.42	
8740	Expansion anchors, drill holes overhead, add		0.33	
8650	Expansion anchors, wedge, carbon steel, 1.25" dia, 9" long	EA	22.66	2.33
6001	Drill Holes In Wall, Add		0.48	
8740	Expansion anchors, drill holes overhead, add		0.38	
8700	Expansion anchors, wedge, carbon steel, 1.25" dia, 12" long	EA	25.64	2.10
6001	Drill Holes In Wall, Add		0.56	
8740	Expansion anchors, drill holes overhead, add		0.44	

05075 0009 Welding

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
05075 0009	Cost per welder			
0010	Welding, field, cost per welder, no operating engineer	HR	59.21	
05075 4999	Vertical fillet welds Based On A Standard Operating Factor Of 50%			
5000	Welding, vert fillet welds, std opn factor of 50%, 3/16", welded	LF	8.49	
5050	Welding, vert fillet welds, std opn factor of 50%, 1/4", welded	LF	12.74	
5100	Welding, vert fillet welds, std opn factor of 50%, 3/8", welded	LF	21.24	
5150	Welding, vert fillet welds, std opn factor of 50%, 1/2", welded	LF	29.41	
5200	Welding, vert fillet welds, std opn factor of 50%, 5/8", welded	LF	40.32	
5250	Welding, vert fillet welds, std opn factor of 50%, 3/4", welded	LF	51.11	
5300	Welding, vert fillet welds, std opn factor of 50%, 1", welded up	LF	95.76	
05075 5999	Horizontal fillet welds Based On A Standard Operating Factor Of 50%			
6000	Welding, horiz fillet welds, std opn factor of 50%, 3/16", welded	LF	6.44	
6050	Welding, horiz fillet welds, std opn factor of 50%, 1/4", welded	LF	9.66	
6100	Welding, horiz fillet welds, std opn factor of 50%, 3/8", welded	LF	16.10	
6150	Welding, horiz fillet welds, std opn factor of 50%, 1/2", welded	LF	22.73	
6200	Welding, horiz fillet welds, std opn factor of 50%, 5/8", welded	LF	31.12	
6250	Welding, horiz fillet welds, std opn factor of 50%, 3/4", welded	LF	38.79	
6300	Welding, horiz fillet welds, std opn factor of 50%, 1", welded u	LF	77.28	

05100 Structural Metal Framing

05107 Structural Steel

Note: Prices Are Based On Astm A36 Steel With Bolted Standard Beam Connections And Shop Primed. Stock Sections Only. Material Price Includes Shop Fabrication Into Subassemblies And Delivery To Site. Includes All Connecting Bolts And Welds.

05108 0010 Anchor bolts JOC

NOTE: Includes Nut And Washer(s).

05108 0099 J-type, including nut, washer

0100	Anchor bolts, J-type, incl nut, washer, 1/2" dia, 6" long	EA	9.63	2.03
0270	Anchor bolts, J-type, for sleeve, add		3.42	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.01	
0110	Anchor bolts, J-type, incl nut, washer, 1/2" dia, 12" long	EA	10.63	2.06
0270	Anchor bolts, J-type, for sleeve, add		3.88	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.22	
0120	Anchor bolts, J-type, incl nut, washer, 1/2" dia, 18" long	EA	12.23	1.80
0270	Anchor bolts, J-type, for sleeve, add		4.74	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.68	
0122	5/8"D x 12"L, J-Type Anchor Bolt (31cm Long)w/Nut, Washer, Templat	EA	14.86	2.44
0270	Anchor bolts, J-type, for sleeve, add		5.57	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.85	
0124	5/8"D x 18"L, J-Type Anchor Bolt (46cm Long)w/Nut, Washer, Templat	EA	17.48	2.71
0270	Anchor bolts, J-type, for sleeve, add		7.03	
0290	Anchor bolts, J-type, for galvanized bolts, add		2.66	
0126	5/8"D x 24"L, J-Type Anchor Bolt (61cm Long)w/Nut, Washer, Templat	EA	20.43	2.98
0270	Anchor bolts, J-type, for sleeve, add		8.63	
0290	Anchor bolts, J-type, for galvanized bolts, add		3.52	
0130	Anchor bolts, J-type, incl nut, washer, 3/4" dia, 8" long	EA	13.41	1.96
0270	Anchor bolts, J-type, for sleeve, add		4.73	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.38	
0140	Anchor bolts, J-type, incl nut, washer, 3/4" dia, 12" long	EA	15.09	2.23
0270	Anchor bolts, J-type, for sleeve, add		5.40	
0290	Anchor bolts, J-type, for galvanized bolts, add		1.63	
0150	Anchor bolts, J-type, incl nut, washer, 3/4" dia, 18" long	EA	17.47	2.23
0270	Anchor bolts, J-type, for sleeve, add		6.45	
0290	Anchor bolts, J-type, for galvanized bolts, add		2.08	
0160	Anchor bolts, J-type, incl nut, washer, 1" dia, 12" long	EA	21.64	2.30
0270	Anchor bolts, J-type, for sleeve, add		8.63	
0290	Anchor bolts, J-type, for galvanized bolts, add		3.22	
0162	7/8"D x 12"L, J-Type Anchor Bolt (31cm Long)w/Nut, Washer, Templat	EA	27.81	3.82
0270	Anchor bolts, J-type, for sleeve, add		12.49	
0290	Anchor bolts, J-type, for galvanized bolts, add		5.54	
0164	7/8"D x 18"L, J-Type Anchor Bolt (46cm Long)w/Nut, Washer, Templat	EA	35.38	4.05
0270	Anchor bolts, J-type, for sleeve, add		16.97	
0290	Anchor bolts, J-type, for galvanized bolts, add		8.13	
0166	7/8"D x 24"L, J-Type Anchor Bolt (61cm Long)w/Nut, Washer, Templat	EA	45.73	4.82
0270	Anchor bolts, J-type, for sleeve, add		23.14	
0290	Anchor bolts, J-type, for galvanized bolts, add		11.71	
0170	Anchor bolts, J-type, incl nut, washer, 1" dia, 18" long	EA	24.89	2.36

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0270	Anchor bolts, J-type, for sleeve, add		9.79	
0290	Anchor bolts, J-type, for galvanized bolts, add		3.57	
0180	Anchor bolts, J-type, incl nut, washer, 1" dia, 24" long	EA	29.67	2.56
0270	Anchor bolts, J-type, for sleeve, add		11.60	
0290	Anchor bolts, J-type, for galvanized bolts, add		4.19	
0190	Anchor bolts, J-type, incl nut, washer, 1" dia, 36" long	EA	37.97	2.93
0270	Anchor bolts, J-type, for sleeve, add		15.17	
0290	Anchor bolts, J-type, for galvanized bolts, add		5.68	
0200	Anchor bolts, J-type, incl nut, washer, 1.5" dia, 18" long	EA	31.50	3.03
0270	Anchor bolts, J-type, for sleeve, add		11.53	
0290	Anchor bolts, J-type, for galvanized bolts, add		3.65	
0210	Anchor bolts, J-type, incl nut, washer, 1.5" dia, 24" long	EA	41.64	4.23
0270	Anchor bolts, J-type, for sleeve, add		14.59	
0290	Anchor bolts, J-type, for galvanized bolts, add		4.18	
05108 0299	L-type, including hex nuts			
0300	Anchor bolts, L-type, incl hex nuts, 3/4" dia, 12" long	EA	14.33	3.16
0310	Anchor bolts, L-type, incl hex nuts, 3/4" dia, 18" long	EA	16.69	3.79
0320	Anchor bolts, L-type, incl hex nuts, 3/4" dia, 24" long	EA	19.48	4.16
0330	Anchor bolts, L-type, incl hex nuts, 3/4" dia, 30" long	EA	22.90	4.99
0340	Anchor bolts, L-type, incl hex nuts, 3/4" dia, 36" long	EA	27.34	5.89
0341	7/8"D x 12"L, L-Type Anchor Bolt Include Hex Nuts	EA	18.43	4.19
0342	7/8"D x 18"L, L-Type Anchor Bolt Include Hex Nuts	EA	21.66	4.49
0343	7/8"D x 24"L, L-Type Anchor Bolt Include Hex Nuts	EA	25.71	5.42
0344	7/8"D x 30"L, L-Type Anchor Bolt Include Hex Nuts	EA	30.92	6.36
0345	7/8"D x 36"L, L-Type Anchor Bolt Include Hex Nuts	EA	38.31	8.00
0350	Anchor bolts, L-type, incl hex nuts, 1" dia, 12" long	EA	19.72	4.43
0360	Anchor bolts, L-type, incl hex nuts, 1" dia, 18" long	EA	23.27	5.13
0370	Anchor bolts, L-type, incl hex nuts, 1" dia, 24" long	EA	28.08	5.82
0380	Anchor bolts, L-type, incl hex nuts, 1" dia, 30" long	EA	31.14	6.39
0390	Anchor bolts, L-type, incl hex nuts, 1" dia, 36" long	EA	35.92	7.29
0400	Anchor bolts, L-type, incl hex nuts, 1" dia, 42" long	EA	39.97	8.05
0410	Anchor bolts, L-type, incl hex nuts, 1" dia, 48" long	EA	47.08	9.45
0412	1-1/8"x 18"L, L-Type Anchor Bolt Include Hex Nuts	EA	26.58	5.36
0414	1-1/8"x 24"L, L-Type Anchor Bolt Include Hex Nuts	EA	32.46	6.29
0416	1-1/8"x 30"L, L-Type Anchor Bolt Include Hex Nuts	EA	36.21	6.86
0420	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 18" long	EA	31.01	6.26
0430	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 24" long	EA	37.88	7.62
0440	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 30" long	EA	39.69	7.45
0450	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 36" long	EA	44.68	8.25
0460	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 42" long	EA	50.12	9.09
0470	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 48" long	EA	57.34	10.61
0480	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 54" long	EA	66.06	12.48
0490	Anchor bolts, L-type, incl hex nuts, 1.25" dia, 60" long	EA	77.03	14.84
0491	1-3/8"x 18"L, L-Type Anchor Bolt Include Hex Nuts	EA	33.22	6.23
0492	1-3/8"x 24"L, L-Type Anchor Bolt Include Hex Nuts	EA	42.07	7.77
0493	1-3/8"x 30"L, L-Type Anchor Bolt Include Hex Nuts	EA	45.98	8.03
0494	1-3/8"x 36"L, L-Type Anchor Bolt Include Hex Nuts	EA	50.09	8.57
0495	1-3/8"x 42"L, L-Type Anchor Bolt Include Hex Nuts	EA	56.89	9.47
0496	1-3/8"x 48"L, L-Type Anchor Bolt Include Hex Nuts	EA	65.02	10.98
0497	1-3/8"x 54"L, L-Type Anchor Bolt Include Hex Nuts	EA	74.80	12.86
0498	1-3/8"x 60"L, L-Type Anchor Bolt Include Hex Nuts	EA	87.67	15.40
0500	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 18" long	EA	36.46	7.09
0510	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 24" long	EA	43.29	7.92
0520	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 30" long	EA	49.63	9.05
0530	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 36" long	EA	54.08	9.25
0540	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 42" long	EA	59.05	9.78
0550	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 48" long	EA	67.02	11.38
0560	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 54" long	EA	77.23	13.31
0570	Anchor bolts, L-type, incl hex nuts, 1.5" dia, 60" long	EA	91.03	16.07
0580	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 18" long	EA	49.39	9.08
0590	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 24" long	EA	56.99	9.95
0600	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 30" long	EA	61.75	10.25
0610	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 36" long	EA	68.35	10.55
0620	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 42" long	EA	76.95	11.95
0630	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 48" long	EA	87.09	13.61
0640	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 54" long	EA	99.82	15.84

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0650	Anchor bolts, L-type, incl hex nuts, 1.75" dia, 60" long	EA	116.59	19.40
0660	Anchor bolts, L-type, incl hex nuts, 2" dia, 24" long	EA	67.46	11.11
0670	Anchor bolts, L-type, incl hex nuts, 2" dia, 30" long	EA	76.93	11.81
0680	Anchor bolts, L-type, incl hex nuts, 2" dia, 36" long	EA	87.62	13.54
0690	Anchor bolts, L-type, incl hex nuts, 2" dia, 42" long	EA	99.32	15.38
0700	Anchor bolts, L-type, incl hex nuts, 2" dia, 48" long	EA	110.61	16.64
0710	Anchor bolts, L-type, incl hex nuts, 2" dia, 54" long	EA	121.58	18.30
0720	Anchor bolts, L-type, incl hex nuts, 2" dia, 60" long	EA	134.25	21.50
0730	Anchor bolts, L-type, incl hex nuts, 2" dia, 66" long	EA	149.02	22.86
0740	Anchor bolts, L-type, incl hex nuts, 2" dia, 72" long	EA	167.80	26.13
05120 0009 Columns				
05120 0009 Aluminum extruded				
0010	Columns aluminum extruded, stock units, 6" dia	LF	14.97	4.15
05120 1000 Steel Members				
05120 1399 Steel pipe, standard weight				
1400	Columns, steel pipe, std weight, 1/2" to 5" dia	TON	2,508.41	329.67
4001	For Astm A441 High Strength Steel Add		167.48	
4002	For Astm A242 Type 2 High Strength Steel Add		167.48	
4401	For Masonry End Bearing Add		124.48	
4403	For 3 Thru 6 Story Building Add For New Construction		46.69	
4404	For 7 Thru 15 Story Building AddFor New Construction		117.86	
4405	For Over 15 Story Building Add For New Construction		192.97	
7800	Structural steel, columns, for galvanizing, add		628.04	
7810	Structural steel, columns, for touch-up of galvanizing, add		187.66	
1450	Columns, steel pipe, std weight, 6" to 12" dia	TON	2,561.23	288.56
4001	For Astm A441 High Strength Steel Add		175.85	
4002	For Astm A242 Type 2 High Strength Steel Add		175.85	
4401	For Masonry End Bearing Add		108.92	
4403	For 3 Thru 6 Story Building Add For New Construction		41.04	
4404	For 7 Thru 15 Story Building AddFor New Construction		103.42	
4405	For Over 15 Story Building Add For New Construction		169.21	
7800	Structural steel, columns, for galvanizing, add		659.45	
7810	Structural steel, columns, for touch-up of galvanizing, add		182.52	
05120 1499 Steel pipe, extra strong				
1500	Columns, steel pipe, extra strong, no conc, 3" to 5" dia	TON	2,536.35	295.75
4001	For Astm A441 High Strength Steel Add		173.06	
4002	For Astm A242 Type 2 High Strength Steel Add		173.06	
4401	For Masonry End Bearing Add		111.93	
4403	For 3 Thru 6 Story Building Add For New Construction		42.12	
4404	For 7 Thru 15 Story Building AddFor New Construction		106.20	
4405	For Over 15 Story Building Add For New Construction		173.78	
7800	Structural steel, columns, for galvanizing, add		648.98	
7810	Structural steel, columns, for touch-up of galvanizing, add		182.78	
1600	Columns, steel pipe, extra strong, no conc, 6" to 12" dia	TON	2,357.03	220.92
4001	For Astm A441 High Strength Steel Add		154.45	
4002	For Astm A242 Type 2 High Strength Steel Add		154.45	
4401	For Masonry End Bearing Add		127.91	
4403	For 3 Thru 6 Story Building Add For New Construction		47.87	
4404	For 7 Thru 15 Story Building AddFor New Construction		120.93	
4405	For Over 15 Story Building Add For New Construction		198.07	
7800	Structural steel, columns, for galvanizing, add		579.20	
7810	Structural steel, columns, for touch-up of galvanizing, add		181.81	
05120 1649 Steel pipe, double-extra strong				
1650	Columns, steel pipe, 2" to 5" dia, double-extra strong	TON	2,741.02	329.67
4001	For Astm A441 High Strength Steel Add		186.09	
4002	For Astm A242 Type 2 High Strength Steel Add		186.09	
4401	For Masonry End Bearing Add		124.48	
4403	For 3 Thru 6 Story Building Add For New Construction		46.81	
4404	For 7 Thru 15 Story Building AddFor New Construction		118.04	
4405	For Over 15 Story Building Add For New Construction		193.20	
7800	Structural steel, columns, for galvanizing, add		697.82	
7810	Structural steel, columns, for touch-up of galvanizing, add		199.29	
1660	Columns, steel pipe, 6" to 8" dia, double-extra strong	TON	2,433.21	177.45
4001	For Astm A441 High Strength Steel Add		176.78	
4002	For Astm A242 Type 2 High Strength Steel Add		176.78	
4401	For Masonry End Bearing Add		67.03	
4403	For 3 Thru 6 Story Building Add For New Construction		25.68	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4404	For 7 Thru 15 Story Building AddFor New Construction		64.33	
4405	For Over 15 Story Building Add For New Construction		104.99	
7800	Structural steel, columns, for galvanizing, add		662.93	
7810	Structural steel, columns, for touch-up of galvanizing, add		155.18	
05120 2010	Mscellaneous Steel			
2011	1/2"-5" Diameter Extra Strong	TON	3,624.67	
4001	For Astm A441 High Strength Steel Add		177.02	
4002	For Astm A242 Type 2 High Strength Steel Add		177.02	
4401	For Masonry End Bearing Add		423.59	
4403	For 3 Thru 6 Story Building Add For New Construction		156.42	
4404	For 7 Thru 15 Story Building AddFor New Construction		397.12	
4405	For Over 15 Story Building Add For New Construction		651.71	
7800	Structural steel, columns, for galvanizing, add		663.82	
7810	Structural steel, columns, for touch-up of galvanizing, add		393.03	
2012	6"-12" Diameter Extra Strong	TON	2,288.18	
4001	For Astm A441 High Strength Steel Add		157.95	
4002	For Astm A242 Type 2 High Strength Steel Add		157.95	
4401	For Masonry End Bearing Add		94.13	
4403	For 3 Thru 6 Story Building Add For New Construction		35.50	
4404	For 7 Thru 15 Story Building AddFor New Construction		89.43	
4405	For Over 15 Story Building Add For New Construction		146.30	
7800	Structural steel, columns, for galvanizing, add		592.33	
7810	Structural steel, columns, for touch-up of galvanizing, add		161.47	
05120 2250	Structural Tubing- Square			
2251	2"x2" Weight Range 4-6 LB/LF	TON	5,776.99	
4001	For Astm A441 High Strength Steel Add		236.25	
4002	For Astm A242 Type 2 High Strength Steel Add		236.25	
4401	For Masonry End Bearing Add		847.17	
4403	For 3 Thru 6 Story Building Add For New Construction		312.11	
4404	For 7 Thru 15 Story Building AddFor New Construction		793.05	
4405	For Over 15 Story Building Add For New Construction		1,301.95	
7800	Structural steel, columns, for galvanizing, add		885.93	
7810	Structural steel, columns, for touch-up of galvanizing, add		712.43	
2252	2.5"x2.5" Wt. Range 5-8LB/LF	TON	5,125.32	
4001	For Astm A441 High Strength Steel Add		236.25	
4002	For Astm A242 Type 2 High Strength Steel Add		236.25	
4401	For Masonry End Bearing Add		651.67	
4403	For 3 Thru 6 Story Building Add For New Construction		240.42	
4404	For 7 Thru 15 Story Building AddFor New Construction		610.59	
4405	For Over 15 Story Building Add For New Construction		1,002.18	
7800	Structural steel, columns, for galvanizing, add		885.93	
7810	Structural steel, columns, for touch-up of galvanizing, add		582.10	
2253	3"x3" Weight Range 6-11 LB/LF	TON	4,255.94	
4001	For Astm A441 High Strength Steel Add		207.90	
4002	For Astm A242 Type 2 High Strength Steel Add		207.90	
4401	For Masonry End Bearing Add		497.17	
4403	For 3 Thru 6 Story Building Add For New Construction		183.59	
4404	For 7 Thru 15 Story Building AddFor New Construction		466.10	
4405	For Over 15 Story Building Add For New Construction		764.92	
7800	Structural steel, columns, for galvanizing, add		779.62	
7810	Structural steel, columns, for touch-up of galvanizing, add		461.38	
2254	3.5"x3.5" Weight Range 8-13LB/LF	TON	3,951.61	
4001	For Astm A441 High Strength Steel Add		203.17	
4002	For Astm A242 Type 2 High Strength Steel Add		203.17	
4401	For Masonry End Bearing Add		423.59	
4403	For 3 Thru 6 Story Building Add For New Construction		156.58	
4404	For 7 Thru 15 Story Building AddFor New Construction		397.38	
4405	For Over 15 Story Building Add For New Construction		652.04	
7800	Structural steel, columns, for galvanizing, add		761.90	
7810	Structural steel, columns, for touch-up of galvanizing, add		409.37	
2256	5"x5" Weight Range 12-30 LB/LF	TON	2,643.20	
4001	For Astm A441 High Strength Steel Add		154.98	
4002	For Astm A242 Type 2 High Strength Steel Add		154.98	
4401	For Masonry End Bearing Add		211.79	
4403	For 3 Thru 6 Story Building Add For New Construction		78.63	
4404	For 7 Thru 15 Story Building AddFor New Construction		199.22	
4405	For Over 15 Story Building Add For New Construction		326.68	
7800	Structural steel, columns, for galvanizing, add		581.17	
7810	Structural steel, columns, for touch-up of galvanizing, add		238.06	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2258	7"x7" Weight Range 17-42 LB/LF	TON	2,376.08	
4001	For Astm A441 High Strength Steel Add		157.81	
4002	For Astm A242 Type 2 High Strength Steel Add		157.81	
4401	For Masonry End Bearing Add		121.02	
4403	For 3 Thru 6 Story Building Add For New Construction		45.36	
4404	For 7 Thru 15 Story Building AddFor New Construction		114.53	
4405	For Over 15 Story Building Add For New Construction		187.54	
7800	Structural steel, columns, for galvanizing, add		591.80	
7810	Structural steel, columns, for touch-up of galvanizing, add		179.32	
2262	12"x12" Weight Range 40-80 LB/LF	TON	2,207.99	
4001	For Astm A441 High Strength Steel Add		157.81	
4002	For Astm A242 Type 2 High Strength Steel Add		157.81	
4401	For Masonry End Bearing Add		70.60	
4403	For 3 Thru 6 Story Building Add For New Construction		26.87	
4404	For 7 Thru 15 Story Building AddFor New Construction		67.47	
4405	For Over 15 Story Building Add For New Construction		110.22	
7800	Structural steel, columns, for galvanizing, add		591.80	
7810	Structural steel, columns, for touch-up of galvanizing, add		145.70	
2263	14"x14" Weight Range 57-90 LB/LF	TON	2,432.61	
4001	For Astm A441 High Strength Steel Add		179.55	
4002	For Astm A242 Type 2 High Strength Steel Add		179.55	
4401	For Masonry End Bearing Add		56.48	
4403	For 3 Thru 6 Story Building Add For New Construction		21.83	
4404	For 7 Thru 15 Story Building AddFor New Construction		54.51	
4405	For Over 15 Story Building Add For New Construction		88.84	
7800	Structural steel, columns, for galvanizing, add		673.31	
7810	Structural steel, columns, for touch-up of galvanizing, add		149.87	
2264	16"x16" Weight Range 65-105LB/LF	TON	2,468.10	
4001	For Astm A441 High Strength Steel Add		183.33	
4002	For Astm A242 Type 2 High Strength Steel Add		183.33	
4401	For Masonry End Bearing Add		52.95	
4403	For 3 Thru 6 Story Building Add For New Construction		20.56	
4404	For 7 Thru 15 Story Building AddFor New Construction		51.25	
4405	For Over 15 Story Building Add For New Construction		83.48	
7800	Structural steel, columns, for galvanizing, add		687.48	
7810	Structural steel, columns, for touch-up of galvanizing, add		149.88	
05120 2300	Structural Tube			
2303	<= 6"W Strl Tube, Light Rect Sect A-36 Misc Steel Items	TON	1,942.62	221.63
4001	For Astm A441 High Strength Steel Add		119.84	
4002	For Astm A242 Type 2 High Strength Steel Add		119.84	
4401	For Masonry End Bearing Add		133.37	
4403	For 3 Thru 6 Story Building Add For New Construction		49.65	
4404	For 7 Thru 15 Story Building AddFor New Construction		125.68	
4405	For Over 15 Story Building Add For New Construction		206.00	
7800	Structural steel, columns, for galvanizing, add		449.42	
7810	Structural steel, columns, for touch-up of galvanizing, add		163.82	
2304	<= 6"W Strl Tube, Heavy Rect Sect A-36 Misc Steel Items	TON	1,720.08	132.11
4001	For Astm A441 High Strength Steel Add		116.10	
4002	For Astm A242 Type 2 High Strength Steel Add		116.10	
4401	For Masonry End Bearing Add		80.65	
4403	For 3 Thru 6 Story Building Add For New Construction		30.30	
4404	For 7 Thru 15 Story Building AddFor New Construction		76.44	
4405	For Over 15 Story Building Add For New Construction		125.12	
7800	Structural steel, columns, for galvanizing, add		435.37	
7810	Structural steel, columns, for touch-up of galvanizing, add		126.33	
05120 2349	Structural tubing			
2350	Columns, 4" x 3"/2", 6-13 PLF, A500GrB, rect, strl tubing	TON	2,391.49	237.95
4001	For Astm A441 High Strength Steel Add		152.59	
4002	For Astm A242 Type 2 High Strength Steel Add		152.59	
4401	For Masonry End Bearing Add		145.23	
4403	For 3 Thru 6 Story Building Add For New Construction		54.20	
4404	For 7 Thru 15 Story Building AddFor New Construction		137.07	
4405	For Over 15 Story Building Add For New Construction		224.59	
7800	Structural steel, columns, for galvanizing, add		572.22	
7810	Structural steel, columns, for touch-up of galvanizing, add		192.19	
2351	3"x2" Weight Range 5-7 LB/LF	TON	5,118.66	1,063.38
4001	For Astm A441 High Strength Steel Add		236.25	
4002	For Astm A242 Type 2 High Strength Steel Add		236.25	
4401	For Masonry End Bearing Add		649.67	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4403	For 3 Thru 6 Story Building Add For New Construction		239.69	
4404	For 7 Thru 15 Story Building AddFor New Construction		608.72	
4405	For Over 15 Story Building Add For New Construction		999.12	
7800	Structural steel, columns, for galvanizing, add		885.93	
7810	Structural steel, columns, for touch-up of galvanizing, add		580.77	
2353	5"x4", 2" Weight Range 8-20 LB/LF	TON	3,480.96	462.50
4001	For Astm A441 High Strength Steel Add		203.17	
4002	For Astm A242 Type 2 High Strength Steel Add		203.17	
4401	For Msonry End Bearing Add		282.39	
4403	For 3 Thru 6 Story Building Add For New Construction		104.81	
4404	For 7 Thru 15 Story Building AddFor New Construction		265.60	
4405	For Over 15 Story Building Add For New Construction		435.54	
7800	Structural steel, columns, for galvanizing, add		761.90	
7810	Structural steel, columns, for touch-up of galvanizing, add		315.24	
2355	7"x5", 4 ", 3" Weight 12-35 LB/LF	TON	2,812.26	308.07
4001	For Astm A441 High Strength Steel Add		174.82	
4002	For Astm A242 Type 2 High Strength Steel Add		174.82	
4401	For Msonry End Bearing Add		188.09	
4403	For 3 Thru 6 Story Building Add For New Construction		70.06	
4404	For 7 Thru 15 Story Building AddFor New Construction		177.30	
4405	For Over 15 Story Building Add For New Construction		290.59	
7800	Structural steel, columns, for galvanizing, add		655.59	
7810	Structural steel, columns, for touch-up of galvanizing, add		234.66	
2358	12"x6", 4 ", 2" Wt. 17-76 LB/LF	TON	2,569.92	154.12
4001	For Astm A441 High Strength Steel Add		180.49	
4002	For Astm A242 Type 2 High Strength Steel Add		180.49	
4401	For Msonry End Bearing Add		94.13	
4403	For 3 Thru 6 Story Building Add For New Construction		35.64	
4404	For 7 Thru 15 Story Building AddFor New Construction		89.66	
4405	For Over 15 Story Building Add For New Construction		146.59	
7800	Structural steel, columns, for galvanizing, add		676.85	
7810	Structural steel, columns, for touch-up of galvanizing, add		175.56	
2359	14"x10", 6", 4" Wt. 29-76 LB/LF	TON	2,538.55	138.72
4001	For Astm A441 High Strength Steel Add		180.49	
4002	For Astm A242 Type 2 High Strength Steel Add		180.49	
4401	For Msonry End Bearing Add		84.72	
4403	For 3 Thru 6 Story Building Add For New Construction		32.19	
4404	For 7 Thru 15 Story Building AddFor New Construction		80.87	
4405	For Over 15 Story Building Add For New Construction		132.16	
7800	Structural steel, columns, for galvanizing, add		676.85	
7810	Structural steel, columns, for touch-up of galvanizing, add		169.29	
2360	Columns, 6" x 4"/3"/2", 9-29 PLF, A500GrB, rect, strl tubing	TON	2,039.38	158.57
4001	For Astm A441 High Strength Steel Add		137.33	
4002	For Astm A242 Type 2 High Strength Steel Add		137.33	
4401	For Msonry End Bearing Add		96.82	
4403	For 3 Thru 6 Story Building Add For New Construction		36.36	
4404	For 7 Thru 15 Story Building AddFor New Construction		91.74	
4405	For Over 15 Story Building Add For New Construction		150.17	
7800	Structural steel, columns, for galvanizing, add		515.00	
7810	Structural steel, columns, for touch-up of galvanizing, add		150.38	
2361	16"x12", 8", 4" Wt. 40-90 LB/LF	TON	2,449.76	106.69
4001	For Astm A441 High Strength Steel Add		178.60	
4002	For Astm A242 Type 2 High Strength Steel Add		178.60	
4401	For Msonry End Bearing Add		65.17	
4403	For 3 Thru 6 Story Building Add For New Construction		25.01	
4404	For 7 Thru 15 Story Building AddFor New Construction		62.61	
4405	For Over 15 Story Building Add For New Construction		102.15	
7800	Structural steel, columns, for galvanizing, add		669.76	
7810	Structural steel, columns, for touch-up of galvanizing, add		155.07	
2362	18"x6"Weight Range 48-76 LB/LF	TON	2,408.80	115.56
4001	For Astm A441 High Strength Steel Add		173.88	
4002	For Astm A242 Type 2 High Strength Steel Add		173.88	
4401	For Msonry End Bearing Add		70.60	
4403	For 3 Thru 6 Story Building Add For New Construction		26.97	
4404	For 7 Thru 15 Story Building AddFor New Construction		67.63	
4405	For Over 15 Story Building Add For New Construction		110.42	
7800	Structural steel, columns, for galvanizing, add		652.04	
7810	Structural steel, columns, for touch-up of galvanizing, add		155.74	
2363	20"x12", 8", 4" Wt. 48-105 LB/LF	TON	2,479.86	92.57
4001	For Astm A441 High Strength Steel Add		183.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4002	For Astm A242 Type 2 High Strength Steel Add		183.33	
4401	For Masonry End Bearing Add		56.48	
4403	For 3 Thru 6 Story Building Add For New Construction		21.85	
4404	For 7 Thru 15 Story Building AddFor New Construction		54.55	
4405	For Over 15 Story Building Add For New Construction		88.89	
7800	Structural steel, columns, for galvanizing, add		687.48	
7810	Structural steel, columns, for touch-up of galvanizing, add		152.23	
2370	Columns, 8" x 6" / 4" / 3" / 2", 11-42 PLF, A500GrB, rect, strl tubing	TON	1,848.64	158.57
4001	For Astm A441 High Strength Steel Add		122.07	
4002	For Astm A242 Type 2 High Strength Steel Add		122.07	
4401	For Masonry End Bearing Add		96.82	
4403	For 3 Thru 6 Story Building Add For New Construction		36.26	
4404	For 7 Thru 15 Story Building AddFor New Construction		91.59	
4405	For Over 15 Story Building Add For New Construction		149.98	
7800	Structural steel, columns, for galvanizing, add		457.77	
7810	Structural steel, columns, for touch-up of galvanizing, add		140.84	
2380	Columns, 10" x 6" / 4" / 2", 15-50 PLF, A500GrB, rect, strl tubing	TON	1,767.96	118.86
4001	For Astm A441 High Strength Steel Add		122.07	
4002	For Astm A242 Type 2 High Strength Steel Add		122.07	
4401	For Masonry End Bearing Add		72.62	
4403	For 3 Thru 6 Story Building Add For New Construction		27.39	
4404	For 7 Thru 15 Story Building AddFor New Construction		68.99	
4405	For Over 15 Story Building Add For New Construction		112.87	
7800	Structural steel, columns, for galvanizing, add		457.77	
7810	Structural steel, columns, for touch-up of galvanizing, add		124.71	
2400	Columns, light section, 5" to 6" wide, A500GrB, rect, strl tubin	TON	2,510.15	237.28
4001	For Astm A441 High Strength Steel Add		158.17	
4002	For Astm A242 Type 2 High Strength Steel Add		158.17	
4401	For Masonry End Bearing Add		159.89	
4403	For 3 Thru 6 Story Building Add For New Construction		59.62	
4404	For 7 Thru 15 Story Building AddFor New Construction		150.82	
4405	For Over 15 Story Building Add For New Construction		247.15	
7800	Structural steel, columns, for galvanizing, add		593.15	
7810	Structural steel, columns, for touch-up of galvanizing, add		205.45	
2800	Columns, heavy section, 5" to 6" wide, A500GrB, rect, strl tubin	TON	2,349.81	132.93
4001	For Astm A441 High Strength Steel Add		173.06	
4002	For Astm A242 Type 2 High Strength Steel Add		173.06	
4401	For Masonry End Bearing Add		55.97	
4403	For 3 Thru 6 Story Building Add For New Construction		21.60	
4404	For 7 Thru 15 Story Building AddFor New Construction		53.96	
4405	For Over 15 Story Building Add For New Construction		87.98	
7800	Structural steel, columns, for galvanizing, add		648.98	
7810	Structural steel, columns, for touch-up of galvanizing, add		145.47	
3010	Columns, strl tubing, A500GrB, sq, 4" x 4", 10-22 PLF	TON	2,414.75	237.95
4001	For Astm A441 High Strength Steel Add		154.45	
4002	For Astm A242 Type 2 High Strength Steel Add		154.45	
4401	For Masonry End Bearing Add		145.23	
4403	For 3 Thru 6 Story Building Add For New Construction		54.22	
4404	For 7 Thru 15 Story Building AddFor New Construction		137.09	
4405	For Over 15 Story Building Add For New Construction		224.62	
7800	Structural steel, columns, for galvanizing, add		579.20	
7810	Structural steel, columns, for touch-up of galvanizing, add		193.35	
3050	Columns, strl tubing, A500GrB, sq, 6" x 6", 15-35 PLF	TON	2,253.38	158.57
4001	For Astm A441 High Strength Steel Add		154.45	
4002	For Astm A242 Type 2 High Strength Steel Add		154.45	
4401	For Masonry End Bearing Add		96.82	
4403	For 3 Thru 6 Story Building Add For New Construction		36.47	
4404	For 7 Thru 15 Story Building AddFor New Construction		91.91	
4405	For Over 15 Story Building Add For New Construction		150.39	
7800	Structural steel, columns, for galvanizing, add		579.20	
7810	Structural steel, columns, for touch-up of galvanizing, add		161.08	
3100	Columns, strl tubing, A500GrB, sq, 8" x 8", 20-60 PLF	TON	2,639.51	158.57
4001	For Astm A441 High Strength Steel Add		185.34	
4002	For Astm A242 Type 2 High Strength Steel Add		185.34	
4401	For Masonry End Bearing Add		96.82	
4403	For 3 Thru 6 Story Building Add For New Construction		36.66	
4404	For 7 Thru 15 Story Building AddFor New Construction		92.22	
4405	For Over 15 Story Building Add For New Construction		150.77	
7800	Structural steel, columns, for galvanizing, add		695.03	
7810	Structural steel, columns, for touch-up of galvanizing, add		180.39	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3150	Columns, strl tubing, A500GrB, sq, 10" x 10", 33-77 PLF	TON	2,558.83	118.86
4001	For Astm A441 High Strength Steel Add		185.34	
4002	For Astm A242 Type 2 High Strength Steel Add		185.34	
4401	For Masonry End Bearing Add		72.62	
4403	For 3 Thru 6 Story Building Add For New Construction		27.78	
4404	For 7 Thru 15 Story Building Add For New Construction		69.63	
4405	For Over 15 Story Building Add For New Construction		113.66	
7800	Structural steel, columns, for galvanizing, add		695.03	
7810	Structural steel, columns, for touch-up of galvanizing, add		164.25	
3300	Columns, strl tubing, light section, A500GrB, sq, 4" to 6"	TON	2,460.30	271.98
4001	For Astm A441 High Strength Steel Add		154.45	
4002	For Astm A242 Type 2 High Strength Steel Add		154.45	
4401	For Masonry End Bearing Add		158.90	
4403	For 3 Thru 6 Story Building Add For New Construction		59.23	
4404	For 7 Thru 15 Story Building Add For New Construction		149.85	
4405	For Over 15 Story Building Add For New Construction		245.57	
7800	Structural steel, columns, for galvanizing, add		579.20	
7810	Structural steel, columns, for touch-up of galvanizing, add		202.46	
3600	Columns, strl tubing, heavy section, A500GrB, sq, 4" to 6"	TON	2,233.50	166.30
4001	For Astm A441 High Strength Steel Add		163.76	
4002	For Astm A242 Type 2 High Strength Steel Add		163.76	
4401	For Masonry End Bearing Add		55.97	
4403	For 3 Thru 6 Story Building Add For New Construction		21.54	
4404	For 7 Thru 15 Story Building Add For New Construction		53.87	
4405	For Over 15 Story Building Add For New Construction		87.86	
7800	Structural steel, columns, for galvanizing, add		614.09	
7810	Structural steel, columns, for touch-up of galvanizing, add		139.66	
05125 2400	Miscellaneous Structural Shapes			
2401	Msc Strl Shapes, Steel Angle A-36 Structural Steel	TON	3,037.90	972.48
2402	Msc Strl Shapes, Steel Plate A-36 Structural Steel	TON	2,719.35	236.08
05125 2550	Connection And Stiffener Plates			
2552	3/16" Plate Wt. 8.71 LB/SF	TON	4,887.96	
2554	5/16" Plate Wt. 13.81 LB/SF	TON	3,779.96	
2557	9/16" Plate Wt. 24.02 LB/SF	TON	3,779.96	
2558	5/8" Plate Wt. 26.58 LB/SF	TON	3,779.96	
2561	7/8" Plate Wt. 36.78 LB/SF	TON	3,543.71	
05125 2700	Field Welding			
2713	5/16"Vert Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	8.95	
2715	7/16"Vert Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	12.84	
2717	9/16"Vert Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	17.38	
2721	7/8"Vert Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	36.42	
2733	5/16"Horz Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	6.79	
2735	7/16"Horz Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	9.80	
2737	9/16"Horz Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	13.45	
2741	7/8"Horz Fillet Welds, Welded Up Based on Std Oper Factor of 50%	LF	26.91	
05130 0010	Lightweight framing			
05130 0399	Angle framing			
0400	Lightweight framing, angle, 4" & larger	LB	1.37	0.20
0450	Lightweight framing, angle, less than 4"	LB	1.71	0.36
0460	Lightweight framing, angle, 1/2" x 1/2" x 1/8"	LF	5.35	2.36
0462	Lightweight framing, angle, 3/4" x 3/4" x 1/8"	LF	7.00	2.96
0464	Lightweight framing, angle, 1" x 1" x 1/8"	LF	8.43	3.39
0466	Lightweight framing, angle, 1.25" x 1.25" x 3/16"	LF	10.43	3.34
0468	Lightweight framing, angle, 1.5" x 1.5" x 3/16"	LF	12.10	5.15
0470	Lightweight framing, angle, 2" x 2" x 1/4"	LF	14.64	5.88
0472	Lightweight framing, angle, 2.5" x 2.5" x 1/4"	LF	18.42	7.04
0474	Lightweight framing, angle, 3" x 2" x 3/8"	LF	21.76	7.94
0476	Lightweight framing, angle, 3" x 3" x 3/8"	LF	25.28	9.23
05130 0599	Channel framing			
0600	Lightweight framing, channel, 8" & larger	LB	1.37	0.20
0650	Lightweight framing, channel, less than 8"	LB	1.69	0.41
0660	Lightweight framing, channel, C2 x 1.78	LF	10.79	4.76
0662	Lightweight framing, channel, C3 x 4.1	LF	17.12	7.85
0664	Lightweight framing, channel, C4 x 5.4	LF	21.18	9.83
0666	Lightweight framing, channel, C5 x 6.7	LF	25.00	11.33
0668	Lightweight framing, channel, C6 x 8.2	LF	27.20	12.14

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0670	Lightweight framing, channel, C7 x 9.8	LF	35.88	16.31
0672	Lightweight framing, channel, C8 x 11.5	LF	40.12	17.94
05130 0709	Structural bar tee			
0710	Lightweight framing, structural bar tee, 3/4" x 3/4" x 1/8"	LF	7.65	3.43
0712	Lightweight framing, structural bar tee, 1" x 1" x 1/8"	LF	9.15	4.03
0714	Lightweight framing, structural bar tee, 1.5" x 1.5" x 1/4"	LF	11.44	4.03
0716	Lightweight framing, structural bar tee, 2" x 2" x 1/4"	LF	14.58	5.32
0718	Lightweight framing, structural bar tee, 2.5" x 2.5" x 3/8"	LF	19.73	6.31
0720	Lightweight framing, structural bar tee, 3" x 3" x 3/8"	LF	24.69	8.11
05130 0729	Structural zee			
0730	Lightweight framing, structural zee, 1.25" x 1.75" x 1.75"	LF	9.79	3.39
0732	Lightweight framing, 2-11/16" x 3" x 2-11/16", structural zee	LF	10.86	3.13
0734	Lightweight framing, structural zee, 3-1/16" x 4" x 3-1/16"	LF	10.27	2.53
0736	Lightweight framing, structural zee, 3.25" x 5" x 3.25"	LF	10.95	2.19
0738	Lightweight framing, structural zee, 3.5" x 6" x 3.5"	LF	10.87	1.89
05130 0739	Junior beam			
0740	Lightweight framing, junior beam 3"	LF	17.98	7.59
0742	Lightweight framing, junior beam 4"	LF	21.21	8.54
0744	Lightweight framing, junior beam 5"	LF	24.33	9.23
0746	Lightweight framing, junior beam 6"	LF	27.80	10.77
0748	Lightweight framing, junior beam 7"	LF	31.76	10.68
0750	Lightweight framing, junior beam 8"	LF	35.90	12.74
05130 1899	Expanded metal			
1900	Lightweight framing, 1/4"-20 ga, 4' x 8' shts, for hangers, exp	SF	2.35	0.88
1910	Lightweight framing, 1/4"-18 ga, 4' x 8' shts, for hangers, exp	SF	2.64	0.99
1920	Lightweight framing, 1/2"-18 ga, 4' x 8' shts, for hangers, exp	SF	1.70	0.47
1930	Lightweight framing, 1/2"-16 ga, 4' x 8' shts, for hangers, exp	SF	1.79	0.51
05130 1999	Lintel, 12 gage formed steel			
2000	Ltwt framing, 3.5" x 2'-6" long, lintel, 12 ga cold formed stl	EA	20.04	
2003	Unit Bracing Aluminum Angle 1-1/2"x1-1/2"x1/4"	LF	10.00	
2004	Filler Panel .040 Aluminum	SF	9.20	
2010	Ltwt framing, 3.5" x 4'-6" long, lintel, 12 ga cold formed stl	EA	25.60	
05130 2019	Lintel, 10 gage formed steel			
2020	Ltwt framing, 4.5" x 3.5" x 5'-0" long, lintel, 10 ga cold	EA	33.50	
2030	Ltwt framing, 4.5" x 3.5" x 9'-0" long, lintel, 10 ga cold	EA	49.13	
05132 0009	Lintels			
05132 0009	Plain steel angles			
0010	Lintels, plain steel angles	LB	1.11	
0125	Lintels, plain steel angles, 4" x 3.5" x 3/8"	LF	9.58	
0130	Lintels, plain steel angles, 4" x 4" x 3/8"	LF	10.31	
0135	Lintels, plain steel angles, 5" x 3.5" x 3/8"	LF	11.03	
0140	Lintels, plain steel angles, 6" x 3.5" x 3/8"	LF	12.27	
0145	Lintels, plain steel angles, 6" x 4" x 1/2"	LF	16.93	
0310	Lintels, plain steel angles, 3" x 3" x 1/4"	LF	5.15	
0315	Lintels, plain steel angles, 3.5" x 3" x 1/4"	LF	5.65	
0320	Lintels, plain steel angles, 4" x 3" x 3/8"	LF	8.94	
05132 0509	Built-up angle and plate			
0510	Lintels, plain steel angles, built-up angle & plate-minimum	LB	1.48	
1204	For Gavanized Steel, Add		0.58	
0520	Lintels, plain steel angles, built-up angle & plate-maximum	LB	1.67	
1204	For Gavanized Steel, Add		0.65	
05134 0010	Plates			
05134 0010	Structural steel plates			
0050	Plates, steel, 1/8" thick, 48"-60" widths, 10'-60' lengths	TON	930.43	
0100	Plates, steel, 1/4" thick, 48"-60" widths, 10'-60' lengths	TON	862.98	
0300	Plates, steel, 3/8" thick, 48"-60" widths, 10'-60' lengths	TON	849.02	
0400	Plates, steel, 1/2" thick, 48"-60" widths, 10'-60' lengths	TON	781.56	
0450	Plates, steel, 3/4" thick, 48"-60" widths, 10'-60' lengths	TON	909.21	
0500	Plates, steel, 1" thick, 48"-60" widths, 10'-60' lengths	TON	781.56	
05134 1299	Galvanized steel backing plates			
1300	Plates, steel, backing plate, galv, 30" x 48", 3/16" thick	EA	122.56	8.00
1310	Plates, steel, backing plate, galv, 48" x 48", 1/4" thick	EA	221.36	8.47
1320	Plates, steel, backing plate, galv, 14" x 16", 3/8" thick	EA	63.78	10.40

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
05140 0010	Steel cutting			
0100	Steel cutting, hand burning, stl to 1/2" thick, w/ prep	LF	6.86	
05150 0010	Structural steel members			
05150 8209	Wshapes			
8210	Structural steel members, <=30 PLF, spans 10' to 45', W shapes	TON	2,075.14	
8500	Strl steel members, for ASTM A441 high strength steel, add		159.10	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		318.21	
8520	Strl steel members, for galvanizing, add		477.31	
8540	Strl steel members, for masonry end bearing, add		145.23	
8560	Strl steel members, for 3 thru 6 story structure, add		132.80	
8570	Strl steel members, for 7 thru 15 story structure, add		233.79	
8580	Strl steel members, for over 15 story structure, add		318.86	
8220	Structural steel members, 31-65 PLF, spans 10' to 45', W shapes	TON	1,847.48	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		96.82	
8560	Strl steel members, for 3 thru 6 story structure, add		111.74	
8570	Strl steel members, for 7 thru 15 story structure, add		192.98	
8580	Strl steel members, for over 15 story structure, add		258.98	
8230	Structural steel members, 66-100 PLF, spans 10' to 45', W shapes	TON	1,562.19	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		31.12	
8560	Strl steel members, for 3 thru 6 story structure, add		84.33	
8570	Strl steel members, for 7 thru 15 story structure, add		139.50	
8580	Strl steel members, for over 15 story structure, add		180.08	
8240	Structural steel members, 101-300 PLF, spans 10' to 45', W	TON	1,377.74	
8500	Strl steel members, for ASTM A441 high strength steel, add		132.59	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		265.17	
8520	Strl steel members, for galvanizing, add		397.76	
8540	Strl steel members, for masonry end bearing, add		15.56	
8560	Strl steel members, for 3 thru 6 story structure, add		72.00	
8570	Strl steel members, for 7 thru 15 story structure, add		117.48	
8580	Strl steel members, for over 15 story structure, add		149.70	
05150 8249	Channels			
8250	Structural steel members, channels, C & MC, 0-10 PLF	TON	2,492.95	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		290.46	
8560	Strl steel members, for 3 thru 6 story structure, add		182.74	
8570	Strl steel members, for 7 thru 15 story structure, add		334.98	
8580	Strl steel members, for over 15 story structure, add		471.98	
8260	Structural steel members, channels, C & MC, 11-20 PLF	TON	1,942.55	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		145.23	
8560	Strl steel members, for 3 thru 6 story structure, add		126.17	
8570	Strl steel members, for 7 thru 15 story structure, add		223.18	
8580	Strl steel members, for over 15 story structure, add		305.60	
8270	Structural steel members, channels, C & MC, 21-58 PLF	TON	1,781.76	
8500	Strl steel members, for ASTM A441 high strength steel, add		141.87	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		283.74	
8520	Strl steel members, for galvanizing, add		425.60	
8540	Strl steel members, for masonry end bearing, add		108.92	
8560	Strl steel members, for 3 thru 6 story structure, add		110.87	
8570	Strl steel members, for 7 thru 15 story structure, add		193.37	
8580	Strl steel members, for over 15 story structure, add		261.68	
05150 8279	Angles			
8280	Structural steel members, angles, 0-10 PLF	TON	1,718.72	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		58.19	
8560	Strl steel members, for 3 thru 6 story structure, add		97.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8570	Strl steel members, for 7 thru 15 story structure, add		164.65	
8580	Strl steel members, for over 15 story structure, add		216.49	
8290	Structural steel members, angles, 11-20 PLF	TON	1,555.44	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		29.10	
8560	Strl steel members, for 3 thru 6 story structure, add		83.59	
8570	Strl steel members, for 7 thru 15 story structure, add		138.01	
8580	Strl steel members, for over 15 story structure, add		177.85	
8300	Structural steel members, angles, 21-58 PLF	TON	1,504.68	
8500	Strl steel members, for ASTM A441 high strength steel, add		143.19	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		286.39	
8520	Strl steel members, for galvanizing, add		429.58	
8540	Strl steel members, for masonry end bearing, add		21.82	
8560	Strl steel members, for 3 thru 6 story structure, add		79.60	
8570	Strl steel members, for 7 thru 15 story structure, add		130.56	
8580	Strl steel members, for over 15 story structure, add		167.20	
05150 8309 Tees				
8310	Structural steel members, tees, WT, MF, ST, 0-30 PLF	TON	2,075.14	
8500	Strl steel members, for ASTM A441 high strength steel, add		159.10	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		318.21	
8520	Strl steel members, for galvanizing, add		477.31	
8540	Strl steel members, for masonry end bearing, add		145.23	
8560	Strl steel members, for 3 thru 6 story structure, add		132.80	
8570	Strl steel members, for 7 thru 15 story structure, add		233.79	
8580	Strl steel members, for over 15 story structure, add		318.86	
8320	Structural steel members, tees, WT, MF, ST, 31-65 PLF	TON	1,847.48	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		96.82	
8560	Strl steel members, for 3 thru 6 story structure, add		111.74	
8570	Strl steel members, for 7 thru 15 story structure, add		192.98	
8580	Strl steel members, for over 15 story structure, add		258.98	
8330	Structural steel members, tees, WT, MF, ST, 66-100 PLF	TON	1,562.19	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		31.12	
8560	Strl steel members, for 3 thru 6 story structure, add		84.33	
8570	Strl steel members, for 7 thru 15 story structure, add		139.50	
8580	Strl steel members, for over 15 story structure, add		180.08	
8340	Structural steel members, tees, WT, MF, ST, 101-365 PLF	TON	1,483.81	
8500	Strl steel members, for ASTM A441 high strength steel, add		143.19	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		286.39	
8520	Strl steel members, for galvanizing, add		429.58	
8540	Strl steel members, for masonry end bearing, add		15.56	
8560	Strl steel members, for 3 thru 6 story structure, add		77.30	
8570	Strl steel members, for 7 thru 15 story structure, add		125.97	
8580	Strl steel members, for over 15 story structure, add		160.31	
05150 8349 Double angles				
8350	Structural steel members, double angles, 0-20 PLF	TON	1,736.52	
8500	Strl steel members, for ASTM A441 high strength steel, add		159.10	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		318.21	
8520	Strl steel members, for galvanizing, add		477.31	
8540	Strl steel members, for masonry end bearing, add		43.64	
8560	Strl steel members, for 3 thru 6 story structure, add		95.55	
8570	Strl steel members, for 7 thru 15 story structure, add		159.29	
8580	Strl steel members, for over 15 story structure, add		207.11	
8360	Structural steel members, double angles, 21-50 PLF	TON	1,573.24	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		14.55	
8560	Strl steel members, for 3 thru 6 story structure, add		81.57	
8570	Strl steel members, for 7 thru 15 story structure, add		132.65	
8580	Strl steel members, for over 15 story structure, add		168.48	
8370	Structural steel members, double angles, 51-80 PLF	TON	1,494.82	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		10.91	
8560	Strl steel members, for 3 thru 6 story structure, add		76.92	
8570	Strl steel members, for 7 thru 15 story structure, add		124.68	
8580	Strl steel members, for over 15 story structure, add		157.85	
8380	Structural steel members, double angles, 81-115 PLF	TON	1,436.87	
8500	Strl steel members, for ASTM A441 high strength steel, add		141.87	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		283.74	
8520	Strl steel members, for galvanizing, add		425.60	
8540	Strl steel members, for masonry end bearing, add		5.46	
8560	Strl steel members, for 3 thru 6 story structure, add		72.93	
8570	Strl steel members, for 7 thru 15 story structure, add		117.50	
8580	Strl steel members, for over 15 story structure, add		147.87	
05150 8389	Combination sections, Wshape/channel			
8390	Structural steel members, 0-30 PLF, comb sections,W	TON	2,075.14	
8500	Strl steel members, for ASTM A441 high strength steel, add		159.10	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		318.21	
8520	Strl steel members, for galvanizing, add		477.31	
8540	Strl steel members, for masonry end bearing, add		145.23	
8560	Strl steel members, for 3 thru 6 story structure, add		132.80	
8570	Strl steel members, for 7 thru 15 story structure, add		233.79	
8580	Strl steel members, for over 15 story structure, add		318.86	
8400	Structural steel members, 31-65 PLF, comb sections,W	TON	1,847.48	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		96.82	
8560	Strl steel members, for 3 thru 6 story structure, add		111.74	
8570	Strl steel members, for 7 thru 15 story structure, add		192.98	
8580	Strl steel members, for over 15 story structure, add		258.98	
8410	Structural steel members, 66-100 PLF, comb sections,W	TON	1,562.19	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		31.12	
8560	Strl steel members, for 3 thru 6 story structure, add		84.33	
8570	Strl steel members, for 7 thru 15 story structure, add		139.50	
8580	Strl steel members, for over 15 story structure, add		180.08	
8420	Structural steel members, 101-500 PLF, comb sections,W	TON	1,472.28	
8500	Strl steel members, for ASTM A441 high strength steel, add		143.19	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		286.39	
8520	Strl steel members, for galvanizing, add		429.58	
8540	Strl steel members, for masonry end bearing, add		12.10	
8560	Strl steel members, for 3 thru 6 story structure, add		76.03	
8570	Strl steel members, for 7 thru 15 story structure, add		123.43	
8580	Strl steel members, for over 15 story structure, add		156.51	
05150 8429	Combination sections, S shape/channel			
8430	Structural steel members, 31-65 PLF, comb sections,S	TON	1,781.18	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		96.82	
8560	Strl steel members, for 3 thru 6 story structure, add		108.42	
8570	Strl steel members, for 7 thru 15 story structure, add		187.68	
8580	Strl steel members, for over 15 story structure, add		252.35	
8440	Structural steel members, 66-100 PLF, comb sections,S	TON	1,495.90	
8500	Strl steel members, for ASTM A441 high strength steel, add		139.22	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		278.43	
8520	Strl steel members, for galvanizing, add		417.65	
8540	Strl steel members, for masonry end bearing, add		31.12	
8560	Strl steel members, for 3 thru 6 story structure, add		81.02	
8570	Strl steel members, for 7 thru 15 story structure, add		134.20	
8580	Strl steel members, for over 15 story structure, add		173.45	
05150 8449	Combination sections, channel/angle			
8450	Structural steel members, 0-30 PLF, comb sections,	TON	2,008.85	
8500	Strl steel members, for ASTM A441 high strength steel, add		152.48	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		304.95	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8520	Strl steel members, for galvanizing, add		457.43	
8540	Strl steel members, for masonry end bearing, add		145.23	
8560	Strl steel members, for 3 thru 6 story structure, add		129.49	
8570	Strl steel members, for 7 thru 15 story structure, add		228.48	
8580	Strl steel members, for over 15 story structure, add		312.23	
8460	Structural steel members, 31-65 PLF, comb sections,	TON	1,781.18	
8500	Strl steel members, for ASTM A441 high strength steel, add		145.85	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		291.69	
8520	Strl steel members, for galvanizing, add		437.54	
8540	Strl steel members, for masonry end bearing, add		96.82	
8560	Strl steel members, for 3 thru 6 story structure, add		108.42	
8570	Strl steel members, for 7 thru 15 story structure, add		187.68	
8580	Strl steel members, for over 15 story structure, add		252.35	
8470	Structural steel members, 66-100 PLF, comb sections,	TON	1,522.42	
8500	Strl steel members, for ASTM A441 high strength steel, add		141.87	
8510	Strl steel members, for ASTM A242 Type 2 high strength stl, add		283.74	
8520	Strl steel members, for galvanizing, add		425.60	
8540	Strl steel members, for masonry end bearing, add		31.12	
8560	Strl steel members, for 3 thru 6 story structure, add		82.35	
8570	Strl steel members, for 7 thru 15 story structure, add		136.32	
8580	Strl steel members, for over 15 story structure, add		176.10	
05155 0010 Structural steel projects				
05155 3079 Built-up trusses				
3080	Structural steel projects, 100 PLF, 0-50 ft span, built-up	TON	2,190.24	
5800	Strl steel projects, for ASTM A441 high strength steel, add		204.50	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		409.00	
5820	Strl steel projects, for galvanizing, add		613.50	
5830	Strl steel projects, for touch-up of galvanizing, add		131.30	
5840	Strl steel projects, for masonry end bearing, add		43.57	
5870	Strl steel projects, for 7 thru 15 story structure, add		195.55	
5880	Strl steel projects, for over 15 story structure, add		252.43	
3085	Structural steel projects, 120 PLF, 51-100 ft span, built-up	TON	1,921.19	
5800	Strl steel projects, for ASTM A441 high strength steel, add		184.05	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		368.10	
5820	Strl steel projects, for galvanizing, add		552.15	
5830	Strl steel projects, for touch-up of galvanizing, add		108.16	
5840	Strl steel projects, for masonry end bearing, add		24.20	
5870	Strl steel projects, for 7 thru 15 story structure, add		164.99	
5880	Strl steel projects, for over 15 story structure, add		210.68	
3090	Structural steel projects, 150 PLF, 101-200 ft span, built-up	TON	1,620.97	
5800	Strl steel projects, for ASTM A441 high strength steel, add		157.83	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		315.65	
5820	Strl steel projects, for galvanizing, add		473.48	
5830	Strl steel projects, for touch-up of galvanizing, add		87.46	
5840	Strl steel projects, for masonry end bearing, add		12.82	
5870	Strl steel projects, for 7 thru 15 story structure, add		135.66	
5880	Strl steel projects, for over 15 story structure, add		171.92	
3095	Structural steel projects, 180 PLF, > 200 ft span, built-up	TON	1,377.84	
5800	Strl steel projects, for ASTM A441 high strength steel, add		133.75	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		267.50	
5820	Strl steel projects, for galvanizing, add		401.25	
5830	Strl steel projects, for touch-up of galvanizing, add		74.94	
5840	Strl steel projects, for masonry end bearing, add		12.10	
5870	Strl steel projects, for 7 thru 15 story structure, add		115.87	
5880	Strl steel projects, for over 15 story structure, add		147.06	
05155 3099 Roof trusses				
3100	Structural steel projects, roof trusses	TON	1,646.32	
5800	Strl steel projects, for ASTM A441 high strength steel, add		133.75	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		267.50	
5820	Strl steel projects, for galvanizing, add		401.25	
5830	Strl steel projects, for touch-up of galvanizing, add		128.64	
5840	Strl steel projects, for masonry end bearing, add		92.65	
5870	Strl steel projects, for 7 thru 15 story structure, add		174.94	
5880	Strl steel projects, for over 15 story structure, add		235.66	
05155 4299 Column base plates				
4300	Structural steel projects, light, to 150 lb, column base	LB	0.98	
5800	Strl steel projects, for ASTM A441 high strength steel, add		0.07	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		0.14	
5820	Strl steel projects, for galvanizing, add		0.21	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5830	Strl steel projects, for touch-up of galvanizing, add		0.09	
5840	Strl steel projects, for masonry end bearing, add		0.09	
5870	Strl steel projects, for 7 thru 15 story structure, add		0.12	
5880	Strl steel projects, for over 15 story structure, add		0.16	
4400	Structural steel projects, heavy, > 150 lb, column base	LB	1.17	
5800	Strl steel projects, for ASTM A441 high strength steel, add		0.08	
5810	Strl steel projects, for ASTM A242 Type 2 high strength stl, add		0.15	
5820	Strl steel projects, for galvanizing, add		0.23	
5830	Strl steel projects, for touch-up of galvanizing, add		0.12	
5840	Strl steel projects, for masonry end bearing, add		0.12	
5870	Strl steel projects, for 7 thru 15 story structure, add		0.15	
5880	Strl steel projects, for over 15 story structure, add		0.21	
05155 5199	High strength bolts in place			
5200	Structural steel projects, 3/4" bolts, average, high strength	EA	4.42	
05155 6125	Steel surface preparation, wash, clean, blast			
6215	Struct steel projects, 2800-6000 SF/day, metal prep, press washing	SF	0.06	
6220	Struct steel projects, 2800-4000 SF/day, metal prep, st cleaning	SF	0.09	
6225	Struct steel projects, metal prep, water blasting	SF	0.07	
6230	Struct steel projects, metal prep, brush-off blast	SF	0.20	
05155 6234	Commercial blast (SSPC-6)			
6235	Coml blast, 2.0 PSF, loose mill scale, fine powder rust,	SF	0.37	
6240	Coml blast, little/no rust 3.0 PSF, tight mill scale, (SSPC-6)	SF	0.51	
6245	Coml blast, exist coat blistered/pitted, 4.0 PSF,	SF	0.71	
6250	Coml blast, 6.7 PSF, exist coat badly pitted/nodules, (SSPC-6)	SF	1.20	
05155 6254	Near white blast (SSPC-10)			
6255	Near white blast, fine powder rust, 5.6PSF, loose mill scale,	SF	0.97	
6260	Near white blast, little/no rust, 6.9 PSF, tight mill scale,	SF	1.17	
6265	Near white blast, 9.0 PSF, exist coat blistered/pitted, (SSPC-10)	SF	1.54	
6270	Near white blast, exist coat badly pitted/nodules, 11.3 PSF,	SF	1.93	
05176	Structural Aluminum			
05178 0009	Aluminum			
05178 0009	Structural shapes			
0010	Aluminum structural shapes, 1" to 10" members, under 1 ton	LB	4.99	1.49
0050	Aluminum structural shapes, 1" to 10" members, 1 to 5 tons	LB	4.39	1.06
05178 0149	Backing plates			
0150	Aluminum backing plate, al, 3/16" x 24" x 24"	EA	106.09	13.48
0175	Aluminum backing plate, al, 3/16" x 48" x 48"	EA	254.81	10.34
05178 0299	Extrusions			
0300	Aluminum extrusions, over 5 tons, stock shapes	LB	4.35	1.01
0400	Aluminum extrusions, over 5 tons, custom shapes	LB	4.66	1.01
0500	Aluminum extrusions, tubular, 1" to 10", rolled shapes	LB	4.90	1.25
05179	Steel Wire Rope			
05180 0010	Wire rope			
Note: Ips = Improved Plow Steel, Iwrc = Independent Wire Rope Center, Xip = Extra Improved Plow Steel				
05180 0499	Bright, IPS, fiber core			
0500	Wire rope, 6 x 7, <500 LF w/access, 1/4" dia, bright, IPS,	LF	0.81	
0502	3/16" 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	0.40	
0504	5/16" 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	0.67	
0506	3/8"D 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	0.85	
0508	7/16" 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	1.04	
0510	Wire rope, 6 x 7, <500 LF w/access, 1/2" dia, bright, IPS,	LF	2.05	
0512	9/16" 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	1.47	
0514	5/8"D 6x7 Class Bright Wire Rope IPS, Fiber Core, Under 500LF w/Ac	LF	1.68	
0520	Wire rope, 6 x 7, <500 LF w/access, 3/4" dia, bright, IPS,	LF	3.81	
05180 0549	Bright, IPS, IWRC			
0550	Wire rope, 6 x 19, 1/4" dia, <500 LF w/access, bright, IPS,	LF	1.19	
0552	5/16" 6x19 Class Bright Wire Rope IPS, IWRC, < 500LF w/Accessories	LF	1.00	
0554	3/8" 6x19 Class Bright Wire Rope IPS, IWRC, < 500LF w/Accessories	LF	1.20	
0556	7/16" 6x19 Class Bright Wire Rope IPS, IWRC, < 500LF w/Accessories	LF	1.39	
0558	9/16" 6x19 Class Bright Wire Rope IPS, IWRC, < 500LF w/Accessories	LF	1.89	
0560	Wire rope, 6 x 19, 1/2" dia, <500 LF w/access, bright, IPS,	LF	2.12	
0562	5/8" 6x19 Class Bright Wire Rope IPS, IWRC, < 500LF w/Accessories	LF	2.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0564	7/8" 6x19 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	4.03	
0570	Wire rope, 6 x 19, 3/4" dia, <500 LF w/access, bright, IPS,	LF	3.87	
0580	Wire rope, 6 x 19, 1" dia, <500 LF w/access, bright, IPS, IWRC	LF	6.65	
0582	1-1/8" 6x19 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	6.26	
0590	Wire rope, 6 x 19, 1.25" dia, <500 LF w/access, bright, IPS,	LF	10.76	
0592	1-3/8" 6x19 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	9.01	
0600	Wire rope, 6 x 19, 1.5" dia, <500 LF w/access, bright, IPS,	LF	13.75	
0602	1-5/8" 6x19 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	12.75	
0610	Wire rope, 6 x 19, 1.75" dia, <500 LF w/access, bright, IPS,	LF	23.14	
0612	1-7/8" 6x19 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	19.81	
0620	Wire rope, 6 x 19, 2" dia, <500 LF w/access, bright, IPS, IWRC	LF	31.01	
0622	2-1/8" 6x19 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	25.65	
0630	Wire rope, 6 x 19, 2.25" dia, <500 LF w/access, bright, IPS,	LF	38.40	
0650	Wire rope, 6 x 37, 1/4" dia, <500 LF w/access, bright, IPS,	LF	1.39	
0652	5/16"6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	1.29	
0654	3/8" 6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	1.55	
0656	7/16"6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	1.76	
0660	Wire rope, 6 x 37, 1/2" dia, <500 LF w/access, bright, IPS,	LF	2.50	
0662	9/16"6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	2.35	
0664	5/8" 6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	2.65	
0670	Wire rope, 6 x 37, 3/4" dia, <500 LF w/access, bright, IPS,	LF	4.24	
0672	7/8" 6x37 Class Bright Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	4.53	
0680	Wire rope, 6 x 37, 1" dia, <500 LF w/access, bright, IPS, IWRC	LF	6.91	
0682	1-1/8" 6x37 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	7.04	
0690	Wire rope, 6 x 37, 1.25" dia, <500 LF w/access, bright, IPS,	LF	10.41	
0692	1-3/8" 6x37 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	9.90	
0700	Wire rope, 6 x 37, 1.5" dia, <500 LF w/access, bright, IPS,	LF	15.06	
0702	1-5/8" 6x37 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	14.16	
0710	Wire rope, 6 x 37, 1.75" dia, <500 LF w/access, bright, IPS,	LF	24.66	
0712	1-7/8" 6x37 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	22.01	
0720	Wire rope, 6 x 37, 2" dia, <500 LF w/access, bright, IPS, IWRC	LF	31.99	
0722	2-1/8" 6x37 Class Brgt Wire Rope IPS, IVRC, < 500LF w/Accessories	LF	28.32	
0730	Wire rope, 6 x 37, 2.25" dia, <500 LF w/access, bright, IPS,	LF	41.79	
0800	Wire rope, 6 x 19 & 6 x 37, swaged, 1/2" dia	LF	1.78	
0810	Wire rope, 6 x 19 & 6 x 37, swaged, 9/16" dia	LF	2.02	
0820	Wire rope, 6 x 19 & 6 x 37, swaged, 5/8" dia	LF	2.43	
0830	Wire rope, 6 x 19 & 6 x 37, swaged, 3/4" dia	LF	3.20	
0840	Wire rope, 6 x 19 & 6 x 37, swaged, 7/8" dia	LF	4.08	
0850	Wire rope, 6 x 19 & 6 x 37, swaged, 1" dia	LF	5.17	
0860	Wire rope, 6 x 19 & 6 x 37, swaged, 1-1/8" dia	LF	6.32	
0870	Wire rope, 6 x 19 & 6 x 37, swaged, 1.25" dia	LF	7.76	
0880	Wire rope, 6 x 19 & 6 x 37, swaged, 1-3/8" dia	LF	9.08	
0890	Wire rope, 6 x 19 & 6 x 37, swaged, 1.5" dia	LF	12.18	
05180 0999	Flattened strand, IPS Under 500 Ft			
1000	Wire rope, 5/8" dia, fiber core, <500 LF, flattened strand, IPS	LF	2.49	
1010	Wire rope, 3/4" dia, fiber core, <500 LF, flattened strand, IPS	LF	3.36	
1015	7/8"D Flattened Strand Wire Rope IPS, Fiber Core, Under 500 LF	LF	6.34	
1020	Wire rope, 1" dia, fiber core, <500 LF, flattened strand, IPS	LF	5.19	
1025	1-1/8"Flattened Strand Wire Rope IPS, Fiber Core, Under 500 LF	LF	9.34	
1028	1-3/8"Flattened Strand Wire Rope IPS, Fiber Core, Under 500 LF	LF	13.64	
1030	Wire rope, 1.25" dia, fiber core, <500 LF, flattened strand,	LF	7.94	
1040	Wire rope, 1.5" dia, fiber core, <500 LF, flattened strand, IPS	LF	10.83	
1045	1-5/8"Flattened Strand Wire Rope IPS, Fiber Core, Under 500 LF	LF	20.01	
1050	Wire rope, 1.75" dia, fiber core, <500 LF, flattened strand,	LF	15.32	
05180 1060	5X19 Coated Wire Rope, Bright, Ips, Fiber Core Under 500 Feet			
1062	9/16" 5x19 Brgt, Coated Wire Rope IPS, Fiber Core w/1/4"Wire, <500L	LF	2.84	
1064	5/8"D 5x19 Brgt, Coated Wire Rope IPS, Fiber Core w/5/16"Wire, <500	LF	3.18	
1066	11/16"5x19 Brgt, Coated Wire Rope IPS, Fiber Core w/3/8"Wire, <500L	LF	3.43	
1068	3/4"D 5x19 Brgt Coated Wire Rope IPS, Fiber Core w/7/16"Wire, <500	LF	3.80	
1070	13/16"5x19 Brgt, Coated Wire Rope IPS, Fiber Core w/1/2"Wire, <500L	LF	4.18	
1072	7/8"D 5x19 Brgt Coated Wire Rope IPS, Fiber Core w/9/16"Wire, <500	LF	4.53	
1074	1"D 5x19 Bright Coated Wire Rope IPS, Fiber Core w/5/8"Wire, <500L	LF	5.48	
1076	1-1/8"5x19 Brgt Coated Wire Rope IPS, Fiber Core w/3/4"Wire, <500L	LF	6.70	
1078	1-1/4"5x19 Brgt Coated Wire Rope IPS, Fiber Core w/7/8"Wire, <500L	LF	7.90	
1080	1-3/8"5x19 Brgt Coated Wire Rope IPS, Fiber Core w/1"Wire, <500LF	LF	9.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1082	1-1/2"5x19 Brgt Coated Wire Rope IPS, Fiber Core, 1-1/8"Wire, <500L	LF	11.00	
1084	1-5/8"5x19 Brgt Coated Wire Rope IPS, Fiber Core, 1-1/4"Wire, <500L	LF	12.90	
1086	1-3/4"5x19 Brgt Coated Wire Rope IPS, Fiber Core, 1-3/8"Wire, <500L	LF	15.41	
05180 1099	Flattened strand, XIPS, IWRC			
1100	Wire rope, flattened strand, 5/8" dia, XIPS, IWRC, <500 LF	LF	2.51	
1105	7/8"D Flattened Strand Wire Rope XIPS, IWRC, Under 500 LF	LF	2.92	
1110	Wire rope, flattened strand, 3/4" dia, XIPS, IWRC, <500 LF	LF	3.38	
1120	Wire rope, flattened strand, 1" dia, XIPS, IWRC, <500 LF	LF	5.35	
1125	1-1/8"Flattened Strand Wire Rope XIPS, IWRC, Under 500 LF	LF	6.55	
1130	Wire rope, flattened strand, 1.25" dia, XIPS, IWRC, <500 LF	LF	7.74	
1135	1-3/8"Flattened Strand Wire Rope XIPS, IWRC, Under 500 LF	LF	11.05	
1140	Wire rope, flattened strand, 1.5" dia, XIPS, IWRC, <500 LF	LF	11.35	
1145	1-5/8"Flattened Strand Wire Rope XIPS, IWRC, Under 500 LF	LF	13.96	
1150	Wire rope, flattened strand, 1.75" dia, XIPS, IWRC, <500 LF	LF	17.79	
05180 1199	Bright, rotation resist, IPS, fiber core			
1200	Wire rope, 19 x 7, <500 LF, 1/4" dia, bright, rotation resist,	LF	0.92	
1202	3/16"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	0.85	
1203	7/8"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	4.66	
1204	5/8"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	2.48	
1205	3/8"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	1.38	
1206	9/16"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	2.08	
1207	7/16"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	1.61	
1208	5/16"19x7 Rotatn Resis Wire Rope IPS, < 500 LF	LF	1.25	
1210	Wire rope, 19 x 7, <500 LF, 1/2" dia, bright, rotation resist,	LF	1.93	
1220	Wire rope, 19 x 7, <500 LF, 3/4" dia, bright, rotation resist,	LF	3.93	
1230	Wire rope, 19 x 7, <500 LF, 1" dia, bright, rotation resist,	LF	6.34	
1231	1-1/8"19x7Rotatn Resis Wire Rope IPS, < 500 LF	LF	7.08	
1240	Wire rope, 19 x 7, <500 LF, 1.25" dia, bright, rotation	LF	9.31	
1242	1-3/8"19x7Rotatn Resis Wire Rope IPS, < 500 LF	LF	10.10	
1250	Wire rope, 19 x 7, <500 LF, 1.5" dia, bright, rotation resist,	LF	12.79	
05180 1299	Bright, rotation resist, XIPS, IWRC			
1300	Wire rope, 8 x 19, <500 LF, 1/2"dia, bright, rotat resist,	LF	2.06	
1302	5/8" 8x19 Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	2.64	
1305	3/8" 8x19 Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	1.47	
1307	7/16"8x19 Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	1.71	
1309	9/16"8x19 Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	2.27	
1310	Wire rope, 8 x 19, <500 LF, 3/4" dia, bright, rotat resist, XIPS,	LF	3.93	
1312	7/8" 8x19 Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	4.91	
1320	Wire rope, 8 x 19, <500 LF, 1" dia, bright, rotat resist, XIPS,	LF	6.55	
1322	1-1/8"8x19Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	7.47	
1330	Wire rope, 8 x 19, <500 LF, 1.25"dia, bright, rotat resist,	LF	9.88	
1333	1-3/8"8x19Rotatn Resis Wire Rope XIPS, IWRC, Class Bright, < 500 LF	LF	10.75	
1340	Wire rope, 8 x 19, <500 LF, 1.5"dia, bright, rotat resist,	LF	13.29	
05180 1399	Bright, IPS, fiber core			
1400	Wire rope, 8 x 19, 1/4" dia, bright, IPS, fiber core, <500 LF	LF	0.61	
1401	3/16"8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	0.59	
1402	5/16"8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	1.04	
1408	3/8" 8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	1.21	
1409	7/16"8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	1.42	
1410	Wire rope, 8 x 19, 1/2" dia, bright, IPS, fiber core, <500 LF	LF	1.09	
1412	9/16"8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	1.89	
1414	5/8" 8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	2.28	
1420	Wire rope, 8 x 19, 3/4" dia, bright, IPS, fiber core, <500 LF	LF	2.20	
1422	7/8" 8x19 Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	4.22	
1430	Wire rope, 8 x 19, 1" dia, bright, IPS, fiber core, <500 LF	LF	3.70	
1432	1-1/8"8x19Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	6.40	
1440	Wire rope, 8 x 19, 1.25" dia, bright, IPS, fiber core, <500 LF	LF	5.60	
1442	1-3/8"8x19Bright Class Wire Rope IPS, Fiber Core, <500LF	LF	9.54	
1450	Wire rope, 8 x 19, 1.5" dia, bright, IPS, fiber core, <500 LF	LF	7.89	
05180 1499	Thimbles, heavy duty			
1500	Wire rope, thimbles, heavy duty, 1/4"	EA	4.11	0.80
1502	5/16"Hvy Duty Wire Rope Thimbles	EA	4.44	0.79
1504	3/8"Hvy Duty Wire Rope Thimbles	EA	4.81	0.79
1508	7/16"Hvy Duty Wire Rope Thimbles	EA	5.47	0.79

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1510	Wire rope, thimbles, heavy duty, 1/2"	EA	5.55	0.80
1512	9/16"Hvy Duty Wire Rope Thimbles	EA	5.78	0.79
1514	5/8"Hvy Duty Wire Rope Thimbles	EA	6.09	0.79
1520	Wire rope, thimbles, heavy duty, 3/4"	EA	9.88	1.20
1522	7/8"Hvy Duty Wire Rope Thimbles	EA	12.69	1.48
1530	Wire rope, thimbles, heavy duty, 1"	EA	19.87	2.47
1532	1-1/8" HD Wire Rope Thimbles	EA	31.33	3.28
1540	Wire rope, thimbles, heavy duty, 1.25"	EA	28.64	3.31
1542	1-3/8" HD Wire Rope Thimbles	EA	65.13	6.82
1550	Wire rope, thimbles, heavy duty, 1.5"	EA	82.26	9.75
1552	1-5/8" HD Wire Rope Thimbles	EA	142.46	13.09
1560	Wire rope, thimbles, heavy duty, 1.75"	EA	153.83	14.26
1568	1-7/8" HD Wire Rope Thimbles	EA	221.80	19.59
1570	Wire rope, thimbles, heavy duty, 2"	EA	209.71	17.35
1580	Wire rope, thimbles, heavy duty, 2.25"	EA	298.45	28.15
05180 1599 Clips				
1600	Wire rope, clips, 1/4" dia	EA	5.94	0.95
1602	1/8" Dia Wire Rope Clips	EA	5.18	1.01
1604	3/16" Dia Wire Rope Clips	EA	5.29	0.97
1608	5/16" Dia Wire Rope Clips	EA	6.07	0.97
1610	Wire rope, clips, 3/8" dia	EA	6.22	0.95
1612	7/16" Dia Wire Rope Clips	EA	7.79	0.94
1614	9/16" Dia Wire Rope Clips	EA	9.04	0.94
1620	Wire rope, clips, 1/2" dia	EA	7.76	0.95
1622	5/8" Dia Wire Rope Clips	EA	9.04	0.94
1630	Wire rope, clips, 3/4" dia	EA	12.51	1.27
1632	7/8" Dia Wire Rope Clips	EA	18.69	1.88
1640	Wire rope, clips, 1" dia	EA	20.35	1.85
1642	1-1/8" Dia Wire Rope Clips	EA	24.19	2.52
1650	Wire rope, clips, 1.25" dia	EA	35.05	3.71
1652	1-3/8" Dia Wire Rope Clips	EA	43.45	4.08
1670	Wire rope, clips, 1.5" dia	EA	47.26	4.73
1672	1-5/8" Dia Wire Rope Clips	EA	71.32	5.84
1680	Wire rope, clips, 1.75" dia	EA	94.36	7.67
1690	Wire rope, clips, 2" dia	EA	113.07	10.22
1700	Wire rope, clips, 2.25" dia	EA	153.13	12.91
1710	Wire rope, clips, 2.5" dia	EA	171.85	14.18
1720	Wire rope, clips, 2.75" dia	EA	255.21	17.35
1730	Wire rope, clips, 3" dia	EA	328.87	25.42
05180 1799 Sockets				
05180 1799 Open swage				
1800	Wire rope, sockets, open swage, 1/4" dia	EA	29.01	0.87
1802	5/16" Dia Open Swage Sockets	EA	35.79	0.87
1804	3/8" Dia Open Swage Sockets	EA	37.22	1.19
1806	7/16" Dia Open Swage Sockets	EA	44.43	1.41
1810	Wire rope, sockets, open swage, 1/2" dia	EA	44.41	1.46
1812	9/16" Dia Open Swage Sockets	EA	66.76	3.32
1814	5/8" Dia Open Swage Sockets	EA	66.76	3.32
1820	Wire rope, sockets, open swage, 3/4" dia	EA	87.87	6.44
1822	7/8" Dia Open Swage Sockets	EA	118.37	9.23
1830	Wire rope, sockets, open swage, 1" dia	EA	166.61	14.15
1832	1-1/8" Dia Open Swage Sockets	EA	225.29	22.62
1840	Wire rope, sockets, open swage, 1.25" dia	EA	258.21	25.60
1842	1-3/8" Dia Open Swage Sockets	EA	352.21	34.52
1850	Wire rope, sockets, open swage, 1.5" dia	EA	504.85	42.30
1860	Wire rope, sockets, open swage, 1.75" dia	EA	745.60	48.59
1870	Wire rope, sockets, open swage, 2" dia	EA	1,222.20	94.49
05180 1899 Closed swage				
1900	Wire rope, sockets, closed swage, 1/4" dia	EA	18.46	0.87
1902	5/16" Dia Closed Swage Sockets	EA	24.73	0.87
1904	3/8" Dia Closed Swage Sockets	EA	29.43	0.87
1906	7/16" Dia Closed Swage Sockets	EA	30.97	1.08
1910	Wire rope, sockets, closed swage, 1/2" dia	EA	31.34	1.09
1912	9/16" Dia Closed Swage Sockets	EA	43.60	2.09

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1914	5/8" Dia Closed Swage Sockets	EA	45.31	2.42
1920	Wire rope, sockets, closed swage, 3/4" dia	EA	57.02	3.97
1930	Wire rope, sockets, closed swage, 1" dia	EA	107.25	8.00
1932	7/8" Dia Closed Swage Sockets	EA	74.59	5.84
1933	1-1/8" Dia Closed Swage Sockets	EA	133.31	5.84
1940	Wire rope, sockets, closed swage, 1.25" dia	EA	185.92	17.75
1942	1-3/8" Dia Closed Swage Sockets	EA	240.82	22.47
1950	Wire rope, sockets, closed swage, 1.5" dia	EA	331.80	31.28
1960	Wire rope, sockets, closed swage, 1.75" dia	EA	468.22	41.21
1970	Wire rope, sockets, closed swage, 2" dia	EA	824.80	61.17
05180 1999 Open spelter, galvanized				
2000	Wire rope, sockets, open spelter, galv, 1/4" dia	EA	36.48	0.84
2002	5/16"Open Spelter Sockets, Galv	EA	39.15	0.87
2004	9/16"Open Spelter Sockets, Galv	EA	59.24	2.99
2005	5/8"Open Spelter Sockets, Galv	EA	64.16	2.99
2006	7/16"Open Spelter Sockets, Galv	EA	44.35	1.77
2008	3/8"Open Spelter Sockets, Galv	EA	42.94	0.87
2009	7/8"Open Spelter Sockets, Galv	EA	114.56	7.61
2010	Wire rope, sockets, open spelter, galv, 1/2" dia	EA	43.17	1.56
2020	Wire rope, sockets, open spelter, galv, 3/4" dia	EA	74.82	4.44
2030	Wire rope, sockets, open spelter, galv, 1" dia	EA	203.16	11.60
2032	1-1/8"Open Spelter Sockets, Galv	EA	247.89	19.41
2040	Wire rope, sockets, open spelter, galv, 1.25" dia	EA	323.11	24.66
2042	1-3/8"Open Spelter Sockets, Galv	EA	357.50	25.39
2050	Wire rope, sockets, open spelter, galv, 1.5" dia	EA	585.11	31.50
2052	1-5/8"Open Spelter Sockets, Galv	EA	717.54	42.38
2060	Wire rope, sockets, open spelter, galv, 1.75" dia	EA	1,057.17	64.96
2062	1-7/8"Open Spelter Sockets, Galv	EA	1,169.00	66.37
2070	Wire rope, sockets, open spelter, galv, 2" dia	EA	1,368.38	100.85
2072	2-1/8"Open Spelter Sockets, Galv	EA	1,468.67	100.78
2074	2-3/8"Open Spelter Sockets, Galv	EA	1,939.07	127.80
2080	Wire rope, sockets, open spelter, galv, 2.5" dia	EA	2,201.22	157.34
05180 2099 Closed spelter, galvanized				
2100	Wire rope, sockets, closed spelter, galv, 1/4" dia	EA	30.96	0.84
2102	5/16"Clsd Spelter Sockets, Galv	EA	32.13	0.87
2104	3/8"Clsd Spelter Sockets, Galv	EA	35.25	0.87
2110	Wire rope, sockets, closed spelter, galv, 1/2" dia	EA	35.60	1.31
2112	7/16"Clsd Spelter Sockets, Galv	EA	36.58	1.48
2114	9/16"Clsd Spelter Sockets, Galv	EA	52.12	2.71
2116	5/8"Clsd Spelter Sockets, Galv	EA	56.51	2.67
2120	Wire rope, sockets, closed spelter, galv, 3/4" dia	EA	63.57	3.86
2122	7/8"Clsd Spelter Sockets, Galv	EA	94.88	6.10
2130	Wire rope, sockets, closed spelter, galv, 1" dia	EA	139.70	9.16
2132	1-1/8"Clsd Spelter Sockets, Galv	EA	203.01	12.73
2140	Wire rope, sockets, closed spelter, galv, 1.25" dia	EA	235.43	16.95
2142	1-3/8"Clsd Spelter Sockets, Galv	EA	254.71	17.06
2150	Wire rope, sockets, closed spelter, galv, 1.5" dia	EA	423.78	20.69
2152	1-5/8"Clsd Spelter Sockets, Galv	EA	512.96	27.38
2160	Wire rope, sockets, closed spelter, galv, 1.75" dia	EA	642.23	42.41
2162	1-7/8"Clsd Spelter Sockets, Galv	EA	693.88	42.49
2170	Wire rope, sockets, closed spelter, galv, 2" dia	EA	827.94	61.07
2172	2-1/8"Clsd Spelter Sockets, Galv	EA	889.57	61.03
2178	2-3/8"Clsd Spelter Sockets, Galv	EA	1,367.15	81.73
2180	Wire rope, sockets, closed spelter, galv, 2.5" dia	EA	1,261.59	99.65
05180 2199 Jaw & jaw turnbuckles				
2200	Wire rope, jaw & jaw turnbuckles, 1/4" x 4"	EA	20.48	0.87
2250	Wire rope, jaw & jaw turnbuckles, 1/2" x 6"	EA	27.69	1.16
2252	5/16"x4-1/2" Jaw & Jaw Turnbuckl	EA	22.13	0.90
2254	3/8"x6" Jaw & Jaw Turnbuckles	EA	24.73	0.87
2256	5/8"x6" Jaw & Jaw Turnbuckles	EA	42.92	2.42
2260	Wire rope, jaw & jaw turnbuckles, 1/2" x 9"	EA	36.35	1.46
2262	5/8"x9" Jaw & Jaw Turnbuckles	EA	51.10	2.42
2270	Wire rope, jaw & jaw turnbuckles, 1/2" x 12"	EA	41.43	1.78
2272	5/8"x12" Jaw & Jaw Turnbuckles	EA	59.39	2.67
2274	7/8"x12" Jaw & Jaw Turnbuckles	EA	112.99	7.29

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2300	Wire rope, jaw & jaw turnbuckles, 3/4" x 6"	EA	57.70	3.31
2310	Wire rope, jaw & jaw turnbuckles, 3/4" x 9"	EA	66.46	3.93
2320	Wire rope, jaw & jaw turnbuckles, 3/4" x 12"	EA	81.18	4.22
2330	Wire rope, jaw & jaw turnbuckles, 3/4" x 18"	EA	97.73	5.13
2332	7/8"x18" Jaw & Jaw Turnbuckles	EA	136.67	8.48
2350	Wire rope, jaw & jaw turnbuckles, 1" x 6"	EA	116.19	7.35
2360	Wire rope, jaw & jaw turnbuckles, 1" x 12"	EA	134.99	9.42
2370	Wire rope, jaw & jaw turnbuckles, 1" x 18"	EA	193.77	12.44
2380	Wire rope, jaw & jaw turnbuckles, 1" x 24"	EA	213.27	14.48
2400	Wire rope, jaw & jaw turnbuckles, 1.25" x 12"	EA	234.80	17.31
2410	Wire rope, jaw & jaw turnbuckles, 1.25" x 18"	EA	277.51	19.10
2420	Wire rope, jaw & jaw turnbuckles, 1.25" x 24"	EA	356.17	21.79
2450	Wire rope, jaw & jaw turnbuckles, 1.5" x 12"	EA	351.93	23.13
2460	Wire rope, jaw & jaw turnbuckles, 1.5" x 18"	EA	398.79	30.77
2470	Wire rope, jaw & jaw turnbuckles, 1.5" x 24"	EA	523.09	39.72
2500	Wire rope, jaw & jaw turnbuckles, 1.75" x 18"	EA	692.66	39.21
2510	Wire rope, jaw & jaw turnbuckles, 1.75" x 24"	EA	794.00	41.97
2550	Wire rope, jaw & jaw turnbuckles, 2" x 24"	EA	1,156.08	75.76
2600	Wire rope, jaw & jaw turnbuckles, 2.5" x 24"	EA	2,002.70	98.45
2650	Wire rope, jaw & jaw turnbuckles, 2.75" x 24"	EA	2,700.50	150.39

05200 Metal Joists

05205 Steel Joists

05210 0010 Open web joists

05210 0010 K series

0020	Open web joists, truckload lots, span up to 30', minimum K	TON	1,159.62	52.63
6200	<i>Stl joists, open web, for shop prime paint other than mfrs std, add</i>		182.60	
0410	Open web joists, truckload lots, span 30' to 50', minimum K	TON	1,130.61	52.26
6200	<i>Stl joists, open web, for shop prime paint other than mfrs std, add</i>		182.60	

05210 2000 LH series, bolted cross bridging

2020	Open web joists, LH series, spans to 96', minimum	TON	1,144.21	50.91
6000	<i>Steel joists, open web, for welded cross bridging, add</i>		69.37	
6200	<i>Stl joists, open web, for shop prime paint other than mfrs std, add</i>		182.60	

05210 3010 DLH series, bolted cross bridging

3020	Open web joists, spans to 144' (shipped in 2 pieces), min, DLH	TON	1,184.91	51.15
6000	<i>Steel joists, open web, for welded cross bridging, add</i>		69.37	
6200	<i>Stl joists, open web, for shop prime paint other than mfrs std, add</i>		190.74	

05300 Metal Decking

05310 Steel Deck

05314 0010 Metal decking Cellular Type

05314 0099 Cellular units, galvanized

0100	Metal decking, cellular, galv, 1.5" deep, 18-18 ga	SF	4.62	0.24
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.60	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.60	
1900	<i>Metal decking, cellular, for multi-story or congested site, add</i>		0.31	
0150	Metal decking, cellular, galv, 1.5" deep, 22-18 ga	SF	3.88	0.33
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.49	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.49	
1900	<i>Metal decking, cellular, for multi-story or congested site, add</i>		0.30	
0400	Metal decking, cellular, galv, 3" deep, 20-20 ga	SF	4.18	0.32
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.49	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.49	
1900	<i>Metal decking, cellular, for multi-story or congested site, add</i>		0.47	
0500	Metal decking, cellular, galv, 3" deep, 18-20 ga	SF	5.36	0.32
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.66	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.66	
1900	<i>Metal decking, cellular, for multi-story or congested site, add</i>		0.48	
0600	Metal decking, cellular, galv, 3" deep, 18-18 ga	SF	5.91	0.32
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.74	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.74	
1900	<i>Metal decking, cellular, for multi-story or congested site, add</i>		0.50	
0700	Metal decking, cellular, galv, 3" deep, 16-18 ga	SF	6.43	0.28
1500	<i>Metal decking, cellular, for acoustical deck, add</i>		0.81	
1700	<i>Metal decking, cellular, for cells used for ventilation, add</i>		0.81	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1900	Metal decking, cellular, for multi-story or congested site, add		0.53	
0800	Metal decking, cellular, galv, 3" deep, 16-16 ga	SF	7.12	0.33
1500	Metal decking, cellular, for acoustical deck, add		0.90	
1700	Metal decking, cellular, for cells used for ventilation, add		0.90	
1900	Metal decking, cellular, for multi-story or congested site, add		0.57	
0900	3"x22Ga Open Type Metal Deck Galvanized, Over 5000 SF (465 M ²)	SF	1.38	0.28
1500	Metal decking, cellular, for acoustical deck, add		0.16	
1700	Metal decking, cellular, for cells used for ventilation, add		0.16	
1900	Metal decking, cellular, for multi-story or congested site, add		0.16	
1000	Metal decking, cellular, galv, 4.5" deep, 20-18 ga	SF	7.97	0.32
1500	Metal decking, cellular, for acoustical deck, add		1.02	
1700	Metal decking, cellular, for cells used for ventilation, add		1.02	
1900	Metal decking, cellular, for multi-story or congested site, add		0.59	
1100	Metal decking, cellular, galv, 4.5" deep, 18-18 ga	SF	8.78	0.36
1500	Metal decking, cellular, for acoustical deck, add		1.13	
1700	Metal decking, cellular, for cells used for ventilation, add		1.13	
1900	Metal decking, cellular, for multi-story or congested site, add		0.62	
1200	Metal decking, cellular, galv, 4.5" deep, 16-18 ga	SF	9.60	0.32
1500	Metal decking, cellular, for acoustical deck, add		1.24	
1700	Metal decking, cellular, for cells used for ventilation, add		1.24	
1900	Metal decking, cellular, for multi-story or congested site, add		0.66	
1300	Metal decking, cellular, galv, 4.5" deep, 16-16 ga	SF	10.27	0.36
1500	Metal decking, cellular, for acoustical deck, add		1.33	
1700	Metal decking, cellular, for cells used for ventilation, add		1.33	
1900	Metal decking, cellular, for multi-story or congested site, add		0.69	
05314 2099	Open type, galvanized			
2100	Metal decking, open, galv, 22 ga, 1.5" deep, < 50 squares	SF	1.37	0.33
1500	Metal decking, cellular, for acoustical deck, add		0.16	
1700	Metal decking, cellular, for cells used for ventilation, add		0.16	
1900	Metal decking, cellular, for multi-story or congested site, add		0.15	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.02	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
2650	Metal decking, open, galv, 22 ga, 1.5" deep, >50 squares	SF	1.37	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.16	
1700	Metal decking, cellular, for cells used for ventilation, add		0.16	
1900	Metal decking, cellular, for multi-story or congested site, add		0.16	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.02	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
2900	Metal decking, open, galv, 18 ga, 1.5" deep, < 50 squares	SF	1.87	0.31
1500	Metal decking, cellular, for acoustical deck, add		0.23	
1700	Metal decking, cellular, for cells used for ventilation, add		0.23	
1900	Metal decking, cellular, for multi-story or congested site, add		0.17	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.03	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
2950	Metal decking, open, galv, 18 ga, 1.5" deep, >50 squares	SF	1.62	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.20	
1700	Metal decking, cellular, for cells used for ventilation, add		0.20	
1900	Metal decking, cellular, for multi-story or congested site, add		0.16	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.03	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3200	Metal decking, open, 3" deep, 22 gauge, under 50 squares	SF	1.94	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.24	
1700	Metal decking, cellular, for cells used for ventilation, add		0.24	
1900	Metal decking, cellular, for multi-story or congested site, add		0.18	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.03	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3300	Metal decking, open, 3" deep, 20 gauge, under 50 squares	SF	2.10	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.26	
1700	Metal decking, cellular, for cells used for ventilation, add		0.26	
1900	Metal decking, cellular, for multi-story or congested site, add		0.19	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.03	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3350	Metal decking, open, 3" deep, 20 gauge, >50 squares	SF	1.77	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.21	
1700	Metal decking, cellular, for cells used for ventilation, add		0.21	
1900	Metal decking, cellular, for multi-story or congested site, add		0.18	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.03	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3400	Metal decking, open, 3" deep, 18 gauge, under 50 squares	SF	2.57	0.32

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1500	Metal decking, cellular, for acoustical deck, add		0.33	
1700	Metal decking, cellular, for cells used for ventilation, add		0.33	
1900	Metal decking, cellular, for multi-story or congested site, add		0.20	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.04	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3450	Metal decking, open, 3" deep, 18 gauge, >50 squares	SF	2.15	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.27	
1700	Metal decking, cellular, for cells used for ventilation, add		0.27	
1900	Metal decking, cellular, for multi-story or congested site, add		0.19	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.04	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3500	Metal decking, open, 3" deep, 16 gauge, under 50 squares	SF	2.88	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.37	
1700	Metal decking, cellular, for cells used for ventilation, add		0.37	
1900	Metal decking, cellular, for multi-story or congested site, add		0.22	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.05	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3550	Metal decking, open, 3" deep, 16 gauge, >50 squares	SF	2.49	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.31	
1700	Metal decking, cellular, for cells used for ventilation, add		0.31	
1900	Metal decking, cellular, for multi-story or congested site, add		0.20	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.04	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3700	Metal decking, open, galv, 4.5" deep, long span, 20 ga,	SF	2.90	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.36	
1700	Metal decking, cellular, for cells used for ventilation, add		0.36	
1900	Metal decking, cellular, for multi-story or congested site, add		0.24	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.05	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3800	Metal decking, open, galv, 4.5" deep, long span, 18 ga	SF	3.86	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.50	
1700	Metal decking, cellular, for cells used for ventilation, add		0.50	
1900	Metal decking, cellular, for multi-story or congested site, add		0.26	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.07	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
3900	Metal decking, open, galv, 4.5" deep, long span, 16 ga	SF	4.73	0.28
1500	Metal decking, cellular, for acoustical deck, add		0.63	
1700	Metal decking, cellular, for cells used for ventilation, add		0.63	
1900	Metal decking, cellular, for multi-story or congested site, add		0.28	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.08	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
4100	Metal decking, open, galv, 6" deep, long span, 18 ga	SF	5.01	0.33
1500	Metal decking, cellular, for acoustical deck, add		0.65	
1700	Metal decking, cellular, for cells used for ventilation, add		0.65	
1900	Metal decking, cellular, for multi-story or congested site, add		0.33	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.09	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
4200	Metal decking, open, galv, 6" deep, long span, 16 ga	SF	5.58	0.28
1500	Metal decking, cellular, for acoustical deck, add		0.74	
1700	Metal decking, cellular, for cells used for ventilation, add		0.74	
1900	Metal decking, cellular, for multi-story or congested site, add		0.34	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.10	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
4500	Metal decking, open, galv, 7.5" deep, long span, 18 ga	SF	5.67	0.32
1500	Metal decking, cellular, for acoustical deck, add		0.74	
1700	Metal decking, cellular, for cells used for ventilation, add		0.74	
1900	Metal decking, cellular, for multi-story or congested site, add		0.38	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.10	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
4600	Metal decking, open, galv, 7.5" deep, long span, 16 ga	SF	6.33	0.28
1500	Metal decking, cellular, for acoustical deck, add		0.83	
1700	Metal decking, cellular, for cells used for ventilation, add		0.83	
1900	Metal decking, cellular, for multi-story or congested site, add		0.41	
4800	Metal decking, open type, for painted instead of galv, deduct		-0.11	
5000	Metal deck, open type, for acoust perf, w/fiberglass, add per SF		1.07	
05314 5099	Non-cellular composite deck, galvanized			
5100	Metal decking, non-cellular composite, 16 ga, galv, 1.5" D	SF	2.27	0.33
5120	Metal decking, non-cellular composite, 18 ga, galv, 1.5" D	SF	1.84	0.33
5140	Metal decking, non-cellular composite, 20 ga, galv, 1.5" D	SF	1.50	0.31

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5142	1-1/2"x22Ga Composite Metal Deck Galvanized, Non-Cellular	SF	1.19	0.28
5200	Metal decking, non-cellular composite, 22 ga, galv, 2" D	SF	1.52	0.32
5700	Metal decking, non-cellular composite, 22 ga, galv, 3" D	SF	1.64	0.32
5800	Metal decking, non-cellular composite, 20 ga, galv, 3" D	SF	1.63	0.32
5900	Metal decking, non-cellular composite, 18 ga, galv, 3" D	SF	2.20	0.37
6000	Metal decking, non-cellular composite, 16 ga, galv, 3" D	SF	2.52	0.32
6002	3"Dp x22Ga Composite Metal Deck Galvanized, Non-Cellular	SF	1.43	0.28
05314 6099 Slab form steel				
6100	Metal decking, slab form uncoated, stl, 28 ga, 9/16" D	SF	0.83	0.32
6300	Metal decking, slab form uncoated, stl, 24 ga, 1-5/16" D	SF	1.18	0.28
6500	Metal decking, slab form uncoated, stl, 22 ga, 1-5/16" D	SF	1.33	0.24

05500 Metal Fabrications

05510 Metal Stairs

05511 0010 Stairs

Note: Stringers And Pipe Railing Stock Units Per Each Riser, Rail Stock Units Priced Per Riser, Stock Units Priced Per Riser

0020	Stair, stl, grating trd & pipe r, 3'-6" W, saf nosing, stl strg	EA	126.36	4.75
0050	Stair, stl, grating trd & pipe r, 4' wide, saf nosing, stl strg	EA	169.53	6.48
0200	Stair, cement fill metal pan, picket rail, 3'-6" wide	EA	113.57	4.59
0210	Stair, grating trd, 5'-0" wide, pipe railing, safety nosing	EA	196.21	7.33
0220	Stair, grating trd, landing, steel, grating, framing	SF	63.88	3.66
0300	Stair, grating trd, 4'-0" wide, landing, stl, grating, framing	EA	127.85	4.87
0360	Stair, cement filled metal pan tread, 5'-0" wide, picket rail	EA	193.88	7.21
0400	Stair, cast iron tread & pipe rail, 3'-6" wide	EA	233.36	6.12
0450	Stair, cast iron tread & pipe rail, 4'-0" wide	EA	211.40	5.36
0475	Stair, cast iron tread & pipe rail, 5'-0" wide	EA	228.77	5.60
1500	Stair, landing, steel pan, conventional	SF	46.43	1.81

05511 3000 Fire Escape

3001	Fire escape, 2' wide balcony, 1" x 1/4" bars 1-1/2" o.c.	LF	46.71	
3002	Fire escape, 1st story cantilever red stair, standard	EA	2,055.89	
3003	Fire escape, 1st story cantilever red stair, cable counterweight	EA	1,541.03	
3004	Fire escape, 36"x40" platform & fixed stair	FLI	943.72	

05511 3500 Fire Escape Stairs

3501	Fire escape stairs, one story, disappearing, stainless steel	VLF	168.74	
3502	Fire escape ladders, one story, portable	EA	58.15	

05512 0009 Stair treads

0010	Stair treads, al grtg, 3' long, 6" W 1" x 3/16" bars,	EA	39.87	6.42
0700	Stair treads, cast al grtg, 5/16" T, 3' long, 12" W abrsv	EA	130.43	6.42
0800	Stair treads, cast al grtg, 3/8" T, 3' long, 12" W abrsv	EA	135.43	5.99
0900	Stair treads, cast al grtg, 1/2" T, 3' long, 12" W abrsv	EA	151.14	5.99
1200	Stair treads, cast iron grtg, 3/8" T, 3' long, 12" W abrsv	EA	101.71	4.88
1300	Stair treads, cast iron grtg, 1/2" T, 3' long, 12" W abrsv	EA	114.50	5.31

05513 Ladders

05518 0009 Ladders, steel

0010	Ladder, steel, 20' wide, bolted to conc, w/cage	VLF	91.48	2.09
0150	Ladder, for galvanized steel, add		19.71	
0160	Ladder, for aluminum add		49.28	
0100	Ladder, steel, 20' wide, bolted to conc, w/o cage	VLF	46.56	1.01
0150	Ladder, for galvanized steel, add		9.42	
0160	Ladder, for aluminum add		23.55	
0110	20" (51cm) W Vert Alum Caged Ladder	VLF	82.42	2.10
0120	20" (51cm) Wide Vert Alum Ladder	VLF	54.48	1.01

05520 Handrails & Railings

05523 0009 Railing, pipe

Note: Includes Standard And Rails Factory Painted Mounted On Stairs. Socket Mounted.

05523 0009 Aluminum

0010	Railing, pipe, aluminum 2 rail, satin finish, 1.25" dia	LF	22.30	0.68
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05523 0499 Steel

0500	Railing, pipe, steel, 2 rail, on stairs, primed, 1.25" dia	LF	18.11	0.52
0800	Railing, pipe, for stainless steel, add		15.09	
0810	Railing, pipe, for aluminum add		5.03	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0820	Railing, pipe, for 6" high kick plate, add		3.02	
0830	Railing, pipe, for curved rail, add		5.43	
0840	Railing, pipe, for level balcony section, deduct		-1.31	
0850	Railing, pipe, for galvanizing, add		3.02	
0510	Railing, pipe, steel, 2 rail, on stairs, primed, 1" dia	LF	17.35	0.52
0800	Railing, pipe, for stainless steel, add		15.96	
0810	Railing, pipe, for aluminum add		5.32	
0820	Railing, pipe, for 6" high kick plate, add		3.19	
0830	Railing, pipe, for curved rail, add		5.21	
0840	Railing, pipe, for level balcony section, deduct		-1.20	
0850	Railing, pipe, for galvanizing, add		3.19	
0520	Railing, pipe, steel, 2 rail, on stairs, primed, 1.5" dia	LF	19.10	0.60
0800	Railing, pipe, for stainless steel, add		16.58	
0810	Railing, pipe, for aluminum add		5.53	
0820	Railing, pipe, for 6" high kick plate, add		3.32	
0830	Railing, pipe, for curved rail, add		5.73	
0840	Railing, pipe, for level balcony section, deduct		-1.36	
0850	Railing, pipe, for galvanizing, add		3.32	
0530	Railing, pipe, steel, 2 rail, on stairs, primed, 2" dia	LF	19.56	0.76
0800	Railing, pipe, for stainless steel, add		17.27	
0810	Railing, pipe, for aluminum add		5.76	
0820	Railing, pipe, for 6" high kick plate, add		3.45	
0830	Railing, pipe, for curved rail, add		5.87	
0840	Railing, pipe, for level balcony section, deduct		-1.38	
0850	Railing, pipe, for galvanizing, add		3.45	
0928	Railing, pipe, steel, 2 rail, primed, 1" dia, on brackets	LF	12.29	0.56
0951	Railing, pipe, for stainless steel, add		8.37	
0952	Railing, pipe, for aluminum add		1.95	
0953	Railing, pipe, for curved rail, add		3.69	
0940	Railing, pipe, steel, 2 rail, primed, 1.5" dia, on brackets	LF	13.60	0.64
0951	Railing, pipe, for stainless steel, add		9.42	
0952	Railing, pipe, for aluminum add		2.20	
0953	Railing, pipe, for curved rail, add		4.08	
0950	Railing, pipe, steel, 2 rail, primed, 2" dia, on brackets	LF	14.18	0.68
0951	Railing, pipe, for stainless steel, add		10.29	
0952	Railing, pipe, for aluminum add		2.40	
0953	Railing, pipe, for curved rail, add		4.25	
0960	1-1/2"D (37mm) WLD Pipe HDRL, 3 Rail 32" (.82M) WShop Paint	VLF	39.00	0.67
0970	1-1/2"D (37mm) WLD Pipe HDRL, 4 Rail 42" H (1.07M) WShop Paint	VLF	43.85	0.67
05528 0009	Railings, ornamental			
0110	Railing, ornamental, shaped top rail, al, vert sq bars @6"	LF	430.07	31.77
0800	Railings, ornamental, for rake or angle railings, add		45.31	
0810	Railings, ornamental, for curved railings, add		64.51	
0120	Railing, ornamental, shaped top rail, brz, vert sq bars @6"	LF	447.33	22.03
0800	Railings, ornamental, for rake or angle railings, add		48.76	
0810	Railings, ornamental, for curved railings, add		67.10	
0130	Railing, ornamental, shaped top rail, sst, vert sq bars @6"	LF	462.55	26.30
0800	Railings, ornamental, for rake or angle railings, add		49.48	
0810	Railings, ornamental, for curved railings, add		69.38	
0570	Railing, ornamental, shaped top rail, stl, vert sq bars @ 6"	LF	395.88	27.90
0800	Railings, ornamental, for rake or angle railings, add		41.38	
0810	Railings, ornamental, for curved railings, add		59.38	
0650	Railing, ornamental, met supports, lam metal/wood, 2.5" round/oval	LF	478.19	9.75
0800	Railings, ornamental, for rake or angle railings, add		48.54	
0810	Railings, ornamental, for curved railings, add		71.73	
05528 0659	Brass Handrails - Plain			
0660	2" Brass Handrail - Straight	LF	35.30	0.70
0670	2" Brass 90 Degree Angle	LF	50.07	0.70
0680	2" Brass End Cap	LF	20.78	0.70
0690	2" Brass Handrail Bracket & Joint	LF	43.82	0.70
05530	Gratings & Floor Plates			
05530 1000	Aluminum Grating Pressure-Locked Bearing Bars			
05534 0010	Floor grating, aluminum			
0111	Floor grating, aluminum up to 75 SF, 3/4" x 1/8" bar	SF	15.50	0.36
2100	Floor grating, aluminum for safety serrated surface, add		2.11	
0112	Floor grating, aluminum up to 75 SF, 1" x 1/8" bar	SF	16.76	0.36
2100	Floor grating, aluminum for safety serrated surface, add		2.29	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0113	Floor grating, aluminum up to 75 SF, 1.25" x 1/8" bar	SF	21.79	0.44
2100	Floor grating, aluminum for safety serrated surface, add		3.03	
0122	Floor grating, aluminum up to 75 SF, 1.25" x 3/16" bar	SF	22.89	0.36
2100	Floor grating, aluminum for safety serrated surface, add		3.18	
0132	Floor grating, aluminum up to 75 SF, 1.5" x 1/8" bar	SF	19.29	0.36
2100	Floor grating, aluminum for safety serrated surface, add		2.62	
0136	Floor grating, aluminum up to 75 SF, 1.75" x 3/16" bar	SF	26.36	0.32
2100	Floor grating, aluminum for safety serrated surface, add		3.57	
0200	Floor grating, aluminum for straight cuts, add	LF	2.30	
0300	Floor grating, aluminum for curved cuts, add	LF	3.12	
0400	Floor grating, aluminum for straight banding, add	LF	2.94	
0500	Floor grating, aluminum for curved banding, add	LF	3.70	
0700	Floor grating, aluminum for straight toe plate, add	LF	6.43	
0800	Floor grating, aluminum for curved toe plate, add	LF	7.91	
05542 0009	Floor grating, steel Included In Welded Steel Grating			
0612	Floor grating, stl, 3/4" x 1/8", ptd brg bars @ 15/16" OC, 75 SF	SF	10.30	0.69
1600	Floor grating, steel, for safety serrated surface, add		1.32	
0615	Floor grating, stl, 1" x 1/8", ptd brg bars @ 15/16" OC, 75 SF	SF	14.08	0.84
1600	Floor grating, steel, for safety serrated surface, add		1.68	
0618	Floor grating, stl, 1.25" x 1/8", ptd brg bars @ 15/16" OC, 75 SF	SF	15.42	0.80
1600	Floor grating, steel, for safety serrated surface, add		1.86	
0622	Floor grating, stl, 1.25" x 3/16", ptd brg bars @ 15/16" OC, 75 SF	SF	18.03	0.89
1600	Floor grating, steel, for safety serrated surface, add		2.38	
0632	Floor grating, stl, 1.5" x 1/8", ptd brg bars @ 15/16" OC, 75 SF	SF	16.06	0.72
1600	Floor grating, steel, for safety serrated surface, add		2.06	
0636	Floor grating, stl, 1.75" x 3/16", ptd brg bars @ 15/16" OC, 75 SF	SF	23.91	1.61
1600	Floor grating, steel, for safety serrated surface, add		3.16	
0691	Floor grating, galv stl, 4.1 PSF, brg bars @ 15/16"OC, 3/4"x1/8"	SF	11.62	0.53
1600	Floor grating, steel, for safety serrated surface, add		1.52	
0692	Floor grating, galv stl, 5.2 PSF, brg bars @ 15/16"OC, 1"x1/8"	SF	15.64	0.68
1600	Floor grating, steel, for safety serrated surface, add		2.10	
0693	Floor grating, galv stl, 6.3 PSF, brg bars @ 15/16"OC, 1.25"x1/8"	SF	15.35	0.60
1600	Floor grating, steel, for safety serrated surface, add		2.04	
0694	Floor grating, galv stl, 9.1 PSF, brg bars @ 15/16"OC, 1.25"x3/16"	SF	9.44	0.32
1600	Floor grating, steel, for safety serrated surface, add		1.09	
0695	Floor grating, galv stl, 7.4 PSF, brg bars @ 15/16"OC, 1.5"x1/8"	SF	18.12	0.68
1600	Floor grating, steel, for safety serrated surface, add		2.37	
0696	Floor grating, galv stl, 12.5PSF, brg bars @ 15/16"OC, 1.75"x3/16"	SF	27.07	1.45
1600	Floor grating, steel, for safety serrated surface, add		3.63	
0800	Floor grating, stl, straight cuts, add, brg bars @ 15/16" OC	LF	4.07	
0900	Floor grating, stl, add, brg bars @ 15/16" OC, curved cuts	LF	5.18	
1000	Floor grating, stl, straight banding, add, brg bars @ 15/16"	LF	3.95	
1100	Floor grating, stl, curved banding, add, brg bars @ 15/16"	LF	5.18	
1300	Floor grating, stl, str toe/kick pl, add, brg bars @ 15/16" OC	LF	7.97	
1400	Floor grating, stl, curved toe/kick pl, add, brg bars @	LF	8.84	
05545 3200	Floor Grating Planks			
3201	Floor grating planks, aluminum 9-1/2" wide, 14 Ga., 2" rib	LF	13.22	
3202	galv steel, 9-1/2" wide, 14 Ga., 2-1/2" rib	LF	8.33	
3203	galvanized steel, 9-1/2" wide, 14 Ga., 4" rib	LF	9.79	
3204	galv steel, 9-1/2" wide, 12 gau ge, 2-1/2" rib	LF	10.19	
3205	galvanized steel, 9-1/2" wide, 12 gauge, 3" rib	LF	11.41	
3206	Floor grating planks, stainless steel, type 304, 16 Ga., 2" rib	LF	21.42	
3207	stainless steel, type 304, 16 G a., type 316	LF	25.78	
05546 0010	Trench cover			
0175	Trench cover, heavy duty, welded steel grating, 12" trench	LF	35.84	0.37
0178	Trench cover, heavy duty, welded steel grating, 18" trench	LF	50.20	1.21
0180	Trench cover, heavy duty, welded steel grating, 24" trench	LF	61.26	1.88
0183	Trench cover, heavy duty, welded steel grating, 30" trench	LF	91.86	2.55
0185	Trench cover, heavy duty, welded steel grating, 36" trench	LF	118.11	2.78
0190	Trench cover, heavy duty, welded steel grating, 48" trench	LF	161.70	3.39
05546 2000	Checkered Plate			
2001	Checkered plate 1/4" & 3/8", 200 0 to 5000 S.F., bolted	LB	0.75	
2002	Checkered plate, 1/4" & 3/8", 20 00 to 5000 S.F., welded	LB	0.68	
2003	pit or trench cov and FR, 1/4" plate, 2' to 3' wide	SF	19.84	
2004	pit or trench cov&fr, 1/4"pl, 2'-3 'w, for galvanizing, add	LB	0.40	
2005	platforms, 1/4" pl, NO handrail s incld, rectangular	LB	1.13	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2006	platforms, 1/4" plate, NO handr ails incld, circular	LB	1.59	
05546 3600	Grating Frame			
3601	Grating frame aluminum for grat ings 1" to 1-1/2" deep	LF	7.72	
3602	Grating frame, aluminum for eac h corner, add	EA	5.70	
05547	Castings			
05548 0010	Construction castings			
0600	Construction castings, light sections, <150 lb, misc CI	LB	1.33	
1100	Construction castings, heavy sections, >150 lb, misc CI	LB	1.11	
05550	Metal Specialties			
05556 0009	Ornamental Louver			
0010	Ornamental louver, fixed, 4 to 10 SF, painted, incl frame	SF	32.47	1.52
0300	Ornamental louver, for fusible link type, add		1.40	
0310	Ornamental louver, for galvanized steel, add		6.98	
0320	Ornamental louver, for aluminum add		8.14	
0330	Ornamental louver, for bronze, add		8.14	
0340	Ornamental louver, for stainless steel, add		34.89	
0100	Ornamental louver, fixed, over 10 SF, painted, incl frame	SF	32.47	1.76
0300	Ornamental louver, for fusible link type, add		1.40	
0310	Ornamental louver, for galvanized steel, add		6.98	
0320	Ornamental louver, for aluminum add		8.14	
0330	Ornamental louver, for bronze, add		8.14	
0340	Ornamental louver, for stainless steel, add		34.89	
0150	Ornamental louver, incl frame, moveable, 4 to 10 SF, painted	SF	48.75	1.76
0300	Ornamental louver, for fusible link type, add		2.37	
0310	Ornamental louver, for galvanized steel, add		11.86	
0320	Ornamental louver, for aluminum add		13.84	
0330	Ornamental louver, for bronze, add		13.84	
0340	Ornamental louver, for stainless steel, add		59.31	
0200	Ornamental louver, incl frame, moveable, over 10 SF, painted	SF	48.75	1.93
0300	Ornamental louver, for fusible link type, add		2.37	
0310	Ornamental louver, for galvanized steel, add		11.86	
0320	Ornamental louver, for aluminum add		13.84	
0330	Ornamental louver, for bronze, add		13.84	
0340	Ornamental louver, for stainless steel, add		59.31	
05560 0009	Alloy steel chain			
0010	Alloy stl chain, w/access, 1/4", self-colored, cut lengths	CLF	447.29	
0020	Alloy stl chain, w/access, 3/8", self-colored, cut lengths	CLF	768.59	
0030	Alloy stl chain, w/access, 1/2", self-colored, cut lengths	CLF	1,227.73	
0040	Alloy stl chain, w/access, 5/8", self-colored, cut lengths	CLF	1,931.33	
0050	Alloy stl chain, w/access, 3/4", self-colored, cut lengths	CLF	2,892.15	
0060	Alloy stl chain, w/access, 7/8", self-colored, cut lengths	CLF	4,210.04	
0070	Alloy stl chain, w/access, 1", self-colored, cut lengths	CLF	6,444.63	
0080	Alloy stl chain, w/access, 1.25", self-colored, cut lengths	CLF	11,063.16	
05561 0009	Drip Pan			
0010	Stainless Steel Drip Pan 18 Ga	SF	20.45	
0020	Galvanized Steel Drip Pan	SF	14.98	
0030	Aluminum Drip Pan	SF	10.10	
0040	Plastic Drip Pan	SF	7.89	
05800	Expansion Control			
05810	Expansion Cover Assemblies			
05814 0010	Expansion joint assemblies			
05814 0199	Floor cover assemblies			
0200	Expansion joint assy, aluminum custom floor cover, 1" space	LF	23.74	1.15
0300	Expansion joint assy, bronze, custom floor cover, 1" space	LF	41.77	1.15
0310	Expansion joint assy, stainless, custom floor cover, 1" space	LF	41.77	1.15
0500	Expansion joint assy, aluminum custom floor cover, 2" space	LF	27.29	1.72
0600	Expansion joint assy, bronze, custom floor cover, 2" space	LF	41.53	1.72
0610	Expansion joint assy, stainless, custom floor cover, 2" space	LF	41.53	1.72
05814 0799	Wall and ceiling assemblies			
0800	Expansion joint assy, aluminum custom wall & clg, 1" space	LF	18.16	1.61
0900	Expansion joint assy, bronze, custom wall & clg, 1" space	LF	47.27	1.61
0910	Expansion joint assy, stainless, custom wall & clg, 1" space	LF	47.27	1.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1100	Expansion joint assy, aluminum custom wall & clg, 2" space	LF	26.14	2.37
1200	Expansion joint assy, bronze, custom wall & clg, 2" space	LF	38.64	2.37
1210	Expansion joint assy, stainless, custom wall & clg, 2" space	LF	38.64	2.37
05814 1999 Roof closures, aluminum flat roof, low profile				
2000	Expansion jt assy, low pf, 1" sp, cust, flat roof closure, al	LF	33.37	1.04
2050	Expansion jt assy, low pf, 2" sp, cust, flat roof closure, al	LF	50.67	1.35
05814 2299 Roof to wall, low profile				
2300	Expansion jt assy, low pr, 1" sp, cust, roof to wall, al	LF	20.18	0.93
2350	Expansion jt assy, low pr, 2" sp, cust, roof to wall, al	LF	29.27	1.09
05814 2999 Exterior wall to wall, aluminum				
3000	Expansion jt assy, 1" sp, cust, ext wall to wall, al	LF	23.17	1.93
3050	Expansion jt assy, 2" sp, cust, ext wall to wall, al	LF	29.27	1.89
05814 3999 Corner to flat wall, aluminum				
4000	Expansion jt assy, 1" sp, cust, corner to flat wall, al	LF	19.94	1.78
4050	Expansion jt assy, 2" sp, cust, corner to flat wall, al	LF	23.61	1.75

05900 Hydraulic Structures

05910 Hydraulic Structures & Gates

05911 0009 Sluice gates, cast iron

Note: Including Crank Operated Geared Gate Lift, Anchor Bolts, And Grouting.

0100	Hydraulic structures, 18" x 18", HD, self cont w/crank, sluice	EA	5,823.65	163.96
0110	Hydraulic structures, 24" x 24", HD, self cont w/crank, sluice	EA	7,493.52	220.92
0120	Hydraulic structures, 30" x 30", HD, self cont w/crank, sluice	EA	8,850.56	238.30
0130	Hydraulic structures, 36" x 36", HD, self cont w/crank, sluice	EA	10,204.71	263.18
0140	Hydraulic structures, 42" x 42", HD, self cont w/crank, sluice	EA	12,161.60	326.16
0150	Hydraulic structures, 48" x 48", HD, self cont w/crank, sluice	EA	14,158.11	461.49
0160	Hydraulic structures, 54" x 54", HD, self cont w/crank, sluice	EA	19,498.89	589.80
0170	Hydraulic structures, 60" x 60", HD, self cont w/crank, sluice	EA	23,520.73	1,005.95
0180	Hydraulic structures, 66" x 66", HD, self cont w/crank, sluice	EA	27,399.09	994.14
0190	Hydraulic structures, 72" x 72", HD, self cont w/crank, sluice	EA	32,364.19	1,489.43
0200	Hydraulic structures, 78" x 78", HD, self cont w/crank, sluice	EA	36,055.30	1,448.07
0210	Hydraulic structures, 84" x 84", HD, self cont w/crank, sluice	EA	47,732.08	2,315.71
0220	Hydraulic structures, 90" x 90", HD, self cont w/crank, sluice	EA	45,048.15	1,823.65
0230	Hydraulic structures, 96" x 96", HD, self cont w/crank, sluice	EA	50,258.58	1,799.69
0240	Hydraulic structures, 108" x 108", HD, self cont w/crank, sluice	EA	64,843.74	2,428.58
0250	Hydraulic structures, 120" x 120", HD, self cont w/crank, sluice	EA	86,022.26	3,776.93
0260	Hydraulic structures, 132" x 132", HD, self cont w/crank, sluice	EA	124,603.82	4,561.29

05912 0009 Slide gates, steel Including Anchor Bolts And Grouting.

0100	Hydraulic structures, ab & grout, 12" x 12", self cont,	EA	2,400.07	100.35
0110	Hydraulic structures, ab & grout, 18" x 18", self cont,	EA	2,790.76	101.07
0120	Hydraulic structures, ab & grout, 24" x 24", self cont,	EA	3,022.35	110.57
0130	Hydraulic structures, ab & grout, 30" x 30", self cont,	EA	3,509.19	129.12
0140	Hydraulic structures, ab & grout, 36" x 36", self cont,	EA	4,005.00	143.42
0150	Hydraulic structures, ab & grout, 42" x 42", self cont,	EA	4,629.59	192.51
0160	Hydraulic structures, ab & grout, 48" x 48", self cont,	EA	5,498.51	250.74
0170	Hydraulic structures, ab & grout, 54" x 54", self cont,	EA	7,061.01	256.94
0180	Hydraulic structures, ab & grout, 60" x 60", self cont,	EA	8,879.47	407.01
0190	Hydraulic structures, ab & grout, 72" x 72", self cont,	EA	13,241.10	818.28

05913 0009 Canal gates, cast iron body

0100	Hydraulic structures, canal gates, 12" dia	EA	947.43	68.45
0110	Hydraulic structures, canal gates, 18" dia	EA	1,290.06	73.20
0120	Hydraulic structures, canal gates, 24" dia	EA	2,062.26	97.68
0130	Hydraulic structures, canal gates, 30" dia	EA	2,508.20	93.88
0140	Hydraulic structures, canal gates, 36" dia	EA	3,011.38	114.47
0150	Hydraulic structures, canal gates, 42" dia	EA	4,896.13	146.41
0160	Hydraulic structures, canal gates, 48" dia	EA	6,246.54	214.68
0170	Hydraulic structures, canal gates, 54" dia	EA	10,333.42	318.79
0180	Hydraulic structures, canal gates, 60" dia	EA	13,269.15	502.30
0190	Hydraulic structures, canal gates, 66" dia	EA	13,362.97	439.45
0200	Hydraulic structures, canal gates, 72" dia	EA	18,569.81	685.26

05914 0009 Flap gates, aluminum

0100	Hydraulic structures, flap gates, aluminum 18" dia	EA	1,822.45	126.14
0110	Hydraulic structures, flap gates, aluminum 24" dia	EA	2,335.05	147.36

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0120	Hydraulic structures, flap gates, aluminum 30" dia	EA	2,866.50	164.46
0130	Hydraulic structures, flap gates, aluminum 36" dia	EA	3,724.74	220.38
0140	Hydraulic structures, flap gates, aluminum 42" dia	EA	4,619.86	196.45
0150	Hydraulic structures, flap gates, aluminum 48" dia	EA	5,469.31	259.97
0160	Hydraulic structures, flap gates, aluminum 54" dia	EA	8,489.08	360.91
0170	Hydraulic structures, flap gates, aluminum 60" dia	EA	11,349.79	486.23
0180	Hydraulic structures, flap gates, aluminum 66" dia	EA	15,099.39	603.19
0190	Hydraulic structures, flap gates, aluminum 72" dia	EA	16,789.39	1,058.93
05915 0009	Knife gates For Hub, Flange, Or Spigot Ends.			
0100	Hydr structures, w/handwheel oper for hub, 6" dia, knife gate	EA	823.51	16.99
0110	Hydr structures, w/handwheel oper for hub, 8" dia, knife gate	EA	1,097.05	19.37
0120	Hydr structures, w/handwheel oper for hub, 10" dia, knife	EA	1,447.65	28.16
0130	Hydr structures, w/handwheel oper for hub, 12" dia, knife	EA	2,316.99	48.56
0140	Hydr structures, w/handwheel oper for hub, 14" dia, knife	EA	3,087.10	55.43
0150	Hydr structures, w/handwheel oper for hub, 16" dia, knife	EA	4,138.18	59.92
0160	Hydr structures, w/handwheel oper for hub, 18" dia, knife	EA	5,092.15	57.60
0170	Hydr structures, w/handwheel oper for hub, 20" dia, knife	EA	5,088.97	50.54
0180	Hydr structures, w/handwheel oper for hub, 24" dia, knife	EA	6,205.33	52.27
0190	Hydr structures, w/handwheel oper for hub, 30" dia, knife	EA	10,699.61	66.00
0200	Hydr structures, w/handwheel oper for hub, 36" dia, knife	EA	14,375.02	101.42

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
06001 Fasteners & Adhesives				
06050 Fasteners & Adhesives				
06056 0010 Timber connectors				
06056 0030 Anchor bolts, threaded both ends, 2 nuts				
0040	Timber connectors, 1/2" dia, 4" L, anchor bolts, thd 2 ends, 2	EA	3.51	
0050	Timber connectors, 1/2" dia, 7.5" L, anchor bolts, thd 2 ends, 2	EA	3.85	
0060	Timber connectors, 3/4" dia, 7.5" L, anchor bolts, thd 2 ends, 2	EA	4.21	
0070	Timber connectors, 3/4" dia, 15" L, anchor bolts, thd 2 ends, 2	EA	5.83	
06056 1099 Framing anchors, 2 or 3 dimensional				
1100	Timber connectors, 10 ga, no nails, framing anchor, 2 or 3	EA	1.90	0.63
06056 1299 Joist and beam hangers				
1300	Timber connectors, for 2" x 4", 18 ga galv, joist & beam hanger	EA	1.98	0.73
1400	Timber connectors, 2" x 6" - 2" x 10", 18 ga galv, joist & beam	EA	2.18	0.70
1600	Timber connectors, 3" x 6" - 3" x 10", 16 ga galv, joist & beam	EA	3.88	0.93
1700	Timber connectors, 3" x 10" - 3" x 14", 16 ga galv, joist & beam	EA	4.24	1.00
1800	Timber connectors, 4" x 6" - 4" x 10", 16 ga galv, joist & beam	EA	3.68	0.87
1900	Timber connectors, 4" x 10" - 4" x 14", 16 ga galv, joist & beam	EA	4.39	0.93
06056 3199 Post framing				
3200	Timber connectors, 16 ga galv for 4" x 4" base, 2 piece, post	EA	6.67	1.03
3300	Timber connectors, post framing, cap	EA	4.33	0.90
06056 3499 Rafter anchors				
3500	Timber connectors, 5.25" L, 18 ga galv, 1.5" wide, rafter	EA	2.21	0.87
3600	Timber connectors, 10.75" L, 18 ga galv, 1.5" wide, rafter	EA	2.60	0.97
06056 3799 Shear plates				
3800	Timber connectors, shear plates, 2-5/8" dia	EA	3.59	0.57
3900	Timber connectors, shear plates, 4" dia	EA	5.51	0.50
06056 3999 Sill anchors				
4000	Timber connectors, embedded in conc or block, 18-5/8" L, sill	EA	3.28	1.03
06056 4099 Spike grids				
4100	Timber connectors, spike grids, 4" x 4", flat or curved	EA	2.62	0.70
06056 4399 Split rings				
4400	Timber connectors, split rings, 2.5" dia	EA	3.37	0.73
4500	Timber connectors, split rings, 4" dia	EA	4.18	0.73
06056 4699 Strap ties				
4700	Timber connectors, strap ties, 16 ga, 1-3/8" wide, 12" long	EA	2.37	0.57
4840	Timber connectors, strap ties, 14 ga, 1-3/8" wide, 12" long	EA	3.07	0.57
4850	Timber connectors, strap ties, 14 ga, 1-3/8" wide, 18" long	EA	3.62	0.56
4860	Timber connectors, strap ties, 14 ga, 1-3/8" wide, 24" long	EA	4.48	0.60
4870	Timber connectors, strap ties, 14 ga, 1-3/8" wide, 36" long	EA	5.54	0.70
06056 4999 Toothed rings				
5000	Timber connectors, toothed rings, 2-5/8" or 4" dia	EA	3.92	0.47
06056 5399 Washers				
5400	Timber connectors, washers, 2" x 2" x 1/8"	EA	0.22	
5500	Timber connectors, washers, 3" x 3" x 3/16"	EA	0.55	

06100 Rough Carpentry

06101 Wood Framing

Note: All Lumber Grades Are Premium Unless Explicitly Stated Otherwise. Dimensions Are Nominal

06103 0011 Blocking

06103 2600 Wood construction

2620	Blocking, miscellaneous, to wood construction, 2" x 4"	BF	2.11	0.73
2622	Blocking to Wood, 2x4 to 2x8 Fir Douglas Fir	BF	2.18	0.70
2624	Blocking to Steel, 2x4 to 2x8 Fir Douglas Fir	BF	2.37	0.77
2626	Blocking to Conc, 2x4 to 2x8 Fir Douglas Fir	BF	1.80	0.53
2628	Blocking to Wood, 2x4-2x8 Spruce And Hemlock	BF	2.21	0.70
2630	Blocking to Stl, 2x4-2x8 Spruce And Hemlock	BF	2.42	0.77
2632	Blocking to Conc, 2x4-2x8 Spruce And Hemlock	BF	1.85	0.50

06103 2720 Steel construction

2740	Blocking, miscellaneous, to steel construction, 2" x 4"	BF	2.44	0.87
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06103 2800 Concrete construction

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2820	Blocking, miscellaneous, to conc construction, 2" x 4"	BF	1.40	0.43
06106 0009	Bridging			
06106 0009	Wood			
0010	Bridging, wood, for joists 16" OC, 1" x 3"	EA	2.48	0.63
0100	Bridging, wood, for joists 16" OC, 2" x 3" bridging	EA	2.47	0.30
06106 0299	Steel			
0300	Bridging, steel, for 2" x 10" joists at 12" OC, galvanized, 18	EA	2.92	
0600	Bridging, steel, for 2" x 14" joists at 16" OC, galvanized, 18	EA	3.77	1.20
0700	Bridging, steel, for 2" x 14" joists at 24" OC, galvanized, 18	EA	4.16	1.30
06110 0010	Framing, beams & girders			
5000	Framing, beams & girders, triple, 2" x 6"	BF	0.83	0.26
5020	Framing, beams & girders, triple, 2" x 8"	BF	0.80	0.23
5040	Framing, beams & girders, triple, 2" x 10"	BF	0.85	0.20
06112 0010	Framing, ceilings			
6400	Framing, ceilings, suspended, 2" x 3"	BF	1.62	0.43
6450	Framing, ceilings, suspended, 2" x 4"	BF	1.44	0.40
06114 0010	Framing, joists			
2650	Framing, joists, 2" x 4"	BF	1.18	
2700	Framing, joists, 2" x 8"	BF	0.91	0.16
2740	Framing, joists, 2" x 12"	BF	1.01	0.16
2745	Composite Wood Joist 9-1/2" Deep		2,784.44	
2750	Composite Wood Joist 11-1/2" Deep		3,504.39	
2755	Composite Wood Joist 14" Deep		4,341.72	
2760	Composite Wood Joist 16" Deep		4,446.80	
2765	Open Web Joist 12" Deep		3,907.55	
2770	Open Web Joist 14" Deep		4,248.68	
2775	Open Web Joist 16" Deep		4,465.77	
2780	Open Web Joist 18" Deep		4,651.84	
06116 0010	Framing, miscellaneous			
06116 8799	Stair stringers			
8800	Framing, stair stringers, 2" x 10"	BF	3.06	1.00
8820	Framing, stair stringers, 2" x 12"	BF	2.76	0.80
06118 0010	Framing, columns			
06118 0010	Framing,			
0400	Framing, columns, 4" x 4"	BF	1.77	0.40
0460	Framing, columns, 6" x 6"	BF	2.51	0.47
06119 6999	Framing, roofs			
7000	Framing, roofs, rafters, to 4 in 12 pitch, 2" x 6"	BF	1.04	
7780	<i>Framing, roof rafters, for slopes steeper than 4 in 12, add</i>		0.16	
7790	<i>Framing, roof rafters, for dormers or complex roofs, add</i>		0.27	
7080	Framing, roofs, rafters, to 4 in 12 pitch, 2" x 10"	BF	1.02	
7780	<i>Framing, roof rafters, for slopes steeper than 4 in 12, add</i>		0.11	
7790	<i>Framing, roof rafters, for dormers or complex roofs, add</i>		0.19	
7100	Framing, roofs, rafters, to 4 in 12 pitch, 2" x 12"	BF	1.04	
7780	<i>Framing, roof rafters, for slopes steeper than 4 in 12, add</i>		0.10	
7790	<i>Framing, roof rafters, for dormers or complex roofs, add</i>		0.17	
06124 0010	Framing, sleepers			
0300	Framing, sleepers, on conc, treated, 1" x 2"	BF	2.35	0.84
0320	Framing, sleepers, on conc, treated, 1" x 3"	BF	2.05	0.67
0340	Framing, sleepers, on conc, treated, 2" x 4"	BF	1.31	0.40
0360	Framing, sleepers, on conc, treated, 2" x 6"	BF	1.18	0.30
06128 0010	Framing, walls			
06128 5999	Plates, untreated			
6000	Framing, walls, plates, untreated, 2" x 3"	BF	1.79	0.30
3010	<i>For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD</i>		0.21	
6020	Framing, walls, plates, untreated, 2" x 4"	BF	1.54	0.30
3010	<i>For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD</i>		0.21	
6040	Framing, walls, plates, untreated, 2" x 6"	BF	1.22	0.40
3010	<i>For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD</i>		0.20	
06128 6119	Studs, wall			
6120	Framing, walls, studs, 8' high wall, 2" x 3"	BF	1.44	0.27
3010	<i>For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD</i>		0.21	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6140	Framing, walls, studs, 8' high wall, 2" x 4"	BF	1.12	0.27
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.21	
6160	Framing, walls, studs, 8' high wall, 2" x 6"	BF	1.04	0.30
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.20	

06140 Roofs

06140 1000 On Roofs

1001	Strl Plywood on Roof, 3/8"Thk	SF	0.74	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.11	
2005	For Fire Retardant Treatment Add		0.28	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.01	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.02	
1002	Strl Plywood on Roof, 1/2"Thk	SF	0.85	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.13	
2005	For Fire Retardant Treatment Add		0.33	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
1003	Strl Plywood on Roof, 5/8"Thk	SF	0.98	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.16	
2005	For Fire Retardant Treatment Add		0.41	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
1004	Strl Plywood on Roof, 3/4"Thk	SF	1.12	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.19	
2005	For Fire Retardant Treatment Add		0.49	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.04	

06150 Sheathing

06154 0010 Sheathing

0310	Wall Sheathing, 1/4" Int Plywood	SF	0.93	0.10
2005	For Fire Retardant Treatment Add		0.34	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.17	
0320	Strl Plywood on Walls, 3/8"Thk	SF	0.85	0.10
2005	For Fire Retardant Treatment Add		0.28	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.01	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.02	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.14	
0330	Strl Plywood on Walls, 1/2"Thk	SF	0.95	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.13	
2005	For Fire Retardant Treatment Add		0.33	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.16	
0340	Strl Plywood on Walls, 5/8"Thk	SF	1.09	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.16	
2005	For Fire Retardant Treatment Add		0.41	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.20	
0350	Strl Plywood on Walls, 3/4"Thk	SF	1.24	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.19	
2005	For Fire Retardant Treatment Add		0.49	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.04	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.24	
0500	Sheathing, plywood on walls with exterior CDX, 3/8" thick	SF	0.81	0.17
0900	Sheathing, for exterior C-C grade plywood, add		0.06	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0920	Sheathing, for application to metal studs, joists, rafters, add		0.09	
1000	Sheathing, for shear wall construction, add		0.09	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.11	
2005	For Fire Retardant Treatment Add		0.29	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.01	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.02	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.14	
0600	Sheathing, plywood on walls with exterior CDX, 1/2" thick	SF	1.02	0.23
0900	Sheathing, for exterior C-C grade plywood, add		0.08	
0920	Sheathing, for application to metal studs, joists, rafters, add		0.09	
1000	Sheathing, for shear wall construction, add		0.09	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.17	
2005	For Fire Retardant Treatment Add		0.43	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.21	
0700	Sheathing, plywood on walls with exterior CDX, 5/8" thick	SF	1.03	0.23
0900	Sheathing, for exterior C-C grade plywood, add		0.08	
0920	Sheathing, for application to metal studs, joists, rafters, add		0.10	
1000	Sheathing, for shear wall construction, add		0.10	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.16	
2005	For Fire Retardant Treatment Add		0.41	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.02	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.03	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.20	
0800	Sheathing, plywood on walls with exterior CDX, 3/4" thick	SF	1.22	0.23
0900	Sheathing, for exterior C-C grade plywood, add		0.10	
0920	Sheathing, for application to metal studs, joists, rafters, add		0.11	
1000	Sheathing, for shear wall construction, add		0.11	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.20	
2005	For Fire Retardant Treatment Add		0.53	
3001	Quantity Discount For Plywood Purchases Of 3200 Sf To 6400 Sf		-0.01	
3002	Quantity Discount For Plywood Purchases Of 6401 Sf To 12800 Sf		-0.03	
3003	Quantity Discount For Plywood Purchases Over 12800 Sf		-0.04	
3010	For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.26	
2850	Sheathing, gypsum weatherproof, 1/2" thick	SF	0.64	0.20
2851	Asph Impreg Gypsum 1/2" Tk T & G Sheets Applied on Walls	SF	0.71	0.20

06160 Subfloor

06164 0009 Subfloor

06164 0009 Plywood

0010	Subfloor, plywood, CDX, 1/2" thick	SF	0.91	0.17
1000	Subfloor, for water resistant coating or treatment, add		0.03	
1010	Subfloor, for foil backing, add		0.06	
0200	Subfloor, plywood, CDX, 3/4" thick	SF	1.10	0.17
1000	Subfloor, for water resistant coating or treatment, add		0.04	
1010	Subfloor, for foil backing, add		0.07	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.20	
0350	Subfloor, plywood, 1/2" thick, structural use APA exposure 1	SF	0.88	0.13
1000	Subfloor, for water resistant coating or treatment, add		0.03	
1010	Subfloor, for foil backing, add		0.05	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.16	
0360	Subfloor, plywood, 3/4" thick, structural use APA exposure 1	SF	1.12	0.20
1000	Subfloor, for water resistant coating or treatment, add		0.04	
1010	Subfloor, for foil backing, add		0.07	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.21	
0382	Subfloor, 1/4" Tk Plywood Underlayment Grade	SF	0.86	0.10
1000	Subfloor, for water resistant coating or treatment, add		0.03	
1010	Subfloor, for foil backing, add		0.05	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.14	
0384	Subfloor, 3/8" Tk CDX Plywood	SF	0.92	0.10
1000	Subfloor, for water resistant coating or treatment, add		0.03	
1010	Subfloor, for foil backing, add		0.05	
1020	For OSB (Wafer Board) Class 2, Deduct		-0.15	
0386	Floor Decking, 1/2"A/C Fir Plywood	SF	1.68	0.13
1000	Subfloor, for water resistant coating or treatment, add		0.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
	1010 Subfloor, for foil backing, add		0.13	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.38	
0388	Subfloor, 3/8" Tk Plywood Underlayment Grade	SF	0.92	0.10
	1000 Subfloor, for water resistant coating or treatment, add		0.03	
	1010 Subfloor, for foil backing, add		0.05	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.15	
0390	Floor Decking, 5/8"A/C Fir Plywood	SF	1.95	0.17
	1000 Subfloor, for water resistant coating or treatment, add		0.09	
	1010 Subfloor, for foil backing, add		0.15	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.45	
0392	Subfloor, 1/2"Tk Plywood Underlayment Grade	SF	0.96	0.13
	1000 Subfloor, for water resistant coating or treatment, add		0.03	
	1010 Subfloor, for foil backing, add		0.06	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.17	
0394	Floor Decking, 3/4"A/C Fir Plywood	SF	2.24	0.20
	1000 Subfloor, for water resistant coating or treatment, add		0.11	
	1010 Subfloor, for foil backing, add		0.18	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.53	
0396	Subfloor, 5/8" Tk CDX Plywood	SF	1.24	0.17
	1000 Subfloor, for water resistant coating or treatment, add		0.05	
	1010 Subfloor, for foil backing, add		0.08	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.23	
0398	Subfloor, 1/2"Tk Plywood, Std Grde	SF	0.72	0.13
	1000 Subfloor, for water resistant coating or treatment, add		0.02	
	1010 Subfloor, for foil backing, add		0.03	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.10	
0402	Subfloor, 3/4"Tk Plywood, Std Grde	SF	1.04	0.20
	1000 Subfloor, for water resistant coating or treatment, add		0.03	
	1010 Subfloor, for foil backing, add		0.06	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.17	
0404	Subfloor, 3/4"Tk Plywood Underlayment Grade	SF	1.12	0.20
	1000 Subfloor, for water resistant coating or treatment, add		0.04	
	1010 Subfloor, for foil backing, add		0.07	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.20	
0406	Subfloor, 1-1/8"Tk Plywood, Std Gr	SF	1.23	0.23
	1000 Subfloor, for water resistant coating or treatment, add		0.04	
	1010 Subfloor, for foil backing, add		0.07	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.20	
0408	Subfloor, 1-1/8"Tk Plywood Underlayment Grade	SF	1.52	0.23
	1000 Subfloor, for water resistant coating or treatment, add		0.06	
	1010 Subfloor, for foil backing, add		0.10	
	1020 For OSB (Wafer Board) Class 2, Deduct		-0.30	
06164 0499	Boards			
0500	Subfloor, w/boards, 1" x 10", S4S, laid regular	SF	1.40	0.10
	1000 Subfloor, for water resistant coating or treatment, add		0.06	
	1010 Subfloor, for foil backing, add		0.09	
0600	Subfloor, w/boards, 1" x 10", S4S, laid diagonal	SF	1.51	0.13
	1000 Subfloor, for water resistant coating or treatment, add		0.06	
	1010 Subfloor, for foil backing, add		0.09	
0800	Subfloor, w/boards, 1" x 8", S4S, laid regular	SF	1.35	0.17
	1000 Subfloor, for water resistant coating or treatment, add		0.05	
	1010 Subfloor, for foil backing, add		0.08	
0900	Subfloor, w/boards, 1" x 8", S4S, laid diagonal	SF	1.44	0.20
	1000 Subfloor, for water resistant coating or treatment, add		0.05	
	1010 Subfloor, for foil backing, add		0.08	
06168 0004	Underlayment			
0005	Underlayment, plywood, underlayment grade, 11/32" thick	SF	0.77	0.13
0400	Underlayment, particle board, 1/4" thick	SF	0.69	0.13
0410	Floor Decking, 3/8"Particle Board Applied To Plywood Subfloor	SF	0.69	0.13
1100	Underlayment, hardboard, .215" thick, underlayment grade, 4' x 4'	SF	0.78	0.13
1200	Underlayment, hardboard, 1/4" thick, underlayment grade, 4' x 4'	SF	0.90	0.13
06177	Heavy Timber Construction			
06178 0009	Framing, heavy			
06178 0009	Beams			
0010	Framing, heavy, mill timber, beams, single 6" x 10"	BF	1.95	0.07
	3010 For Pressure Treated Wood, CCA, ACA, wet .4PCF ADD		0.57	
0100	Framing, heavy, mill timber, beams, single 8" x 16"	BF	2.11	0.07

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.65	
06178 0289	Columns			
0290	Framing, heavy, columns, strl grade, 1500f, 4" x 4"	BF	2.17	0.17
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.50	
0300	Framing, heavy, columns, strl grade, 1500f, 6" x 6"	BF	2.76	0.17
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.76	
0400	Framing, heavy, columns, strl grade, 1500f, 8" x 8"	BF	2.84	0.20
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.81	
0500	Framing, heavy, columns, strl grade, 1500f, 10" x 10"	BF	2.65	0.20
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.76	
0600	Framing, heavy, columns, strl grade, 1500f, 12" x 12"	BF	2.62	0.20
3010	For Pressure Treated Wood, CCA, ACA, wet .APCF ADD		0.76	

06181 Glue Laminated Structural Units

06181 1000 Glue Laminated Beams

06181 1010 Southern Yellow Pine

1012	3 X 14 Pine Glue Laminated Beam		30.86	2.94
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06181 1100 Southern Yellow Pine Or Hemlock

1102	3 X 14 Glue Laminated Beam	LF	15.18	
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06181 1200 Glue Laminated Structural Units

Note: Based On Southern Yellow Pine Or Hemlock Lumber In 2" Laminations W/ Waterproof Glue And Factor Applied Sealer

1201	Straight Beams For 20' To 60' Span	BF	2.65	
1301	For Fir, Add		0.09	
1302	For Oak, Add		0.18	
1202	Tudor Arches For 30' To 60' Spans	BF	7.17	
1301	For Fir, Add		0.48	
1302	For Oak, Add		0.96	
1203	Radial Arches For 60' To 120' Spans	BF	4.82	
1301	For Fir, Add		0.36	
1302	For Oak, Add		0.72	
1204	Bow String Trussess For 40' To 120' Spans	BF	3.42	
1301	For Fir, Add		0.23	
1302	For Oak, Add		0.47	
1205	Purlins Or Columns, 3-1/4"x7-1/2"	BF	3.88	
1301	For Fir, Add		0.20	
1302	For Oak, Add		0.40	
1206	Purlins Or Columns, 3-1/4"x9-1/4"	BF	4.17	
1301	For Fir, Add		0.23	
1302	For Oak, Add		0.45	
1207	Purlins Or Columns, 5-1/4"x9-1/4"	BF	8.29	
1301	For Fir, Add		0.39	
1302	For Oak, Add		0.78	
1208	Purlins Or Columns, 5-1/4"x13"	BF	9.08	
1301	For Fir, Add		0.44	
1302	For Oak, Add		0.89	

06181 1300 West Coast Douglas Fir 24F-V5

1305	2-1/2"x6" (3.6Lbs/Lf) H=155Psi E xt Glue		11.13	
1310	2-1/2"x9" (5.4Lbs/Lf) H=155Psi E xt Glue		15.22	
1315	2-1/2"x12" (7.1Lbs/Lf) H=155Psi Ext Glue		16.70	
1320	3-1/8"x6" (4.4Lbs/Lf) H=165Psi E xt Glue		13.73	
1325	3-1/8"x9" (6.6Lbs/Lf) H=165Psi E xt Glue		17.51	
1330	3-1/8"x10-1/2" Or 12" (8.0Lbs/Lf) H=165Psi Ext Glue		19.75	

06182 Glue Laminated Decking

06182 1000 Glue Laminated Decking

1001	2 To 4" Thick x 4" Wide	BF	1.47	
1101	For Fir, Add		0.05	
1102	For Oak, Add		0.11	
1002	2 To 4" Thick x 6" Wide	BF	1.41	
1101	For Fir, Add		0.05	
1102	For Oak, Add		0.11	
1003	2 To 4" Thick x 8" Wide	BF	1.33	
1101	For Fir, Add		0.05	
1102	For Oak, Add		0.10	

06189 Wood Trusses

06190 5000 Common wood

Note: Engineered By Fabricator. Includes All Gusset PLates, Connectors, Nails, Bridging, Bracing, Hold-Down Clips And Anchors In Place.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5010	Roof truss, 2" x 4", 1' overhang, 12' span, plate conn, 24" OC, 4/1	EA	47.82	17.61
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		1.42	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		2.83	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		4.25	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		5.66	
5040	Roof truss, 2" x 4", 1' overhang, 16' span, plate conn, 24" OC, 4/1	EA	56.91	19.38
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		1.77	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		3.55	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		5.32	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		7.09	
5050	Roof truss, 2" x 4", 1' overhang, 20' span, plate conn, 24" OC, 4/1	EA	63.99	19.61
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		1.83	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		3.67	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		5.50	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		7.33	
5100	Roof truss, 2" x 4", 1' overhang, 24' span, plate conn, 24" OC, 4/1	EA	71.95	23.37
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		2.19	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		4.37	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		6.56	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		8.74	
5200	Roof truss, 2" x 4", 1' overhang, 28' span, plate conn, 24" OC, 4/1	EA	83.81	24.60
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		2.59	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		5.19	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		7.78	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		10.37	
5250	Roof truss, 2" x 4", 1' overhang, 32' span, plate conn, 24" OC, 4/1	EA	106.85	30.10
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		3.65	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		7.30	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		10.95	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		14.60	
5300	Roof truss, 2" x 4", 1' overhang, 36' span, plate conn, 24" OC, 4/1	EA	124.14	33.24
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		4.37	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		8.73	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		13.10	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		17.46	
5330	Roof truss, 2" x 4", 1' overhang, 46' span, plate conn, 24" OC, 4/1	EA	158.15	42.47
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		5.62	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		11.24	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		16.86	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		22.47	
5340	Roof truss, 2" x 4", 1' overhang, 54' span, plate conn, 24" OC, 4/1	EA	200.24	49.88
5345	Roof truss, 2" x 4", 1' overhang, for 5 to 12 slope		7.37	
5346	Roof truss, 2" x 4", 1' overhang, for 6 to 12 slope		14.73	
5347	Roof truss, 2" x 4", 1' overhang, for 7 to 12 slope		22.10	
5348	Roof truss, 2" x 4", 1' overhang, for 8 to 12 slope		29.46	

06200 Finish Carpentry

06220 Millwork Moldings

06222 0010 Moldings, base

0500	Moldings, base, stock pine, 9/16" x 3.5"	LF	2.18	0.53
1200	Moldings, for finger joints, deduct		0.21	
1210	Moldings, for clear birch, add		0.54	
1220	Moldings, for clear mahogany, oak or walnut, add		1.61	
0550	Moldings, base, stock pine, 9/16" x 4.5"	LF	2.53	0.53
1200	Moldings, for finger joints, deduct		0.24	
1210	Moldings, for clear birch, add		0.60	
1220	Moldings, for clear mahogany, oak or walnut, add		1.80	
0560	Base Shoe, Oak, 3/4" x 1"	LF	2.24	0.54
0570	Trim Quarter Round, Pine, 1/2" x 1/2"	LF	1.78	0.54
0580	Trim Quarter Round, Pine, 3/4" x 3/4"	LF	1.98	0.54
0590	Door Molding, Pines, 1-1/8" wide, Plain	LF	1.82	0.54
0600	Door Moldings, Pines, 1-1/8" wide, Defaulted	LF	1.85	0.54
0610	Window Trim Pine Complete, 2-1/2" Wide	LF	2.52	0.54
0620	Shaped Molding 1"x8" White Pine, All Dimensions Nominal	LF	4.03	0.53
0630	Shaped Molding 1"x10" Birch, All Dimensions Are Nominal	LF	4.92	0.54
0640	1" X 2" Custom Shaped Pine	LF	3.08	0.54
0670	1" X 5" Custom Shaped Pine	LF	5.64	0.54

06226 0010 Moldings, exterior All Dimensions Are Nominal

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
06226 1499 Cornice, boards				
1500	Mldings, exterior, cornice, boards, pine, 1" x 2"	LF	1.03	0.23
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		0.44	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.11	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		0.41	
1600	Mldings, exterior, cornice, boards, pine, 1" x 4"	LF	1.44	0.33
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		0.74	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.19	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		0.66	
1700	Mldings, exterior, cornice, boards, pine, 1" x 6"	LF	1.65	0.37
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		1.16	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.29	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		0.98	
1800	Mldings, exterior, cornice, boards, pine, 1" x 8"	LF	2.04	0.30
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		1.42	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.36	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		1.20	
1900	Mldings, exterior, cornice, boards, pine, 1" x 10"	LF	2.52	0.33
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		2.08	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.52	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		1.71	
2000	Mldings, exterior, cornice, boards, pine, 1" x 12"	LF	2.59	0.33
4700	Mldings, exterior cornice, 1" boards, for redwood trim add		2.22	
4710	Mldings, exterior cornice, 1" boards, for birch, add		0.56	
4720	Mldings, ext cornice, 1" boards, for mahogany, oak or walnut, add		1.81	
2010	Trim Ext, Pine, Fascia, 1" x 6"	LF	2.99	0.30
2012	Trim Ext, Pine, Fascia, 1" x 8"	LF	3.23	0.30
06226 2200 Cedar Trim				
2201	2 X 4 Cedar Trim	LF	2.41	0.30
06226 2300 Oak Trim				
2301	1" X 8" Clear Oak Trim	LF	3.51	0.33
2302	1" X 8" Clear Oak Shelf	LF	6.00	0.33
06227 0010 Mldings, trim				
06227 0100 Cornices - All Dimensions Are Nominal, White				
0110	Crowns, 9/16"x 3-5/8" White Pine	LF	3.15	
0120	Crowns, 11/16"x 4-5/8" White Pine	LF	4.90	
0130	Dental, 1"x2" White Pine	LF	3.32	
0140	Cove, 9/16"x1-3/4" White Pine	LF	1.84	
0150	Cove, 11/16"x2-3/4" White Pine	LF	2.75	
06227 0799 Chair rail				
0800	Mldings, trim chair rail, stock pine, 5/8" x 2.5"	LF	1.81	0.27
0900	Mldings, trim chair rail, stock pine, 5/8" x 3.5"	LF	2.17	0.17
06227 0999 Closet pole				
1000	Mldings, trim closet pole, stock pine, 1-1/8" dia	LF	2.15	0.60
1100	Mldings, trim closet pole, fir, 1-5/8" dia	LF	2.46	0.40
06227 3799 Miscellaneous				
3800	Mldings, trim 1" x 1", misc, custom pine or cedar	LF	1.93	0.64
3970	Mldings, for finger joints, deduct		0.19	
3980	Mldings, for clear birch, add		0.47	
3990	Mldings, for clear mahogany, oak or walnut, add		1.41	
3900	Mldings, trim 1" x 3", misc, custom pine or cedar	LF	1.93	0.37
3970	Mldings, for finger joints, deduct		0.16	
3980	Mldings, for clear birch, add		0.41	
3990	Mldings, for clear mahogany, oak or walnut, add		1.23	
3950	Mldings, trim 1" x 4", misc, custom pine or cedar	LF	2.35	0.40
3970	Mldings, for finger joints, deduct		0.25	
3980	Mldings, for clear birch, add		0.62	
3990	Mldings, for clear mahogany, oak or walnut, add		1.86	
06230 Shelving				
06234 0009 Shelving				
06234 0009 Pine				
0010	Shelving, pine, clear grade, no edge band, 1" x 8"	LF	4.03	1.53
0400	Shelving, pine, for lumber edge band, by hand, add per LF		1.41	
0100	Shelving, pine, clear grade, no edge band, 1" x 10"	LF	4.73	1.76

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0400	Shelving, pine, for lumber edge band, by hand, add per LF		1.41	
0200	Shelving, pine, clear grade, no edge band, 1" x 12"	LF	5.70	2.10
0400	Shelving, pine, for lumber edge band, by hand, add per LF		1.41	
06234 0599	Plywood			
0600	Shelving, plywood, 3/4" thick w/lumber edge, 12" wide	LF	4.82	0.73
0700	Shelving, plywood, 3/4" thick w/lumber edge, 24" wide	LF	6.21	0.70
06234 0899	Bookcase			
0900	Shelving, bookcase, 8" deep, clear grade pine, shelves 12" OC	SF	7.90	1.36
1000	Shelving, bookcase, 12" deep, clear grade pine, shelves 12" OC	SF	8.86	1.37
1210	Shelving, for lumber edge band, by hand, add		1.41	
1220	Shelving, for prefinished shelves, add		9.52	
06234 1199	Adjustable closet rod and shelf			
1200	Shelving, adjustable closet rod & shelf, 12" wide, 3' long	EA	55.97	6.09
1210	Shelving, for lumber edge band, by hand, add		1.41	
1220	Shelving, for prefinished shelves, add		85.32	
1300	Shelving, adjustable closet rod & shelf, 12" wide, 8' long	EA	77.92	9.79
06234 1499	Prefinished shelves with supports			
1500	Shelving, prefinished shelves w/supports, stock, 8" wide	LF	7.29	1.10
1600	Shelving, prefinished shelves w/supports, stock, 10" wide	LF	7.97	1.16
1700	Shelving Prefinished shelves w/ Supports & HD Standards 12"wide	LF	7.42	
06239	Corian Horizontal Surfaces			
06239 1000	Corian Horizontal Surfaces			
1002	1/2" Methylenethacrylate Counter top, 18-24" WBacksplash	LF	72.35	
1003	1/2" Methylenethacrylate Counter top 24"-30" WBacksplash	LF	89.98	
06240	Plastic Laminate			
06242 0009	Counter top			
0100	Counter top, stock, maximum 24" wide w/backsplash, plastic lam	LF	24.83	4.46
0110	Cabinet Acc,Lam Plas Counter Top Custom Made With Back Splash	LF	24.83	4.46
1900	Counter top, stock, for cut outs, std, add	EA	10.93	
2000	Base Corner Cabinet	EA	36.41	2.90
2010	3/4" Plywood, Plas Lam Counter Top, W Metal Edge	SF	7.35	1.68
2020	1" Plywood, Plas Lam Counter Top W Metal Edge	SF	7.83	1.68
2030	1" Particle Board, Plas Lam Counter Top W Metal Edge	SF	6.91	1.68
2040	3/4" Plywood, Plas Lam Counter Top W Self Edge	SF	7.97	1.68
2050	1" Plywood, Plas Lam Counter Top W Self Edge	SF	8.33	1.68
06250	Prefinished Wood Paneling			
06250 1000	Plastic Laminate Applied To Substrate Only			
1000	Plastic Laminate Applied To Substrate Only. Prep & Cut Outs	SF	6.05	
06251 0010	Paneling, plywood			
06251 0099	Unfinished			
0100	Paneling plywood,natural, unfin, 1/4" thick, w/trim birch	SF	2.06	0.57
0800	Paneling, plywd, for waterproof glue, add		0.06	
0810	Paneling, plywd, for ceiling installation, add		0.36	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.13	
0830	Paneling, plywd, for glue down installation, add		0.10	
0840	Paneling, plywd, for lumber core, add		0.09	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.52	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.13	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.44	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.53	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.57	
0120	Paneling plywood, select, unfin, 1/4" thick, w/trim birch	SF	2.10	0.57
0800	Paneling, plywd, for waterproof glue, add		0.06	
0810	Paneling, plywd, for ceiling installation, add		0.36	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.13	
0830	Paneling, plywd, for glue down installation, add		0.11	
0840	Paneling, plywd, for lumber core, add		0.10	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.54	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.14	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.45	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.55	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.59	
0200	Paneling plywood, unfin, 1/4" thick, cedar, std grade	SF	2.53	0.80

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	Paneling, plywd, for waterproof glue, add		0.07	
0810	Paneling, plywd, for ceiling installation, add		0.45	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.17	
0830	Paneling, plywd, for glue down installation, add		0.13	
0840	Paneling, plywd, for lumber core, add		0.11	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.62	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.15	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.53	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.64	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.70	
0220	Paneling plywood, particle board, unfin, 1/4" thick, cedar	SF	2.14	0.80
0800	Paneling, plywd, for waterproof glue, add		0.04	
0810	Paneling, plywd, for ceiling installation, add		0.45	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.17	
0830	Paneling, plywd, for glue down installation, add		0.11	
0840	Paneling, plywd, for lumber core, add		0.07	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.38	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.06	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.40	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.47	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.50	
0300	Paneling plywood, grade AA, unfin, 1/4" thick, knotty pine	SF	2.78	0.17
0800	Paneling, plywd, for waterproof glue, add		0.10	
0810	Paneling, plywd, for ceiling installation, add		0.40	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.15	
0830	Paneling, plywd, for glue down installation, add		0.14	
0840	Paneling, plywd, for lumber core, add		0.16	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.87	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.27	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.65	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.81	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.88	
0320	Paneling plywood, grade AD, unfin, 1/4" thick, knotty pine	SF	2.28	0.13
0800	Paneling, plywd, for waterproof glue, add		0.07	
0810	Paneling, plywd, for ceiling installation, add		0.40	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.15	
0830	Paneling, plywd, for glue down installation, add		0.11	
0840	Paneling, plywd, for lumber core, add		0.10	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.57	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.14	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.48	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.59	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.63	
06251 3000	Plywood Prefinished WTrim 1/4 In Thick - Top Grade Paneling			
3001	1/4"Top Gr Plywood, Birch Veneer Prefinished w/Trim	SF	2.04	0.54
0800	Paneling, plywd, for waterproof glue, add		0.05	
0810	Paneling, plywd, for ceiling installation, add		0.40	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.15	
0830	Paneling, plywd, for glue down installation, add		0.10	
0840	Paneling, plywd, for lumber core, add		0.08	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.42	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.08	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.40	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.48	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.51	
3002	1/4"Top Gr Plywood, Cherry Veneer Prefinished w/Trim	SF	2.35	0.54
0800	Paneling, plywd, for waterproof glue, add		0.07	
0810	Paneling, plywd, for ceiling installation, add		0.40	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.15	
0830	Paneling, plywd, for glue down installation, add		0.12	
0840	Paneling, plywd, for lumber core, add		0.11	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.61	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.16	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.50	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.62	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.67	
3003	1/4"Top Gr Plywd, Chestnut Veneer Prefinished w/Trim	SF	2.34	0.67
0800	Paneling, plywd, for waterproof glue, add		0.05	
0810	Paneling, plywd, for ceiling installation, add		0.48	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.18	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0830	Paneling, plywd, for glue down installation, add		0.12	
0840	Paneling, plywd, for lumber core, add		0.08	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.44	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.07	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.44	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.53	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.56	
3004	1/4"Top Gr Plywood,Lauan Veneer Prefinished w/Trim	SF	1.66	0.50
0800	Paneling, plywd, for waterproof glue, add		0.03	
0810	Paneling, plywd, for ceiling installation, add		0.36	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.13	
0830	Paneling, plywd, for glue down installation, add		0.08	
0840	Paneling, plywd, for lumber core, add		0.05	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.28	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.03	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.30	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.35	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.37	
3005	1/4"Top Gr Plywood,Mahog Veneer Prefinished w/Trim	SF	3.24	0.57
0800	Paneling, plywd, for waterproof glue, add		0.12	
0810	Paneling, plywd, for ceiling installation, add		0.45	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.17	
0830	Paneling, plywd, for glue down installation, add		0.16	
0840	Paneling, plywd, for lumber core, add		0.19	
0850	Paneling, plywd, for 10' or 12' long panels, add		1.04	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.33	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.77	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.96	
0890	Paneling, plywd, for 3/4" thick paneling, add		1.05	
3006	1/4"Top Gr Plywd,Red Oak Veneer Prefinished w/Trim	SF	2.11	0.54
0800	Paneling, plywd, for waterproof glue, add		0.05	
0810	Paneling, plywd, for ceiling installation, add		0.40	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.15	
0830	Paneling, plywd, for glue down installation, add		0.11	
0840	Paneling, plywd, for lumber core, add		0.08	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.46	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.10	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.42	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.51	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.55	
3007	1/4"Top Gr Plywood,Pecan Veneer Prefinished w/Trim	SF	2.52	0.57
0800	Paneling, plywd, for waterproof glue, add		0.07	
0810	Paneling, plywd, for ceiling installation, add		0.45	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.17	
0830	Paneling, plywd, for glue down installation, add		0.13	
0840	Paneling, plywd, for lumber core, add		0.11	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.61	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.15	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.53	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.64	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.69	
3008	1/4"Top Gr Plywd,Rosewood Veneer Prefinished w/Trim	SF	3.81	0.73
0800	Paneling, plywd, for waterproof glue, add		0.14	
0810	Paneling, plywd, for ceiling installation, add		0.56	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.21	
0830	Paneling, plywd, for glue down installation, add		0.19	
0840	Paneling, plywd, for lumber core, add		0.21	
0850	Paneling, plywd, for 10' or 12' long panels, add		1.16	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.35	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.88	
0880	Paneling, plywd, for 5/8" thick paneling, add		1.09	
0890	Paneling, plywd, for 3/4" thick paneling, add		1.19	
3009	1/4"Top Gr Plywood,Teak Veneer Prefinished w/Trim	SF	4.19	0.53
0800	Paneling, plywd, for waterproof glue, add		0.19	
0810	Paneling, plywd, for ceiling installation, add		0.45	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.17	
0830	Paneling, plywd, for glue down installation, add		0.21	
0840	Paneling, plywd, for lumber core, add		0.30	
0850	Paneling, plywd, for 10' or 12' long panels, add		1.61	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0870	Paneling, plywd, for 1/2" thick paneling, add		1.09	
0880	Paneling, plywd, for 5/8" thick paneling, add		1.39	
0890	Paneling, plywd, for 3/4" thick paneling, add		1.53	
3011	1/4"Top Gr Plywood, Walnut Veneer Prefinished w/Trim	SF	1.81	0.47
0800	Paneling, plywd, for waterproof glue, add		0.04	
0810	Paneling, plywd, for ceiling installation, add		0.36	
0820	Paneling, plywd, for installation on metal studs or furring, add		0.13	
0830	Paneling, plywd, for glue down installation, add		0.09	
0840	Paneling, plywd, for lumber core, add		0.07	
0850	Paneling, plywd, for 10' or 12' long panels, add		0.37	
0860	Paneling, plywd, for 1/8" thick paneling, deduct		-0.07	
0870	Paneling, plywd, for 1/2" thick paneling, add		0.35	
0880	Paneling, plywd, for 5/8" thick paneling, add		0.42	
0890	Paneling, plywd, for 3/4" thick paneling, add		0.45	

06254 Prefinished Hardboard Panel

06255 0010 Paneling, hardboard

06255 0049 Tempered hardboard on wall wood furring

0050	Paneling hbrd, no furring/trim tempered, 1/8" thk	SF	1.40	0.37
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.20	
0100	Paneling hbrd, no furring/trim tempered, 1/4" thk	SF	1.45	0.50
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.23	
0200	Paneling hbrd, plstc face 1/4" thk, no furring/trim tempered	SF	2.03	0.50
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.10	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.58	

06255 0299 Tempered pegboard

0300	Paneling hbrd, 1/8" thk, no furring/trim tempered pegboard	SF	1.41	0.43
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.20	
0400	Paneling hbrd, 1/4" thk, no furring/trim tempered pegboard	SF	1.49	0.80
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.25	
0500	Paneling hbrd, plstc face 1/4" thk, no furring/trim	SF	2.10	0.80
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.11	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.62	

06255 0599 Untempered hardboard

0600	Paneling hbrd, natural finish, 1/8" thk, no furring/trim	SF	1.36	0.30
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.17	
0700	Paneling hbrd, natural finish, 1/4" thk, no furring/trim	SF	1.39	0.43
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.07	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.19	
0800	Paneling hbrd, plastic face 1/4" thk, no furring/trim	SF	1.63	0.43
2300	Paneling, hbrd, for ceiling installation, add		0.32	
2310	Paneling, hbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hbrd, for glue down installation, add		0.08	
2330	Paneling, hbrd, for 10' or 12' long panels, add		0.34	

06255 0899 Untempered pegboard

0900	Paneling hbrd, 1/8" thk, no furring/trim untempered	SF	1.40	0.30
2300	Paneling, hbrd, for ceiling installation, add		0.32	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2310	Paneling, hdbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hdbrd, for glue down installation, add		0.07	
2330	Paneling, hdbrd, for 10' or 12' long panels, add		0.20	
1000	Paneling hdbrd, 1/4" thk, no furring/trim untempered	SF	1.43	0.43
2300	Paneling, hdbrd, for ceiling installation, add		0.32	
2310	Paneling, hdbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hdbrd, for glue down installation, add		0.07	
2330	Paneling, hdbrd, for 10' or 12' long panels, add		0.22	
1100	Paneling hdbrd, plstc face 1/4"T, no furring/trim	SF	1.81	0.43
2300	Paneling, hdbrd, for ceiling installation, add		0.32	
2310	Paneling, hdbrd, for installation on metal studs or furring, add		0.12	
2320	Paneling, hdbrd, for glue down installation, add		0.09	
2330	Paneling, hdbrd, for 10' or 12' long panels, add		0.44	

06300 Wood Treatment

06310 Preservative Treatment

06312 0011 Lumber treatment

06312 0399 Fire retardant, wet

0400	Lumber treatment, fire retardant, wet	MBF	272.36	
1700	Lumber treatment, for full size rough lumber, add		54.47	
0410	Fire Retard Lumber, Wet	MBF	464.61	
1700	Lumber treatment, for full size rough lumber, add		92.92	

06312 1000 Creosote Preservative Treatment

1001	Creosote Treat, Dosage to 8 #/CF Preservative Treated Lumber	MBF	126.61	
1700	Lumber treatment, for full size rough lumber, add		25.32	
1002	Creosote Treat, Dosage to 10 #/CF Preservative Treated Lumber	MBF	151.93	
1700	Lumber treatment, for full size rough lumber, add		30.39	

06312 1199 Oil borne preservative

1200	Lumber treatment, oil borne preservative (pentachlorophenol)	MBF	194.79	
1700	Lumber treatment, for full size rough lumber, add		38.96	

06312 1249 Water borne preservative

1250	Lumber treatment, water borne preservative (.40 CCA)	MBF	106.96	
1700	Lumber treatment, for full size rough lumber, add		21.39	
1260	Salt Treat, Oil Borne, 12# Retent, Preserv Treat Lumber	MBF	186.42	
1700	Lumber treatment, for full size rough lumber, add		37.28	
1270	Salt Treat, Water Borne, 40# Retent, Preserv Treat Lumber	MBF	133.16	
1700	Lumber treatment, for full size rough lumber, add		26.63	
1280	Salt Water Treatment For	MBF	133.16	
1700	Lumber treatment, for full size rough lumber, add		26.63	

06400 Architectural Woodwork

06401 Custom Casework

06401 2300 Cabinet Hardware

2301	Cabinet hardware, catches, minimum	EA	0.88	
2302	Cabinet hardware, catches, average	EA	2.53	
2303	Cabinet hardware, catches, maximum	EA	4.72	
2304	Cabinet hardware, handles and pulls, projecting, metal, minimum	EA	1.79	
2305	Cabinet hardware, handles and pulls, projecting, metal, average	EA	3.59	
2306	Cabinet hardware, handles and pulls, projecting, metal, maximum	EA	8.03	
2307	Cabinet hardware, handles and pulls, projecting, wood, minimum	EA	1.79	
2308	Cabinet hardware, handles and pulls, projecting, wood, average	EA	2.48	
2309	Cabinet hardware, handles and pulls, projecting, wood, maximum	EA	4.80	
2310	handles and pulls, projecting, flush, metal, minimum	EA	1.72	
2311	handles and pulls, projecting, flush, metal, avg	EA	3.58	
2312	handles and pulls, projecting, flush, metal, maximum	EA	11.25	
2313	Cabinet hardware, drawer tracks/ glides, minimum	PR	6.58	
2314	Cabinet hardware, drawer tracks/ glides, average	PR	11.04	
2315	Cabinet hardware, drawer tracks/ glides, maximum	PR	18.61	
2316	Cabinet hardware, cabinet hinges, minimum	PR	1.68	
2317	Cabinet hardware, cabinet hinges, average	PR	2.98	
2318	Cabinet hardware, cabinet hinges, maximum	PR	6.95	
2319	Cabinet hardware, cabinet locks, minimum	EA	4.35	
2320	Cabinet hardware, cabinet locks, average	EA	7.18	
2321	Cabinet hardware, cabinet locks, maximum	EA	16.07	

06402 0011 Cabinets

Note: Includes all hinges, pulls, handles, rails, stops, and any other appurtanences required for complete installation.

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
06402 0700 Base Cabinets, Hardwood				
06402 0799 One top drawer, one door below				
0800	Cab, base,hdwd,no top,12" W, 24" D,35" H,1 top dwr,1 dr blw,	LF	123.99	9.48
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		30.76	
0820	Cab, base,hdwd,no top,15" W, 24" D,35" H,1 top dwr,1 dr blw,	LF	106.74	9.49
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		26.70	
0840	Cab, base,hdwd,no top,18" W, 24" D,35" H,1 top dwr,1 dr blw,	LF	90.46	12.51
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		22.57	
0880	Cab, base,hdwd,no top,24" W, 24" D,35" H,1 top dwr,1 dr blw,	LF	87.55	20.50
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		22.68	
06402 1199 Base Cabinets 30 In High 24 In Deep				
Note: Double Drawer And Double Door Type Units Prefinished Hardwoods With Raised Panel Doors And Solid Drawer Fronts, Not Including Tops.				
06402 1199 Two top drawers, two doors below				
1199	2-Drawer/2-Door Cabinet,24"W	EA	145.71	33.31
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		28.78	
1200	Cab, base, 2 doors, 27" W, hdwd, 24" D, 35" H, prefin, 2	LF	80.79	6.66
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		21.04	
1202	2-Drawer/2-Door Cabinet,30"W	EA	209.10	7.17
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		46.26	
1220	Cab, base, 2 doors, 30" W, hdwd, 24" D, 35" H, prefin, 2	LF	82.29	6.65
1400	<i>Cabinets, kitchen base, for 4 drawer unit, add</i>		21.70	
1230	Base Sink Cabinet	EA	117.31	16.77
1240	Double Oven Cabinet	EA	133.18	20.12
06402 1400 Double Drawer And Double Door Type Units				
1401	2-Drawer/2-Door Cabinet,to 30"W	LF	67.96	8.91
1402	2-Drawer/2-Door Cabinet,30-36"W	LF	91.28	7.77
1403	2-Drawer/2-Door Cabinet,36-42"W	LF	90.55	6.86
1404	2-Drawer/2-Door Cabinet,42-48"W	LF	97.34	6.36
06402 1999 Corner base cabinets				
2000	Cab, base, std, hdwd, 24" D, 35" H, prefin, corner, 36" W	EA	185.92	16.84
2100	Cab, base, lazy Susan w/revolving dr,hdwd,24" D, 35"	EA	251.23	16.84
06402 2500 Hbspital Casework				
2510	Cabinets Base Cabinate Laminat d Pl	LF	217.81	
2512	Stainless Steel Base Cabinets	LF	260.87	
2514	For All Drawers Add	LF	8.92	
2516	Cabinet Base Trim 4" High Enama led Steel	LF	28.78	
2518	Cabinet Base Trim 4" High Stain less Steel	LF	42.10	
2520	Countertop Laminated Plastic No Backsplash	LF	40.84	
2522	Countertop Laminated Plastic W Backsplash	LF	48.02	
2524	For Sink cutout add	EA	34.50	
2526	Stainless Steel Counter Top	LF	94.15	
2528	For Drop In Stainless 43"x21" Si nk, Add	EA	425.46	
2530	Nurses Station Door Type Laminat ed Plastic	EA	245.49	
2532	Nurses Station Door Type Enameld Steel	EA	218.83	
2534	Nurses Station Door Type Stainle ss Steel	EA	276.25	
2536	For Drawer Type, Add	EA	82.02	
2538	Wall Cabinets Laminated Plastic	LF	159.23	
2540	Wall Cabinets Enameled Steel	LF	174.60	
2542	Wall Cabinets Stainless Steel	LF	255.59	
2544	For Glass Doors, Add	LF	21.02	
2546	Kitchen Base Cabinets, Metal Min	LF	57.16	
2548	Kitchen Base Cabinets, Metal Max	LF	115.37	
2550	Wall Cabinets, Metal Min	LF	57.16	
2552	Wall Cabinets, Metal Max	LF	115.37	
06402 3000 Vanity Bases 30" High, 21" Deep				
3001	Vanity Bases, 2 Door, 30"H x 21" D x 24" Wide	EA	237.72	34.99
3002	Vanity Bases, 2 Door, 30"H x 21" D x 30" Wide	EA	269.66	34.99
3003	Vanity Bases, 2 Door, 30"H x 21" D x 36" Wide	EA	353.03	42.72
3004	Vanity Bases, 2 Door, 30"H x 21" D x 48" Wide	EA	483.72	42.72
3102	Built-In-Place Base Cabinet, 15-18" Width	LF	77.63	37.20
3103	Built-In-Place, Base Cabinet, 18-24" width	LF	93.46	37.20
3104	Built-In-Place, Base Cabinet, 24-30" width	LF	107.23	37.20
3204	Built-In-Place 2-Drawer/2-Door Cabinet, 42-48" W	LF	150.13	37.20
06402 4000 Kitchen wall cabinets, hardwood				
Note: With Raised Panel Doors And Solid Drawer Fronts, 2 Doors Prefinished				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
06402 4049 12" high				
4050	Cabinets, kitchen wall, 30" wide, hdwd, 12" deep w/2 doors,	LF	42.24	4.36
4070	Cabinets, kitchen wall, 33" wide, hdwd, 12" deep w/2 doors,	LF	38.88	4.36
4100	Cabinets, kitchen wall, 36" wide, hdwd, 12" deep w/2 doors,	LF	40.66	4.36
06402 4399 15" high				
4400	Cabinets, kitchen wall, 30" wide, hdwd, 12" deep w/2 doors,	LF	43.59	6.95
4440	Cabinets, kitchen wall, 36" wide, hdwd, 12" deep w/2 doors,	LF	38.95	4.26
06402 4649 24" high				
4650	Cabinets, kitchen wall, 24" wide, hdwd, 12" deep w/2 doors,	LF	69.53	5.46
4700	Cabinets, kitchen wall, 30" wide, hdwd, 12" deep w/2 doors,	LF	57.68	5.46
4720	Cabinets, kitchen wall, 36" wide, hdwd, 12" deep w/2 doors,	LF	51.31	4.16
4740	Cabinets, kitchen wall, 42" wide, hdwd, 12" deep w/2 doors,	LF	46.40	3.53
4800	Cabinets, kitchen wall, 48" wide, hdwd, 12" deep w/2 doors,	LF	46.80	3.53
06402 4999 30" high				
5000	Cabinets, kitchen wall, 12" wide, hdwd, 12" deep, 1 door,	LF	101.60	8.55
5020	Cabinets, kitchen wall, 15" wide, hdwd, 12" deep, 1 door,	LF	86.03	8.56
5040	Cabinets, kitchen wall, 18" wide, hdwd, 12" deep, 1 door,	LF	75.34	11.31
5060	Cabinets, kitchen wall, 24" wide, hdwd, 12" deep, 1 door,	LF	62.71	11.49
5100	Cabinets, kitchen wall, 30" wide, hdwd, 12" deep, 1 door,	LF	59.48	11.65
5280	Cabinets, kitchen wall, 24" wide, hdwd, 12" deep, 2 doors,	LF	66.28	3.99
5320	Cabinets, kitchen wall, 30" wide, hdwd, 12" deep, 2 doors,	LF	60.44	4.93
5340	Cabinets, kitchen wall, 36" wide, hdwd, 12" deep, 2 doors,	LF	54.97	6.46
5360	Cabinets, kitchen wall, 42" wide, hdwd, 12" deep, 2 doors,	LF	50.72	8.78
5380	Cabinets, kitchen wall, 48" wide, hdwd, 12" deep, 2 doors,	LF	47.76	12.14
06402 5500 Wall Cabinets 36" High, 13" Deep				
06402 5510 Single Door Type Units				
5520	Built In Place Single Door Wall Cabinet, to 15" W	LF	99.44	39.61
5530	Built In Place Single Door Wall Cabinet, 15-18" W	LF	102.97	39.61
5540	Built In Place Single Door Wall Cabinet, 18-24" W	LF	104.65	39.61
5550	Built In Place Single Door Wall Cabinet, 24-30" W	LF	108.68	39.61
06402 5600 Double Door Type Units				
5610	Built In Place Double Door Wall Cabinet, to 24" W	LF	113.89	54.77
5620	Built In Place Double Door Wall Cabinet, 24-30" W	LF	117.97	54.77
5630	Built In Place Double Door Wall Cabinet, 30-36" W	LF	122.03	54.77
5640	Built In Place Double Door Wall Cabinet, 36-42" W	LF	124.90	54.78
5650	Built In Place Double Door Wall Cabinet, 42-48" W	LF	127.77	54.77
06402 5999 Corner wall				
6000	Cabinets, kitchen wall, hdwd, corner, 30" high, 24" wide	EA	154.65	36.01
6500	Cabinets, kitchen wall, hdwd, corner, revolving lazy Susan	EA	201.11	20.67
06402 6999 Broom cabinet				
7000	Cabinets, broom cabinet, 84" high, 24" deep, 18" wide	EA	246.20	12.48
06402 7400 Microwave Cabinet				
06402 7500 Removal & Reinstallation Of Cabinet Or Counters				
Note: Including Storage, Cleaning And Misc. Supply Materials				
7501	Remove & Reinstall Wood Base Cabinets	LF	83.70	
7502	Remove & Reinstall Wall Cabinets	LF	55.80	
7503	Remove & Reinstall Plastic Laminated Countertops	LF	14.15	
7510	Microwave Cabinet	EA	90.60	
06410 Acrylic Polymer Composi Solid Surface Material				
06410 1000 Counter/Vanity Tops 1/2" Thick Upto 25" Wide Not				
1001	Counter/Vanity Tops 1/2" Thick Upto 25" wide Std&Solid Colors	LF	100.47	
1111	For 4 Drawer Unit Add		159.94	
1112	For Plastic Laminate On Particle Board, Deduct		-42.38	
06410 2000 Solid Surfacing Accesories				
2001	4" Back splash	LF	8.69	
1112	For Plastic Laminate On Particle Board, Deduct		-4.16	
2002	4" To 6" Front Skirt	LF	13.01	
1112	For Plastic Laminate On Particle Board, Deduct		-5.54	
2003	Double Thickness Radiused Front Edge	LF	4.55	
1112	For Plastic Laminate On Particle Board, Deduct		-0.98	
2004	Sink Integral Undermount, Solid Color Up to 350 Square Inches	EA	256.30	
1112	For Plastic Laminate On Particle Board, Deduct		-135.84	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2005	Sink Integral Undermount, Solid 351 To 600 Square Inches <i>1112 For Plastic Laminate On Particle Board, Deduct</i>	EA	384.45 -203.76	
06410 3000	1/4" Thick Veneer Panel Note: Includes Surface Preparation.			
3001	1/4" Thick Wood Veneer Panel <i>1112 For Plastic Laminate On Particle Board, Deduct</i>	SF	15.06 -5.43	
06430	Stairwork & Handrails			
06438 0011	Stair parts			
06438 1119	Handrail, with supports			
1120	Stair parts, handrail, 2" x 8" red oak, horizontal, w/supports	LF	21.70	1.63
1130	Stair parts, handrail, 2" x 8" red oak, raking, w/supports	LF	22.55	1.86
1140	Stair parts, handrail, 2" x 9.5" red oak, horizontal, w/supports	LF	27.66	1.70
1150	Stair parts, handrail, 2" x 9.5" red oak, raking, w/supports	LF	28.44	1.90
1160	Oak Gooseneck, 1 Riser	LF	60.89	
1170	Oak Gooseneck, 2 Riser	LF	71.37	
1180	Oak Handrail, 2-1/2"x3" W/ Quarter Turn	LF	12.41	1.24
1185	30" Baluster, Pine		15.69	7.37
06438 1190	Handrails (Pine, Fir, Interior Grade Or Treated Exterior)			
1190	30" Baluster, Birch		17.90	7.37
1200	Wood Handrail, 1-1/2" x 1-3/4"	LF	4.98	
1210	Wood Handrail, 1-1/2" x 2-1/2"	LF	5.98	
06438 5103	Wall mounted handrail, with brackets			
5104	Stair parts, 1.5"x4.5", pine/fir, wall mounted handrail,	LF	4.80	0.87
5150	Stair parts, 1.5" x 4.5", oak, wall mounted handrail,	LF	12.47	2.83
5210	30" Baluster, Pine	EA	18.11	2.41
5220	30" Baluster, Birch, Oak Or Fir	EA	21.71	2.41
5230	Picket Or Spindle, Pine	LF	5.89	0.74
5240	Picket Or Spindle, Birch, Oak Or Fir	LF	7.00	0.74
5250	Newels, 3-1/4" Wide, Starting	EA	110.15	
5260	Newels, 3-1/4" Wide, Landing	EA	161.56	
06500	Structural Plastics			
06510	Fiberglass			
06514 0010	Castings, fiberglass			
06514 0099	Angles			
0100	Castings fiberglass, angle, 1" x 1" x 1/8" thick	LF	3.43	1.00
0120	Castings fiberglass, angle, 3" x 3" x 1/4" thick	LF	7.21	1.26
0140	Castings fiberglass, angle, 4" x 4" x 1/4" thick	LF	8.45	1.26
0160	Castings fiberglass, angle, 4" x 4" x 3/8" thick	LF	11.55	1.26
0180	Castings fiberglass, angle, 6" x 6" x 1/2" thick	LF	20.59	1.54
06514 0999	Flat sheet			
1000	Castings fiberglass, flat sheet, 1/8" thick	SF	8.53	2.12
1020	Castings fiberglass, flat sheet, 1/4" thick	SF	13.31	2.62
1040	Castings fiberglass, flat sheet, 3/8" thick	SF	20.32	3.26
1060	Castings fiberglass, flat sheet, 1/2" thick	SF	25.90	4.30
06514 1999	Handrail			
2000	Castings fiberglass, 2" dia rails pickets 5' 0C, 42" high,	LF	53.42	8.29
06514 2999	Round bar			
3000	Castings fiberglass, round bar, 1/4" dia	LF	2.78	1.11
3020	Castings fiberglass, round bar, 1/2" dia	LF	3.58	1.22
3040	Castings fiberglass, round bar, 3/4" dia	LF	4.57	1.29
3060	Castings fiberglass, round bar, 1" dia	LF	6.54	1.62
3080	Castings fiberglass, round bar, 1.25" dia	LF	7.00	1.36
3100	Castings fiberglass, round bar, 1.5" dia	LF	8.19	1.40
06514 3499	Round tube			
3500	Castings fiberglass, round tube, 1" dia x 1/8" thick	LF	4.00	1.07
3520	Castings fiberglass, round tube, 2" dia x 1/4" thick	LF	7.49	1.22
3540	Castings fiberglass, round tube, 3" dia x 1/4" thick	LF	12.55	1.90
06514 3999	Square bar			
4000	Castings fiberglass, square bar, 1/2" square	LF	5.93	1.76
4020	Castings fiberglass, square bar, 1" square	LF	6.74	1.26

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4040	Castings fiberglass, square bar, 1.5" square	LF	10.72	1.40
06514 4499	Square tube			
4500	Castings fiberglass, square tube, 1" x 1" x 1/8" thick	LF	4.06	1.04
4520	Castings fiberglass, square tube, 2" x 2" x 1/8" thick	LF	6.03	1.26
4540	Castings fiberglass, square tube, 3" x 3" x 1/4" thick	LF	12.20	1.51
06514 4999	Threaded rod			
5000	Castings fiberglass, threaded rod, 3/8" dia	LF	4.89	0.79
5020	Castings fiberglass, threaded rod, 1/2" dia	LF	5.22	0.79
5040	Castings fiberglass, threaded rod, 5/8" dia	LF	5.85	0.90
5060	Castings fiberglass, threaded rod, 3/4" dia	LF	6.38	0.86
06514 5999	Wide flange beam			
6000	Castings fiberglass, wide flange beam 4" x 4" x 1/4" thick	LF	12.58	2.12
6020	Castings fiberglass, wide flange beam 6" x 6" x 1/4" thick	LF	19.86	2.55
6040	Castings fiberglass, wide flange beam 8" x 8" x 3/8" thick	LF	34.11	3.12
06518 0010	Grating, fiberglass			
06518 0100	Molded			
06518 0139	Green (for moderately corrosive environment) Corrosive Environments - Green Colored			
0140	Grating fbgl, molded, 1" T, 1" x 4" mesh, grn (mod crsv env)	SF	11.89	0.43
0180	Grating fbgl, molded, 1" T, 1.5" sq mesh, grn (mod crsv env)	SF	17.05	0.61
0220	Grating fbgl, molded, 1.25" T, 1.5" sq mesh, grn (mod crsv env)	SF	15.27	0.54
0260	Grating fbgl, molded, 1.5" T, 1.5" sq mesh, grn (mod crsv env)	SF	18.45	0.61
0300	Grating fbgl, molded, 2" T, 2" sq mesh, grn (mod crsv env)	SF	25.14	1.00
06518 1000	Orange (for highly corrosive environment)			
1040	Grating fbgl, molded, 1" T, 1" x 4" mesh, orange (hi crsv env)	SF	14.04	0.46
1080	Grating fbgl, molded, 1" T, 1.5" sq mesh, orange (hi crsv)	SF	18.93	0.64
1120	Grating fbgl, molded, 1.25" T, 1.5" sq mesh, orange (hi crsv)	SF	20.81	0.64
1160	Grating fbgl, molded, 1.5" T, 1.5" sq mesh, orange (hi crsv)	SF	21.27	0.64
1200	Grating fbgl, molded, 2" T, 2" sq mesh, orange (hi crsv env)	SF	24.84	0.90
06518 3000	Pultruded			
06518 3039	Green (for moderately corrosive environment)			
3040	Grating fbgl, pultruded, 1" T, 1" OC bars, green (mod crsv env)	SF	17.15	0.57
3080	Grating fbgl, pultruded, 1.5" T, 1" OC bars, green (mod crsv)	SF	15.87	0.68
3120	Grating fbgl, pultruded, 1" T, 1.5" OC bars, green (mod crsv)	SF	13.58	0.57
3160	Grating fbgl, pultruded, 1.5" T, 1.5" OC bars, green (mod crsv)	SF	18.17	0.68
06518 3999	Grating support legs			
4000	Grating fbgl, grating support legs, fixed height, no base	EA	44.42	
4040	Grating fbgl, grating support legs, fixed height, w/base	EA	38.29	
4080	Grating fbgl, grating support legs, adjustable to 60"	EA	65.20	
06519 0010	Stair tread, fiberglass			
0100	Stair tread, fiberglass, 10.5" deep, 24" wide	EA	50.55	4.41
0140	Stair tread, fiberglass, 10.5" deep, 30" wide	EA	60.42	4.41
0180	Stair tread, fiberglass, 10.5" deep, 36" wide	EA	70.34	4.41
0220	Stair tread, fiberglass, 10.5" deep, 42" wide	EA	80.19	4.38
06600	Plastic Fabrications			
06610	Glass Fiber & Resin Fabrications			
06612 0009	Netting, flexible plastic, for bird control And Marine Predators			
0011	Netting, flexible plastic, 1/8" square mesh, for bird control	SF	0.98	0.06
0100	Netting, flexible plastic, 1/4" square mesh, for bird control	SF	0.35	0.06
0120	Netting, flexible plastic, 1/2" square mesh, for bird control	SF	0.32	0.06
0140	Netting, flexible plastic, 5/8" x 3/4" mesh, for bird control	SF	0.26	0.06
0160	Netting, flexible plastic, 1.25" x 1.5" mesh, for bird control	SF	0.50	0.06
0200	Netting, flexible plastic, 4" square mesh, for bird control	SF	0.27	0.06
1000	Netting, flexible plastic, poly clips	EA	0.30	
06612 5200	Fiberglass Netting			
5201	Flexible Fiberglass Netting, 1/2" x 1/2" Mesh, Clear	SF	0.27	0.06
5202	Flexible Fiberglass Netting, 1/2" x 2" Mesh, Clear	SF	0.27	0.06
5203	Flexible Fiberglass Netting, 3/4" x 5/8" Mesh, Clear	SF	0.27	0.06
5204	Flexible Fiberglass Netting, 7/8" x 7/8" Mesh, Clear	SF	0.27	0.06
5205	Flexible Fiberglass Netting, 1" x 1" Mesh, Clear	SF	0.27	0.06
5206	Flexible Fiberglass Netting, 1/2" x 1/2" Mesh, Green	SF	0.25	0.06
5207	Flexible Fiberglass Netting, 1/2" x 2" Mesh, Green	SF	0.25	0.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5208	Flexible Fiberglass Netting, 3/4" x 5/8" Mesh, Green	SF	0.25	0.06
5209	Flexible Fiberglass Netting, 7/8" x 7/8" Mesh, Green	SF	0.25	0.06
5211	Flexible Fiberglass Netting, 1" x 1" Mesh, Green	SF	0.25	0.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07100 Waterproofing & Dampproofing				
Note: The Following Prices Are For Application To Vertical (Walls And Foundations) Surfaces. For Horizontal (Flat) Surfaces Apply The Appropriate Modifier To Reduce The Labor Cost.				
07110 Sheet Waterproofing				
07112 0009 Elastomeric waterproofing				
0090	Elastomeric wtrprfng, EPDM plain, 45 mil thk	CSF	168.31	48.69
1870	Elastomeric waterproofing, for joint taping, add		27.09	
1880	Elastomeric waterproofing, for each additional ply, add		134.65	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.18	
0100	Elastomeric wtrprfng, EPDM plain, 60 mil thk	CSF	209.76	54.44
1870	Elastomeric waterproofing, for joint taping, add		29.50	
1880	Elastomeric waterproofing, for each additional ply, add		167.81	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.40	
0300	Elastomeric wtrprfng, 45 mil thk, EPDM nylon reinf sheets	CSF	203.62	55.52
1870	Elastomeric waterproofing, for joint taping, add		28.86	
1880	Elastomeric waterproofing, for each additional ply, add		162.90	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.18	
0400	Elastomeric wtrprfng, 60 mil thk, EPDM nylon reinf sheets	CSF	252.13	64.48
1870	Elastomeric waterproofing, for joint taping, add		31.61	
1880	Elastomeric waterproofing, for each additional ply, add		201.70	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.40	
1200	Elastomeric wtrprfng, 45 mil thk, neoprene sheets, plain	CSF	193.03	37.59
1870	Elastomeric waterproofing, for joint taping, add		28.33	
1880	Elastomeric waterproofing, for each additional ply, add		154.42	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.18	
1300	Elastomeric wtrprfng, 60 mil thk, neoprene sheets, plain	CSF	241.54	34.80
1870	Elastomeric waterproofing, for joint taping, add		31.08	
1880	Elastomeric waterproofing, for each additional ply, add		193.23	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.40	
1500	Elastomeric wtrprfng, 45 mil thk, neoprene sheets, nylon reinf	CSF	215.39	40.66
1870	Elastomeric waterproofing, for joint taping, add		29.45	
1880	Elastomeric waterproofing, for each additional ply, add		172.31	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.18	
1600	Elastomeric wtrprfng, 60 mil thk, neoprene sheets, nylon reinf	CSF	287.45	39.95
1870	Elastomeric waterproofing, for joint taping, add		33.38	
1880	Elastomeric waterproofing, for each additional ply, add		229.96	
1890	Elastomeric waterproofing, for application to horiz surf, deduct		-12.40	
07114 0009 Membrane waterproofing				
0010	Membrane waterproofing on slabs, 1 ply, felt, mopped	CSF	70.72	
1100	Membrane waterproofing on slabs, 1/16" urethane, troweled	CSF	317.91	
1210	Membrane waterproofing, for application to horiz surf, deduct		-35.33	
1200	Membrane waterproofing on slabs, roller applied, 1/16" urethane	CSF	474.92	
1210	Membrane waterproofing, for application to horiz surf, deduct		-58.88	
07115 0010 Bituminous waterproofing				
0100	Bituminous waterproofing, mopped, 1 ply #15 felt	CSF	56.80	17.18
0150	Bituminous waterproofing, for 30 lb felt, add		1.49	
0160	Bituminous waterproofing, for application to horiz surf, deduct		-7.63	
0110	Bituminous waterproofing, mopped, 2 plies #15 felt	CSF	97.57	24.50
0150	Bituminous waterproofing, for 30 lb felt, add		2.97	
0160	Bituminous waterproofing, for application to horiz surf, deduct		-12.85	
0120	Bituminous waterproofing, mopped, 3 plies #15 felt	CSF	139.71	35.00
0150	Bituminous waterproofing, for 30 lb felt, add		4.42	
0160	Bituminous waterproofing, for application to horiz surf, deduct		-18.31	
0130	Bituminous waterproofing, mopped, 4 plies #15 felt	CSF	182.18	46.22
0150	Bituminous waterproofing, for 30 lb felt, add		5.89	
0160	Bituminous waterproofing, for application to horiz surf, deduct		-23.80	
0140	Bituminous waterproofing, mopped, 5 plies #15 felt	CSF	217.20	54.77
0150	Bituminous waterproofing, for 30 lb felt, add		7.36	
0160	Bituminous waterproofing, for application to horiz surf, deduct		-28.17	
0200	Bituminous wtrprfng, 1 ply #15 felt, mopped, fibrous asphalt	CSF	57.59	17.67
0150	Bituminous waterproofing, for 30 lb felt, add		0.84	
0250	Bituminous waterproofing, for application to horiz surf, deduct		-8.14	
0210	Bituminous wtrprfng, 2 plies #15 felt, mopped, fibrous asphalt	CSF	100.59	26.39
0150	Bituminous waterproofing, for 30 lb felt, add		1.68	
0250	Bituminous waterproofing, for application to horiz surf, deduct		-14.08	
0220	Bituminous wtrprfng, 3 plies #15 felt, mopped, fibrous asphalt	CSF	145.67	31.24

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0150	Bituminous waterproofing, for 30 lb felt, add		2.52	
0250	Bituminous waterproofing, for application to horiz surf, deduct		-20.34	
0230	Bituminous wtrprfng, 4 plies #15 felt, mopped, fibrous asphalt	CSF	187.77	27.06
0150	Bituminous waterproofing, for 30 lb felt, add		3.36	
0250	Bituminous waterproofing, for application to horiz surf, deduct		-26.15	
0240	Bituminous wtrprfng, 5 plies #15 felt, mopped, fibrous asphalt	CSF	225.14	33.17
0150	Bituminous waterproofing, for 30 lb felt, add		4.19	
0250	Bituminous waterproofing, for application to horiz surf, deduct		-31.26	
07115 8000	Petroleum Resistant Membrane			
8001	20 Ml Permalon Or Equal		94.16	
8002	Field Seams		235.41	
8003	10 Ml, Permalon Or Equal		80.04	
07120	Fluid Applied Waterproofing			
07121 7000	Copolymer Compound			
7001	Fluid Elastomeric Copolymer Compound For Slabs 32 Ml	SF	0.36	
07130	Bentonite Waterproofing			
07131 0009	Bentonite			
0010	Bentonite, panels, 4' x 4', 3/16" thick	CSF	131.84	21.28
0450	Bentonite, for application to horizontal surfaces, deduct		-5.65	
0100	Bentonite, rolls, 3/8" thick, w/geotextile fabric both sides	CSF	151.11	24.20
0450	Bentonite, for application to horizontal surfaces, deduct		-6.42	
0300	Bentonite, granular bentonite, 50 lb bags (.625 CF)	EA	14.32	
0450	Bentonite, for application to horizontal surfaces, deduct		0.00	
0400	Bentonite, granular bentonite, 3/8" thick, troweled on	CSF	121.20	
0450	Bentonite, for application to horizontal surfaces, deduct		-7.44	
07145	Cementitious Waterproofing			
07146 0010	Cementitious waterproofing			
0030	Cementitious wtrprfng, troweled on, metallic, 1/4" thk, 2 coat	CSF	148.80	
0100	Cementitious waterproofing, for surf prep & cleaning, if reqd, add		16.28	
0040	Cementitious wtrprfng, troweled on, metallic, 3/8" thk, 3 coat	CSF	206.68	
0100	Cementitious waterproofing, for surf prep & cleaning, if reqd, add		21.95	
0050	Cementitious wtrprfng, troweled on, metallic, 1/2" thk, 4 coat	CSF	304.84	
0100	Cementitious waterproofing, for surf prep & cleaning, if reqd, add		33.65	
07160	Bituminous Dampproofing			
07162 0010	Bituminous asphalt coating			
07162 0029	Brushed on, below grade			
0030	Bitum asphalt fdn coating, brushed, below grade, 1 coat	CSF	42.47	
0040	Bituminous Asphalt Coating, Below Grade, Brushed On, 2 Coat	SF	0.63	
07162 0149	Spayed on			
0150	Bitum asphalt fdn coating, sprayed, primer + 1 coat	CSF	67.11	
0160	Bitum asphalt fdn coating, sprayed, primer + 2 coats	CSF	98.90	
0170	Bitum asphalt fdn coating, sprayed, primer + 3 coats	CSF	144.48	
0300	Bitum asphalt fdn ctg, 25.6 SF/gal, sprayed, below gr, 1 coat	CSF	37.80	
0310	Bituminous Asphalt Coating, Below Grade, Sprayed On, 2 Coat	SF	0.63	
0350	Bituminous Asphalt Coating, With Fibers Troweled On, 1/16"	SF	0.71	
0360	Bituminous Asphalt Coating, With Fibers Troweled On, 1/8"	SF	1.00	
0370	Bituminous Asphalt Coating, With Fibers Troweled On, 1/2"	SF	1.74	
07162 0499	Asphalt coating with fibers			
0500	Bitum asphalt fdn coating, w/fibers	GAL	4.32	
07162 0599	Troweled on, with fibers, cold applied			
0600	Bitum asphalt fdn coating, 1/16" thk, troweled, asphalt w/fibers	CSF	64.76	
07162 1099	Troweled on, with fibers, hot applied			
1100	Bitum asphalt fdn ctg, primer & 1 ct, troweled, fibrous, hot apld	CSF	91.91	
1110	Bitum asphalt fdn ctg, primer & 2 ct, troweled, fibrous, hot apld	CSF	130.67	
1120	Bitum asphalt fdn ctg, primer & 3 ct, troweled, fibrous, hot apld	CSF	173.44	
07162 3889	Protective board			
3990	Bitum asphalt fdn ctg, 1/8" T protect bd, asphalt ctd, in	CSF	80.06	29.14
4050	Bitum asphalt fdn coating, for application to horiz surf, deduct		-7.07	
4000	Bitum asphalt fdn ctg, 1/4" T protect bd, asphalt ctd, in	CSF	111.19	25.14
4050	Bitum asphalt fdn coating, for application to horiz surf, deduct		-7.85	
4010	Bitum asphalt fdn ctg, 3/8" T protect bd, asphalt ctd, in	CSF	135.45	21.52

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4050	Bitum asphalt fdn coating, for application to horiz surf, deduct		-8.31	
4020	Bitum asphalt fdn ctg, 1/2" T protect bd, asphalt ctd, in	CSF	158.93	22.79
4050	Bitum asphalt fdn coating, for application to horiz surf, deduct		-8.83	

07170 Water Repellent Coat

07174 0009 Rubber coating

07174 0009 Water base liquid

0010	Rubber coating water base liquid, roller applied	SQ	71.47	
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07174 0099 Silicone water repellent

0100	Rubber coating, 1 coat, silicone water repellent sprayed on conc	CSF	16.48	
0110	Rubber coating, 2 coat, silicone water repellent sprayed on conc	CSF	29.96	

07174 0199 Silicone or stearate

0200	Rubber coating, 1 coat, silicone or stearate, sprayed on CMU	CSF	34.14	
0300	Rubber coating, 2 coat, silicone or stearate, sprayed on CMU	CSF	64.35	
0400	Rubber coating, 1 coat, silicone or stearate, sprayed on brick	CSF	19.17	
0410	Rubber coating, 2 coat, silicone or stearate, sprayed on brick	CSF	33.49	

07180 Cementitious Dampproofing

07182 0009 Cement parging

0010	Cement parging 2 coats, 1/2" thick, regular PC	CSF	197.64	
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07190 Vapor Retarders

07192 0009 Building paper and vapor barrier

07192 0009 Building paper

0010	Building paper, aluminum & kraft laminated, foil 1 side	CSF	11.38	
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07192 0599 Vapor barrier

0600	Building paper, .002" thick, polyethylene vapor barrier, std	SF	7.21	2.26
1270	Bldg paper, polthn vapor barrier, for joint taping, add		2.02	
1280	Bldg paper, polthn vapor barrier, for each additional ply, add		5.77	
1290	Bldg paper, polthn vapor barrier, for appl to horiz surf, deduct		-1.08	
0700	Building paper, .004" thick, polyethylene vapor barrier, std	SF	7.23	2.26
1270	Bldg paper, polthn vapor barrier, for joint taping, add		2.02	
1280	Bldg paper, polthn vapor barrier, for each additional ply, add		5.78	
1290	Bldg paper, polthn vapor barrier, for appl to horiz surf, deduct		-1.08	
0900	Building paper, .006" thick, polyethylene vapor barrier, std	SF	7.23	2.00
1270	Bldg paper, polthn vapor barrier, for joint taping, add		2.02	
1280	Bldg paper, polthn vapor barrier, for each additional ply, add		5.78	
1290	Bldg paper, polthn vapor barrier, for appl to horiz surf, deduct		-1.08	
1200	Building paper, .010" thick, polyethylene vapor barrier, std	SF	7.26	1.47
1270	Bldg paper, polthn vapor barrier, for joint taping, add		2.02	
1280	Bldg paper, polthn vapor barrier, for each additional ply, add		5.81	
1290	Bldg paper, polthn vapor barrier, for appl to horiz surf, deduct		-1.08	

07200 Insulation & Fireproofing

07201 Building Insulation

Note: All Insulation Rolls Or Batts Applied To Wood Or Steel Studs Or Between Rafters

07202 0010 Blown-in insulation

1000	Blown-in insul, 5" thk, R11, ceilings, w/open access, fbgl	SF	0.42	0.11
1050	Blown-in insul, 6" thk, R13, ceilings, w/open access, fbgl	SF	0.49	0.12
1100	Blown-in insul, 8.5" thk, R19, ceilings, w/open access, fbgl	SF	0.67	0.15
1200	Blown-in insul, 10" thk, R22, ceilings, w/open access, fbgl	SF	0.78	0.15
1300	Blown-in insul, 12" thk, R26, ceilings, w/open access, fbgl	SF	0.95	0.15
1400	Blown-in insul, 15" thk, R30, ceilings, w/open access, fbgl	SF	1.23	0.23

07210 0009 Poured insulation

0010	Poured insulation, cellulose fiber, R3.8 per inch	CF	1.81	0.53
1000	Poured insulation, for each floor above 4 floors, add		0.44	
0080	Poured insulation, fiberglass wool, R4 per inch	CF	1.67	0.53
1000	Poured insulation, for each floor above 4 floors, add		0.44	
0100	Poured insulation, mineral wool, R3 per inch	CF	1.67	0.17
1000	Poured insulation, for each floor above 4 floors, add		0.44	
3101	For 1/2" Weatherproof Gypsum Sheathing Install On Existing Studs		0.47	
3102	For Heavy Reinforcement, Add		1.79	
3103	For 2.5# Metal Lath On Existing Substrate, Add		0.32	
0300	Poured insulation, polystyrene, R4 per inch	CF	3.34	0.60
1000	Poured insulation, for each floor above 4 floors, add		0.44	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0400	Poured insulation, vermiculite or perlite, R2.7 per inch	CF	2.95	0.53
1000	<i>Poured insulation, for each floor above 4 floors, add</i>		0.44	
0800	Poured insulation, expanded glass beads	CF	2.90	0.57
1000	<i>Poured insulation, for each floor above 4 floors, add</i>		0.44	
07215 0009	Sprayed			
07215 0009	On walls			
0010	Sprayed insul, fibrous/cmmts, 1" thk, R3.7, finished wall	SF	0.68	
0590	Sprayed insul, foam 1" T, R4.0, urethane, 2#/CF density, on walls	SF	1.55	0.55
0950	<i>Sprayed insul, foam type, for 2" thick on vertical surface, add</i>		0.19	
0595	Sprayed insul, foam 2" T, R8.0, urethane, 2#/CF density, on walls	SF	2.69	0.81
0950	<i>Sprayed insul, foam type, for 2" thick on vertical surface, add</i>		0.31	
07215 0599	On roof			
0600	Sprayed insul, foam 1" T, R3.8, urethane, 3#/CF density, on roof	SF	1.63	0.55
0900	<i>Sprayed insul, foam type, for 1" thick on vertical surface, add</i>		0.11	
0950	<i>Sprayed insul, foam type, for 2" thick on vertical surface, add</i>		0.19	
0700	Sprayed insul, foam 2" T, R7.5, urethane, 3#/CF density, on roof	SF	2.85	0.92
0900	<i>Sprayed insul, foam type, for 1" thick on vertical surface, add</i>		0.19	
0950	<i>Sprayed insul, foam type, for 2" thick on vertical surface, add</i>		0.31	
07216 0010	Wall insulation, rigid			
Note: Types Are Stock Sizes Mastic Applied Or Nailed On Or Mechanical Fastened.				
07216 0019	Fiberboard			
0020	Wall insul, rigid, fiberboard, 3/4" thick, R2.08	SF	0.48	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
0025	Wall insul, rigid, fiberboard, 1" thick, R2.78	SF	0.66	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
0030	Wall insul, rigid, fiberboard, 2" thick, R5.26	SF	0.96	0.13
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
0031	3/4" Polystyrene, R 4.2 Rigid Insulation	SF	0.62	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
07216 0039	Fiberglass			
0040	Wall insul, rigid, fiberglass, R4.1, 1.5#/CF, unfaced, 1" T	SF	0.53	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
0080	Wall insul, rigid, fiberglass, R8.3, 1.5#/CF, unfaced, 2" T	SF	0.71	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
07216 1499	Foanglass			
1500	Wall insul, rigid, foanglass, 1.5" thick, R3.9	SF	1.99	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
1530	Wall insul, rigid, foanglass, 2" thick, R5.26	SF	2.49	0.07
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
07216 1600	Isocyanurate			
1630	Wall insul, rigid, 3/4" thk, R5.4, foil faced, 2 sides,	SF	0.72	0.17
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
1640	Wall insul, rigid, 1" thk, R7.2, foil faced, 2 sides,	SF	0.73	0.13
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	
4010	<i>Wall insul, rigid, for foil coating integral w/ insul, add</i>		0.35	
4030	<i>Wall insul, rigid, for factory painted on one surface, add</i>		0.17	
1650	Wall insul, rigid, 1.5" thk, R10.8, foil faced, 2 sides,	SF	0.80	0.10
4000	<i>Wall insul, rigid, for vapor barrier integral w/ insul, add</i>		0.05	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
1660	Wall insul, rigid, 2" thk, R14.4, foil faced, 2 sides,	SF	0.91	0.10
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
07216 1899 Extruded polystyrene				
1900	Wall insul, rigid, 1" T, R5, 25 PSI comp str, extruded	SF	0.69	0.13
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
1940	Wall insul, rigid, 2" T, R10, 25 PSI comp str, extruded	SF	1.08	0.13
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
07216 2399 Wood fiber				
2400	Wall insul, rigid, wood fiber, 1" thick, R3.85	SF	0.55	0.10
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
2410	Wall insul, rigid, wood fiber, 2" thick, R7.7	SF	0.85	0.17
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
07216 2679 Mineral fiberboard, rigid				
2680	Wall insul, rigid, mineral fiberboard, 1" thick, R4.2	SF	0.60	0.17
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
2700	Wall insul, rigid, mineral fiberboard, 2" thick, R8.4	SF	0.91	0.20
4000	Wall insul, rigid, for vapor barrier integral w/ insul, add		0.05	
4010	Wall insul, rigid, for foil coating integral w/ insul, add		0.35	
4030	Wall insul, rigid, for factory painted on one surface, add		0.17	
07218 0010 Wall or ceiling insulation, non-rigid				
07218 0040 Fiberglass, kraft faced, batts or blankets				
0060	Wall/ceiling insul, 3.5" thk, R11, 11" W fbgl, kraft faced,	SF	0.47	0.07
0080	Wall/ceiling insul, 3.5" thk, R11, 15" W fbgl, kraft faced,	SF	0.41	0.07
0140	Wall/ceiling insul, 6" thk, R19, 11" W fbgl, kraft faced,	SF	0.59	0.10
0160	Wall/ceiling insul, 6" thk, R19, 15" W fbgl, kraft faced,	SF	0.53	0.10
07218 0400 Fiberglass, foil faced, batts or blankets				
0420	Wall/ceiling insul, 3.5" thk, R11, 15" W fbgl, foil faced,	SF	0.48	0.07
0460	Wall/ceiling insul, 6" thk, R19, 15" W fbgl, foil faced,	SF	0.55	0.07
07218 0800 Fiberglass, unfaced, batts or blankets				
0810	Wall/ceiling insul, 1.5" thk, R4.5, 15" W fbgl, unfaced,	SF	0.31	0.07
0820	Wall/ceiling insul, 3.5" thk, R11, 15" W fbgl, unfaced,	SF	0.41	0.07
0860	Wall/ceiling insul, 6" thk, R19, 15" W fbgl, unfaced, batt/blk	SF	0.57	0.07
07218 1300 Mineral fiber batts, kraft faced				
1320	Wall/ceiling insul, 3.5" thk, R11, mrl fiber batts, kraft	SF	0.44	0.10
1340	Wall/ceiling insul, 6" thk, R19, mrl fiber batts, kraft faced	SF	0.58	0.10
1380	Wall/ceiling insul, 10" thk, R30, mrl fiber batts, kraft	SF	0.88	0.10
1410	4" Vinyl Faced FBGS Batt InslR13	SF	0.70	0.10
1420	6" Vinyl Faced FBGS Batt InslR19	SF	0.85	0.10

07220 Roof & Deck Insulation

07223 0010 Roof deck insulation

Note: Types Are Stock Sizes Mastic Applied, Nailed On, Or Mechanically Fastened.

07223 0449 Fiberglass

0450	Roof deck insulation, fiberglass, 1" thick R4.1	SF	0.50	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.25	
0610	Roof deck insulation, fiberglass, 2" thick R8.2	SF	0.68	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.34	
0710	Roof deck insulation, fiberglass, 3" thick R12.4	SF	0.80	0.03
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.40	
07223 1499	Foanglass			
1500	Roof deck insulation, foanglass, 1.75" thk R4.5	SF	1.89	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.95	
1510	Roof deck insulation, foanglass, 1.5" thk, R3.9	SF	1.95	0.06
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.98	
1520	Roof deck insulation, foanglass, 2" thk, R5.2	SF	2.50	0.03
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		1.25	
1530	Roof deck insulation, foanglass, 3" thk R7.89	SF	3.55	0.03
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		1.78	
07223 1609	Particleboard			
1610	Roof deck insulation, particleboard, 3/4" thk, R2.08	SF	0.56	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.28	
1615	Roof deck insulation, particleboard, 1" thk, R2.78	SF	0.58	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.29	
1620	Roof deck insulation, particleboard, 2" thk, R5.56	SF	0.81	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.41	
1625	Roof deck insulation, particleboard, 3" thk, R8.3	SF	1.17	0.15
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.59	
07223 1645	Perlite			
1660	Roof deck insulation, perlite, 1" thick R2.78	SF	0.57	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.29	
1680	Roof deck insulation, perlite, 2" thick R5.56	SF	0.92	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.46	
1687	Roof deck insulation, perlite, 3" thick R8.33	SF	1.22	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.61	
07223 1699	Polyisocyanurate			
1700	Roof deck insul, 3/4" thk, R5.1, 2#/CF density, polyisocyanurate	SF	0.49	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.25	
1705	Roof deck insul, 1" thk R7.14, 2#/CF density, polyisocyanurate	SF	0.53	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.27	
1715	Roof deck insul, 1.5" thk R10.87, 2#/CF density,	SF	0.59	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.30	
1725	Roof deck insul, 2" thk R14.29, 2#/CF density, polyisocyanurate	SF	0.72	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.36	
1745	Roof deck insul, 3" thk R21.74, 2#/CF density, polyisocyanurate	SF	0.97	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.49	
07223 1900	Extruded polystyrene			
1910	Roof deck insul, 1" T R5, 15 PSI comp str, extruded polystyrene	SF	0.44	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.22	
1920	Roof deck insul, 2" T R10, 15 PSI comp str, extruded	SF	0.57	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.29	
1930	Roof deck insul, 3" T R15, 15 PSI comp str, extruded	SF	1.10	0.06
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.55	
07223 2009	Expanded polystyrene			
2010	Roof deck insul, 3/4" T R2.89, 1#/CF density, expanded	SF	0.37	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.19	
2200	Roof deck insul, 3/8" T, R1.5, 1#/CF foil bk, expanded	SF	0.29	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.15	
2210	Roof deck insul, 1/2" T, R2.7, 1#/CF foil bk, expanded	SF	0.35	0.09
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.18	
2220	Roof deck insul, 3/4" T, R4.0, 1#/CF foil bk, expanded	SF	0.42	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.21	
07223 2579	Wood fiber, rigid panels			
2580	Roof deck insul, wood fiber, rigid panels, R4.0, 1" thick	SF	0.57	0.15
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.29	
2590	Roof deck insul, wood fiber, rigid panels, R8.0, 2" thick	SF	0.87	0.12
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.44	
2600	Roof deck insul, 3" thick, wood fiber, rigid panels, R12.0	SF	1.19	0.15
4000	Roof deck insul, rigid, for vapor barrier integral w/ insul, add		0.22	
4010	Roof deck insul, rigid, for foil coating integral w/ insul, add		0.49	
4020	Roof deck insul, rigid, for factory painted on one surf, add		0.21	
4030	Roof deck insul, for tapered roof insulation, add		0.60	

07240 Exterior Insulation

07242 0010 Exterior insulation finish system

07242 0099 Field applied

0100	Exterior insulation finish sys, 1" EPS insul, field applied	SF	8.34	3.85
0440	Exterior insulation finish sys, for higher than one story add		1.08	
0110	Exterior insulation finish sys, 2" EPS insul, field applied	SF	8.67	3.97
0440	Exterior insulation finish sys, for higher than one story add		1.08	
0120	Exterior insulation finish sys, 3" EPS insul, field applied	SF	9.07	4.07
0440	Exterior insulation finish sys, for higher than one story add		1.08	

07250 Fireproofing

07254 0010 Sprayed

07254 0299 Ceiling fireproofing

0300	Sprayed fprfg, mrl fiber/cmmts, 1 hr rtd, 1/2" T, clg/decking	SF	0.59	0.30
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0310	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 7/8" T, clg/decking	SF	0.77	0.26
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	

07254 0319 Beam and deck fireproofing

0320	Sprayed fprfg, mrl fiber/cmmts, 1 hr rtd, 1-3/8"T, beam & deck	SF	1.67	0.33
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0330	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 1.5"T, beam & deck	SF	1.75	0.33
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0340	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 1-5/8"T, beam & deck	SF	1.84	0.29
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	

07254 0439 Beam fireproofing

0440	Sprayed fprfg, mrl fiber/cmmts, 1 hr rtd, 7/16"T(mi nW8x24), beam	SF	0.57	0.30
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0450	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 1/2" T(mi nW8x24), beam	SF	0.59	0.30
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0460	Sprayed fprfg, mrl fiber/cmmts, 3 hr rtd, 7/8" T(mi nW8x24), beam	SF	0.77	0.22
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0470	Sprayed fprfg, mrl fiber/cmmts, 4 hr rtd, 1.25"T, (mi nW8x24), beam	SF	1.30	0.29
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	

07254 0709 Column fireproofing

0710	Sprayed fprfg, mrl fiber/cmmts, 1 hr rtd, 1-3/16"T, (W0x49), col	SF	1.27	0.26
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0720	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 5/8" T (W4x228), col	SF	1.01	0.37
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0730	Sprayed fprfg, mrl fiber/cmmts, 2 hr rtd, 1.25"T, (W0x49), col	SF	1.30	0.26
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0740	Sprayed fprfg, mrl fiber/cmmts, 3 hr rtd, 7/8" T, (W4x228), col	SF	1.13	0.29
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	
0750	Sprayed fprfg, mrl fiber/cmmts, 3 hr rtd, 1-7/8" T (W0x49), col	SF	1.23	0.19
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0760	Sprayed fprfg, mrl fiber/cmmts, 4 hr rtd, 1.25"T (W4x228), col	SF	0.94	0.19
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.04	
0770	Sprayed fprfg, mrl fiber/cmmts, 4 hr rtd, 2.5" T (W0x49), col	SF	1.87	0.18
0850	Fireproofing, spray mineral fiber or cementitious, for tamping, add		0.07	

07300 Shingles & Roofing Tiles

07310 Shingles

07313 Fiberglass Shingles

07313 1000 Fiberglass Shingles

1111	20 Year Fiberglass Shingle, 240#		110.61	
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07314 0010 Asphalt shingles

NOTE: Demolition cost assume two layers of shingles and include hips and ridges. For more than 2 layers use section 02112-1520

07314 0100 Standard strip shingles

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0150	Asphalt shingles, 210-235 lb/sq, inorganic, class A, std strip	SQ	72.65	34.03
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		21.41	
0160	Std Strip - Organic-Cl "C" 235- 240 Lb/Sq - 3 Bundles/Sq	SQ	93.03	34.03
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		29.64	
0170	Hip And Ridge Roll	LF	1.29	
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		0.37	
0180	Ridge Shingles	LF	1.58	
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		0.45	
0190	Asphalt Shingles, Type 230 SBS Metric Polyglass		69.19	
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		0.00	
0195	Hand Sealing Shingles		15.30	
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		0.00	
07314 0400 Premium laminated multi-layered shingles				
0470	Premium Laminated, Multi-Layer, Cl"A" 300-385 Lb/Sq 4 Bundles/Sq	SQ	180.56	34.03
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		49.40	
07314 0799 Felt underlayment				
0800	Asphalt shingles, #15 felt underlayment	CSF	6.86	1.91
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		1.84	
0825	Asphalt shingles, #30 felt underlayment	CSF	10.10	2.03
1000	Shingles, asphalt, for steep roofs (7 to 12 pitch or greater), add		2.03	
07318 0009 Wood				
0010	Wood shingles, 16" #1 red cedar shingles, on roof, 5" exposure	SQ	283.06	34.08
0550	Wood shingles, 18" #2 red cedar perfection, 5.5" exposure on	SQ	272.40	34.11
0555	Red Cedar No. 1 16" 7-1/2" Exposure On Wall	SQ	305.66	34.02
07319 Steel Shingles				
07319 1000 Steel Shingles				
1001	24 Ga Steel Shingles, Galvanized	SQ	140.37	
1002	26 Ga Steel Shingles, Galvanized	SQ	135.16	
1003	24 Ga Steel Shingles, Galvanized And Bonderized	SQ	219.09	
1004	26 Ga Steel Shingles, Galvanized And Bonderized	SQ	202.58	
07319 2000 Accessories				
2001	Ridge Or Valley	LF	2.29	
07320 Roofing Tile				
NOTE: Demolition cost includes ridge, hip, rake, starter, apex, mansard.				
07322 0010 Clay tile				
0600	Clay tile, w/acces, red, gr 1, Spanish, 171 pc/sq, ASTM C1167	SQ	487.35	36.38
1101	Clay tile, w/acces, scored, red, gr 1, Mission, 192 pc/sq, ASTM	SQ	788.21	34.06
1701	Clay tile, w/acces, smooth, red, gr 1, French, 133 pc/sq, ASTM	SQ	739.39	34.06
1800	Clay tile, w/acces, 317 pc/sq, gr 1, Norman black, ASTM C1167	SQ	1,162.30	36.38
2201	Clay tile, w/acces, 158 pc/sq, cedar, gr 1, Williamsburg, ASTM	SQ	703.23	34.06
2210	Americana (Most Colors), Classic Tile Or Lanai Tile	SQ	825.73	36.16
2230	Spanish (Red)	SQ	712.82	36.16
2240	Spanish (Buff, Green, Gray, Brn)	SQ	1,100.01	36.16
2250	Mission Tile (Red)	SQ	1,328.80	36.16
2260	French Tile (Red)	SQ	1,203.48	36.16
2270	Norman Tile	SQ	2,528.76	36.16
2280	Williamsburg Tile	SQ	877.28	36.16
07324 0010 Concrete tile				
0050	Conc tile, w/acces, earthtone, nail to wd deck, corr, 13"x16.5", 950	SQ	306.91	36.25
0150	Conc tile, w/acces, blues, nail to wd deck, corr, 13" x 16.5", 950	SQ	320.74	36.25
0200	Conc tile, w/acces, green, nail to wd deck, corr, 13" x 16.5", 950	SQ	320.74	36.25
07324 1100 Corrugated Tiles and Shakes Nailed To Wood				
1101	Concrete Roof Tile, 13"x16-1/2", 90/SQ, 950 LB/SQ, Earthtone	SQ	346.69	36.17
1102	Concrete Roof Tile, 13"x16-1/2", 90/SQ, 950 LB/SQ, Custom Blues,	SQ	473.40	36.17
1103	Concrete Roof Tile, 13"x16-1/2", 90/SQ, 950 LB/SQ, Custom Greens	SQ	372.03	36.17
1104	Concrete Roof Tile, 13"x16-1/2", 90/SQ, 950 LB/SQ, Colors, Shakes	SQ	353.88	36.17
07324 1200 Accessories				
1201	Ridge and Hip, 10" x 16-1/2", 8 LB EA For Concrete Tile Roof	EA	1.93	
1202	Rake, 6-1/2" x 16-3/4", 9 LB EA For Concrete Tile Roof	EA	1.27	
1203	Mansard Hip, 10" x 16-1/2", 9.2 LB EA For Concrete Tile Roof	EA	1.91	
1204	Hip Starter, 10" x 16-1/2", 10.5 LB EA For Concrete Tile Roof	EA	2.19	
1205	3 or 4 Way APEX, 10" EA Side, 11.5 LB EA For Concrete Tile	EA	2.28	
07325 Slate Shingles				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07325 1000	Shingles Including Felt and Nails			
1001	Slate Shingles, Buckingham Virginia Black, 3/16" Thick	SQ	623.26	36.16
1002	Slate Shingles, Buckingham Virginia Black, 1/4" Thick	SQ	749.98	36.16
1003	Slate Shingles, Penn Black Bangor, No. 1 Cedar	SQ	711.96	36.16
1004	Slate Shingles, Vermont, Unfading Colors, Green	SQ	724.63	36.16
1005	Slate Shingles, Vermont, Unfading Colors, Semi-Weathered, GREN/GR	SQ	775.32	36.16
1006	Slate Shingles, Vermont, Unfading Color, Purple	SQ	711.96	36.16
1007	Slate Shingles, Vermont, Unfading Color, Black or Gray	SQ	673.95	36.16
1008	Slate Shingles, Vermont, Unfading Color, Red	SQ	1,573.61	36.16
1009	Slate Shingles, Vermont, Unfading Color, Variegated Purple	SQ	711.96	36.16
07400	Preformed Roofing & Siding			
07410	Preformed Panels			
07411 0009	Aluminum roofing Framing, Fasteners Included			
07411 0009	Corrugated or ribbed			
0010	Al roofing, natural, corrugated or ribbed, .0155" thick	SF	1.64	
07411 0699	Corrugated			
0700	Al roofing, .024" T, corrugated, on steel frame, natural	SF	2.21	0.23
0710	.024" Corr Al Roof Panel, Natural Natural Finish, Incl Fasteners	SF	1.64	0.24
0720	.024" Corr Al Roof Panel, Painted Painted Finish, Incl Fasteners	SF	1.72	0.24
0900	Al roofing, .032" T, corrugated, on steel frame, natural	SF	2.28	0.26
1001	.0175"Tk Corr(Ribbed) Al Roofing Natural Finish	SF	1.72	0.44
1200	Al roofing, corrugated, painted, .032" thick	SF	2.73	0.39
1221	.0215"Tk Corrugated Alum Roofing on Steel Frame, Natural Finish	SF	1.78	0.41
1222	.024"Tk Corrugated Alum Roofing on Steel Frame, Natural Finish	SF	2.08	0.41
07411 1299	V-Beam			
1300	Al roofing, .032" thk, natural, V-beam on stl fr construction	SF	2.46	0.29
1500	Al roofing, .032" thk, painted, V-beam on stl fr construction	SF	2.85	0.26
1600	Al roofing, .040" thk, natural, V-beam on stl fr construction	SF	2.84	0.23
1800	Al roofing, .040" thk, painted, V-beam on stl fr construction	SF	3.28	0.23
1900	Al roofing, .050" thk, natural, V-beam on stl fr construction	SF	3.29	0.26
2100	Al roofing, .050" thk, painted, V-beam on stl fr construction	SF	3.73	0.26
07411 2149	Corrugated or ribbed			
2150	Al roofing, on stl fr, 29 ga, corrugated or ribbed, galvanized	SF	1.76	0.43
2160	Al roofing, on stl fr, 26 ga, corrugated or ribbed, galvanized	SF	1.90	0.46
2170	Al roofing, on stl fr, 24 ga, corrugated or ribbed, galvanized	SF	2.06	0.46
2180	Al roofing, on stl fr, 22 ga, corrugated or ribbed, galvanized	SF	2.31	0.49
07411 2189	Factory galvanized, ribbed			
2190	Al roofing, on steel frame, 26 ga, factory galvanized, ribbed	SF	1.90	0.23
07411 2399	Ridge cap			
2400	Al roofing, ridge cap, .032" thick, natural	LF	3.24	0.39
07411 2409	Ridge roll			
2410	Al roofing, ridge roll, 10" wide	LF	3.10	0.75
2420	Al roofing, ridge roll, 20" wide	LF	4.44	0.82
07417 0009	Steel roofing Fasteners Included			
07417 0009	Corrugated or ribbed			
0010	Steel roofing, on stl fr, corrugated or ribbed, galv, 30	SF	1.79	
0510	Steel roofing, on stl fr, corr or ribbed, ptd, 18 ga	SF	3.42	0.30
0520	Steel roofing, on stl fr, corr or ribbed, ptd, 20 ga	SF	2.98	0.30
0530	Steel roofing, on stl fr, corr or ribbed, ptd, 22 ga	SF	2.65	0.30
0950	Steel roofing, on stl fr, box rib panels, ptd, 18 ga	SF	3.57	0.30
0960	Steel roofing, on stl fr, box rib panels, ptd, 20 ga	SF	3.20	0.33
0970	Steel roofing, on stl fr, box rib panels, ptd, 22 ga	SF	2.83	0.33
1000	Steel roofing, on stl fr, 4" rib panel, painted, 22 ga	SF	2.63	0.36
1010	Steel roofing, on stl fr, 4" rib panel, painted, 20 ga	SF	2.88	0.36
1020	Steel roofing, on stl fr, 4" rib panel, painted, 18 ga	SF	3.23	0.36
1050	Steel roofing, on substrate, painted, 22 ga, 2" standing seam	SF	3.39	0.20
1060	Steel roofing, on substrate, painted, 24 ga, 2" standing seam	SF	3.04	0.20
1070	Steel roofing, on substrate, painted, 26 ga, 2" standing seam	SF	2.49	0.13
1080	Inst Roof Snow Guards On Stdg Seam Ml Roofs, Clrd, Glued Down	SF	27.78	
07417 4000	Standing Seam Roof			

Note: All Flashing Prices Include All Backup Plats, Neoprene Closures, Metal "Z" Closures, Tape Sealer, Tube Sealant, Fasteners, Vent Material, Cleats, Drip & Trim Flashings And Support Angles As Recommended By The Panel Manufacturer.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07417 4100	Structural Panel-3" High, Trapezoidal Seam			
07417 4110	24 Ga. AluminumZinc Alloy Coated Steel			
	Note: Panels Per ASTM A 792, Including Clips, Fasteners, Thermal Spacers And Packaging.			
4111	Standing Seam Roof	SF	5.58	0.28
4114	Ridge Flashing	LF	15.31	
4115	Vented Ridge Flashing	LF	31.67	
4116	Eave Flashing	LF	8.37	
4117	Rake Flashing	LF	10.05	
4118	Valley Flashing	LF	16.48	
4119	Hip Flashing	LF	13.01	
07417 4130	Prefinished 24 Ga. AluminumZinc Alloy Coated			
	Note: Steel Panels, Per ASTM A 792, Including Clips, Fasteners, Thermal Spacers And Packaging.			
4131	Standing Seam Roof	SF	6.63	0.28
4134	Ridge Flashing	LF	18.12	
4135	Vented Ridge Flashing	LF	33.94	
4136	Eave Flashing	LF	8.78	
4137	Rake Flashing	LF	11.93	
4138	Valley Flashing	LF	19.01	
4139	Hip Flashing	LF	14.59	
07417 4200	Structural Panel-2" High, Vertical Leg Seam			
07417 4210	24 Ga. AluminumZinc Alloy Coated Steel			
	Note: Panels Per ASTM A 792, Including Clips, Fasteners, Thermal Spacers And Packaging.			
4211	Standing Seam Roof	SF	5.79	0.28
4215	Ridge Flashing	LF	15.31	1.41
4216	Vented Ridge Flashing	LF	31.67	2.74
4217	Eave Flashing	LF	8.37	1.41
4218	Rake Flashing	LF	10.05	1.41
4219	Valley Flashing	LF	16.48	2.74
4221	Hip Flashing	LF	13.01	1.41
07417 4230	Prefinished 24 Ga. AluminumZinc Alloy Coated			
	Note: Steel Panels, Per ASTM A 792, Including Clips, Fasteners, Thermal Spacers And Packaging.			
4231	Standing Seam Roof	SF	6.78	
4235	Ridge Flashing	LF	18.12	1.41
4236	Vented Ridge Flashing	LF	33.94	2.74
4237	Eave Flashing	LF	8.78	1.41
4238	Rake Flashing	LF	11.93	1.41
4239	Valley Flashing	LF	19.01	2.74
4241	Hip Flashing	LF	14.59	1.41
07417 4300	Architectural Panel-2" High Batten			
07417 4310	Prefinished 24 Ga. AluminumZinc Alloy Coated			
	Note: Steel Panels, Per ASTM A 792, Including Clips, Fasteners, Thermal Spacers And Packaging.			
4311	Standing Seam Roof	SF	7.43	0.28
4315	Ridge Flashing	LF	11.71	1.41
4316	Eave Flashing	LF	8.23	1.41
4317	Rake Flashing	LF	9.51	1.41
4318	Valley Flashing	LF	15.28	2.74
4319	Hip Flashing	LF	11.71	1.41
07420	Composite Panels			
07424 0010	Composite panels			
07424 0099	Insulated siding panel Galvanized Steel Each Face			
0100	Insulated siding pnl, 24 ga galv steel, w/1" polystyrene	SF	7.64	2.43
0110	Insulated siding pnl, 24 ga galv steel, w/2" polystyrene	SF	8.22	2.79
07424 0119	Sandwich panel			
	Note: Insulation And 18 Ga. Galvanized Steel Interior Panel			
0120	Sandwich pnl, 16 ga ptd stl ext, 18ga galv stl intr, 1.5" fbgl	SF	9.30	2.96
0130	Sandwich pnl, 18ga galv stl ext, 18ga galv stl intr, 1.5" fbgl	SF	7.13	2.37
0140	Sandwich pnl, 20ga galv stl ext, 18ga galv stl intr, 1.5" fbgl	SF	6.95	1.97
0150	Sandwich pnl, 20 ga sst ext, 18ga galv stl intr, 1.5" fbgl	SF	8.67	2.56
0160	Sandwich pnl, 24 ga al ext, 18ga galv stl intr, 1.5" fbgl	SF	7.92	1.05
0170	Sandwich pnl, 24ga galv stl ext, 18ga galv stl intr, 1.5" fbgl	SF	6.30	2.10

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0180	Sandwich pnl, 24 ga ptd stl ext, 18ga galv stl intr, 1.5" fbgls	SF	6.50	0.85
07424 0199	Insulated metal liner panel			
0200	Insulated metal liner pnl, 22 ga galv, 1-3/8" thk fbgls insul,	SF	2.60	0.46
0210	Insulated metal liner pnl, 20 ga galv, 1-3/8" thk fbgls insul,	SF	2.75	0.46
0220	Insulated metal liner pnl, 18 ga galv, 1-3/8" thk fbgls insul,	SF	3.03	0.43
0230	Insulated metal liner pnl, 24 ga galv, 1-3/8" thk fbgls insul,	SF	2.46	0.46
0240	Insulated metal liner pnl, 22 ga primed, 1-3/8" thk fbgls insul,	SF	2.64	0.46
0250	Insulated metal liner pnl, 20 ga primed, 1-3/8" thk fbgls insul,	SF	2.78	0.43
0260	Insulated metal liner pnl, 18 ga primed, 1-3/8" thk fbgls insul,	SF	3.06	0.43
0270	Insulated metal liner pnl, 24 ga primed, 1-3/8" thk fbgls insul,	SF	2.49	0.43
07462 0009	Aluminum siding Framing, Fasteners Included			
07462 0009	Standard type			
0010	Aluminum siding, natural, .019" thick, on steel frame	SF	2.08	0.23
07462 0699	Industrial type			
0700	Aluminum siding, .024" T, mill, indl type, corrugated, on steel	SF	2.43	0.23
1000	Aluminum siding, .032" T, mill, indl type, corrugated, on steel	SF	2.86	0.33
1111	.024" Corr Alum Siding Pnl, Nat Natural Finish, Incl Fasteners	SF	1.84	0.24
1113	.024" Corr Alum Siding Pnl, Paint Painted Finish, Incl Fasteners	SF	2.00	0.24
1200	Aluminum siding, .032" T, ptd, indl type, corrugated, on steel	SF	3.23	0.36
07462 1299	V-Beam			
1300	Aluminum siding, mill, V-beam on steel frame, .032" thick	SF	3.00	0.36
1500	Aluminum siding, painted, V-beam on steel frame, .032" thick	SF	3.41	0.36
1600	Aluminum siding, mill, V-beam on steel frame, .040" thick	SF	3.34	0.36
1800	Aluminum siding, painted, V-beam on steel frame, .040" thick	SF	3.76	0.36
1900	Aluminum siding, mill, V-beam on steel frame, .050" thick	SF	3.69	0.36
2100	Aluminum siding, painted, V-beam on steel frame, .050" thick	SF	4.21	0.29
07462 2769	Ribbed			
2770	Al siding, ribbed, 4" profile, .032" thick, mill	SF	2.81	0.39
2780	Al siding, ribbed, 4" profile, .032" thick, painted	SF	3.27	0.42
2790	Al siding, ribbed, 4" profile, .040" thick, mill	SF	3.28	0.42
2800	Al siding, ribbed, 4" profile, .040" thick, painted	SF	3.73	0.46
2810	Al siding, ribbed, 4" profile, .050" thick, mill	SF	3.61	0.42
2820	Al siding, ribbed, 4" profile, .050" thick, painted	SF	4.09	0.46
07466 0009	Steel siding Framing, Fasteners Included			
07466 0009	Beveled, vinyl coated			
0010	Steel siding, beveled, including fasteners, vinyl coated, 8" wid	SF	2.21	0.30
07466 0699	Colored, corrugated/ribbed			
0700	Steel siding, colored, 10 yr fnsh, 28 ga, corrugated/ribbed,	SF	2.43	0.29
0900	Steel siding, colored, 10 yr fnsh, 26 ga, corrugated/ribbed,	SF	2.49	0.43
1000	Steel siding, colored, 10 yr fnsh, 24 ga, corrugated/ribbed,	SF	2.68	0.30
1010	Steel siding, colored, 10 yr fnsh, 22 ga, corrugated/ribbed,	SF	2.87	0.29
1020	Steel siding, colored, 10 yr fnsh, 20 ga, corrugated/ribbed,	SF	3.05	0.30
07466 1029	Box rib			
1030	Steel siding, box rib, on steel frame, 26 gauge, painted	SF	2.52	0.36
1040	Steel siding, box rib, on steel frame, 24 gauge, painted	SF	2.64	0.42
1050	Steel siding, box rib, on steel frame, 22 gauge, painted	SF	2.81	0.42
1060	Steel siding, box rib, on steel frame, 20 gauge, painted	SF	3.14	0.43
07467 Cladding/Siding				
07467 0009	Vinyl siding			
07467 0009	Solid PVC			
0010	Vinyl siding, solid PVC panels, 8" to 10" wide, plain	SF	1.81	0.26
07467 1000	Plastic Siding			
07467 1999	Smooth, white			
07467 1999	Single			
2000	Vinyl siding, solid PVC panels, 8" wide, smooth, white, single	SF	1.80	0.27
2020	Vinyl siding, solid PVC panels, Dutch lap, 10" W, smooth, white	SF	1.63	0.27
07467 2099	Double			
2100	Vinyl siding, solid PVC panels, double 4" pattern, 8" W, smooth,	SF	1.69	0.27
2120	Vinyl siding, solid PVC panels, double 5" pattern, 10" W, smooth,	SF	1.62	0.27
07467 2999	Accessories			
07467 2999	Starter strip			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3000	Vinyl siding, accessories, starter strip	LF	1.01	
07467 3099	J channel			
3100	Vinyl siding, accessories, "J" channel, 1/2"	LF	1.03	
3160	Vinyl siding, accessories, "J" channel, 1"	LF	1.10	
07467 3299	Outside corner post			
3300	Vinyl siding, accessories, 3" face, outside corner post	LF	1.93	
07467 3399	Inside corner post			
3400	Vinyl siding, accessories, inside corner post	LF	1.41	
07467 3499	Door and window trim			
3500	Vinyl siding, accessories, 5/8", 2.5" face, door & window trim	LF	1.68	
07467 3599	Soffit and fascia			
3600	Vinyl siding, accessories, solid, 1' overhang, soffit &	LF	5.83	
3620	Vinyl siding, accessories, vented, 1' overhang, soffit &	LF	5.86	
3700	Vinyl siding, accessories, solid, 2' overhang, soffit &	LF	7.04	
3720	Vinyl siding, accessories, vented, 2' overhang, soffit &	LF	7.08	
07469 0010	Wood siding, boards			
07469 3199	Cedar bevel			
3200	Wood siding, boards, cedar bevel, A grade, 1/2" x 6"	SF	1.09	0.30
3300	Wood siding, boards, cedar bevel, A grade, 1/2" x 8"	SF	1.40	0.30
3500	Wood siding, boards, cedar bevel, clr grade, 3/4" x 10"	SF	2.13	0.33
07469 3609	Cedar lap			
3610	Wood siding, boards, cedar lap, 1" x 12", rough sawn	LF	2.87	0.36
07470 0010	Wood product siding			
07470 0030	Lap siding, hardboard			
0060	Wood product siding, lap siding, hardboard, 7/16" x 9"	SF	1.59	0.37
0070	Wood product siding, lap siding, hardboard, 7/16" x 12"	SF	1.77	0.43
07470 0899	Plywood			
0900	Wood product siding, 3/8" thick, plywood, medium density overlay	SF	1.92	0.37
1600	Wood product siding, 5/8" thick, natural, plywood, T-1-11, cedar	SF	2.47	0.37
1900	Wood product siding, 5/8" thick, natural, plywood, T-1-11, fir	SF	1.92	0.27

07500 Membrane Roofing

07510 Built-Up Bituminous Roofing

Note: The Following Prices Do Not Include The Insulation Costs or Demolition

07511 0009 Asphalt

0010	Asphalt coated felt, #30, 2 sq per roll, not mopped	CSF	10.10	
0300	Asphalt, roll roofing, smooth, #65, not mopped	CSF	29.53	7.21
0500	Asphalt, roll roofing, smooth, #90, not mopped	CSF	30.06	7.21
0600	Preformed Roof w/Corr Cement Abs 3/8" Attached to Steel		9.82	0.65
0900	Asphalt, ballast, 3/8" - 1/2" in place	TON	71.68	17.88
0950	Asphalt, ballast, 3/4" - 1.5" in place	CY	109.01	26.76

07512 0010 Built-up roofing JOC

NOTE: Includes 10 Year Warranty

0200	BUR, asph flood ct w/grvl surf, 3 plies #15 felt, mppd, base	CSF	116.38	28.65
0500	BUR, asph flood ct w/grvl surf, 4 plies #15 felt, mppd, base	CSF	140.55	28.65
0502	Built-Up Roof, 4 Ply Asb Roofing Bituminous Roofing w/Gravel	CSF	102.11	
0700	BUR, asph flood ct w/grvl surf, 2 ply glass, mppd, ctd glass base	CSF	120.22	17.79
4420	Built-up roofing, bond, 20 years	CSF	16.48	
4425	BUR, inverted roof membrane sys, gravel, 3 ply BUR, 2" EPS insul	CSF	131.29	58.43
4440	BUR system to repl gravel w/ 12"x12"x1-1/2" concrete pavers, add		33.72	
4430	BUR, Bond 10 Yrs-Asbestos Roof	CSF	54.99	
4440	BUR, Bond 20 Yrs-Asbestos Roof	CSF	15.31	

07513 0009 Cants

0010	Cants, 4" x 4" treated timber, cut diagonally	LF	1.66	0.23
0100	Cants, 4" x 4" foanglass	LF	2.92	0.29
0200	Cants, 4" x 4" mineral fiber	LF	0.91	0.26

07515 0009 Walkway

0010	Walkway for BUR, asph impregnated, 3' x 6' x 1/2" thk	SF	1.61	0.15
0100	Walkway for BUR, hot applied, asph impregnated, 3' x 3' x 3/4"	SF	3.03	0.32

07520 Prepared Roll Roofing

Note: The Following Prices Do Not Include Insulation

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07524 0010	Roll roofing			
0300	Roll rfg, asph, 1 ply #15 felt, 1 ply mnl surf, lap 19", nld &	CSF	92.16	18.73
07531 0010	Elastomeric roofing			
1000	Elastomeric rfg, 1/16" thk, neoprene membrane, fully adhered	SF	3.06	
1001	Elastomeric rfg, 5-20 SF patch, neoprene membrane, 1/16" thk	SF	7.71	
1550	Elastomeric rfg, urethane, 24 mil thk, 2 coats	SF	1.83	
2300	Elastomeric rfg, polyurethane, 1" thk, R7 min, spray on, 2 components	CSF	156.79	
3500	Elastomeric rfg, 16 mil/coat, silicone spray on, 2 coats	CSF	249.87	
3510	Ballast, 1-1/2" Size, For EPDM Roof, Spread To Desired Thickness	CY	118.72	
3520	Precast Conc Roof Pavers 60Lb/Block, 10Lb/Sf, W/60Ml EPDM Layer	SF	11.21	
3610	40 M Self-Adhering Membrane, Bonded To Polyethylene Sheet		0.95	
07532 0010	Single-ply membrane			
07532 3500	Ethylene propylene diene monomer (EPDM)			
3800	Single-ply memb, 45 mil, 0.28 PSF, fully adhered w/adhesive, EPDM	SF	1.40	
4800	Single-ply memb, 60 mil, 0.40 PSF, fully adhered w/adhesive, EPDM	SF	1.55	
07532 8200	Polyvinyl chloride (PVC)			
8850	Single-ply memb, 48 mil, 0.33 PSF, fully adhered w/adhesive, reinf,	SF	1.78	
8870	Single-ply memb, 60 mil, 0.40 PSF, loose-laid/ballasted(12 PSF),	SF	1.26	
07533 1000	Chlorinated Polyethylene (CPE)			
1001	40 Mls, CPE, W Fasteners	SQ	185.14	
07533 2000	Chlorosulfonated Polyethylene-Hypalon (CSPE)			
2001	35 Mls, CSPE, Fully Adhered, Plain	SQ	163.96	
2002	45 Mls, CSPE, Fully Adhered, Plain	SQ	171.70	
2003	45 Mls, CSPE, Fully Adhered, Ballasted	SQ	149.57	
2005	45 Mls, CSPE, W Fasteners	SQ	165.23	
07533 4000	Neoprene			
4001	60 Mls, Neoprene, Partially Adhered	SQ	242.20	
4002	60 Mls, Neoprene, Fully Adhered	SQ	261.57	
07533 5000	Polyisobutylene (PIB)			
5001	100 Mls, PIB, Loose & Ballasted	SQ	145.78	
5002	100 Mls, PIB, Partially Adhered	SQ	150.38	
5003	100 Mls, PIB, Fully Adhered	SQ	166.77	
07533 7000	Reinforced Polyvinyl Chloride (RPVC)			
7001	48 Mls, RPVC, Loose & Ballasted	SQ	107.88	
7002	60 Mls, RPVC, Loose & Ballasted	SQ	115.65	
7003	48 Mls, RPVC, Partially Adhered	SQ	154.95	
7004	60 Mls, RPVC, Partially Adhered	SQ	170.71	
7005	48 Mls, RPVC, Fully Adhered	SQ	165.84	
7006	60 Mls, RPVC, Fully Adhered	SQ	195.15	
07533 8000	Modified Bitumen			
8001	120 Mls, Modified Bitumen, Loose & Ballasted	SQ	81.46	
8002	150 Mls, Modified Bitumen, Loose & Ballasted	SQ	88.33	
8003	160 Mls, Modified Bitumen, Loose & Ballasted	SQ	93.26	
8004	120 Mls, Modified Bitumen, Partially Adhered	SQ	99.64	
8005	150 Mls, Modified Bitumen, Fully Adhered	SQ	108.63	
8006	160 Mls, Modified Bitumen, Fully Adhered	SQ	113.64	
8007	120 Mls, Modified Bitumen, Fully Adhered	SQ	104.82	
8008	150 Mls, Modified Bitumen, Fully Adhered	SQ	113.15	
8009	160 Mls, Modified Bitumen, Fully Adhered	SQ	118.20	
07541	Neoprene Hypalon Liquid Roofing			
07541 1000	Neoprene Hypalon Liquid Roofing			
1001	5 Coat Spray-on Neoprene Hypalon Liquid Roofing	SQ	281.73	
07542	Vinyl Spray Liquid Roofing			
07542 1000	Vinyl Spray Liquid Roofing			
1001	Vinyl Liquid Roofing, 4 Mls	SQ	456.04	
1002	Vinyl Liquid Roofing, 2 Mls	SQ	407.37	
07543	Silicone Liquid Roofing			
07543 1000	Silicone Liquid Roofing			
1001	Silicone Spray-On Roofing 3 Coats w/16 Mls Per Coat	CSF	57.35	
1002	Silicone Rolled-On Roofing 3 Coats w/16 Mls Per Coat	CSF	79.41	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1003	Silicone Brushed-On Roofing 3 Co ats w/16 Mls Per Coat	CSF	95.88	
07544	Polyurethane Spray-on W/ 20 Mil Silicone Rubber			
07544 1000	Polyurethane Spray-on W 20 MI Silicone Rubber			
1001	Polyurethane Spray-On Roofing w/ 2 Components, 1" Thick, R7 Mn	SQ	275.31	
1002	Polyurethane Spray-On Roofing w/ 2 Components, 2" Thick, R14 Mn	SQ	341.68	
1003	Polyurethane Spray-On Roofing w/ 2 Components, 3" Thick, R21 Mn	SQ	472.13	
07545	Aluminization			
07545 1000	Spray Coat Aluminization On Roof Material			
1001	Spray Coat Aluminization	SQ	33.23	
07600	Flashing & Sheet Metal			
07620	Sheet Metal Flash & Trim			
07621 0009	Downspouts			
07621 0009	Aluminum			
0010	Downspouts, aluminum 2" x 3", .020" thick, embossed	LF	2.37	0.82
0100	Downspouts, aluminum 2" x 3", .020" thick, enameled	LF	2.34	0.78
0300	Downspouts, aluminum 2" x 3", .024" thick, enameled	LF	2.85	1.23
0400	Downspouts, aluminum 3" x 4", .024" thick, enameled	LF	3.82	1.24
0550	Alum Downspout, 4"x5", .024" Thk Enameled	LF	3.82	1.24
0600	Downspouts, aluminum round, corrugated, 3" dia, .020" thk	LF	2.57	0.82
0700	Downspouts, aluminum round, corrugated, 4" dia, .025" thk	LF	3.66	1.12
07621 1499	Copper			
07621 1499	Round, stock			
1500	Downspouts, copper, round, 16 oz, stock, 2" dia	LF	7.31	0.78
1600	Downspouts, copper, round, 16 oz, stock, 3" dia	LF	6.07	1.12
1800	Downspouts, copper, round, 16 oz, stock, 4" dia	LF	8.16	1.19
1900	Downspouts, copper, round, 16 oz, stock, 5" dia	LF	10.21	1.46
07621 2099	Rectangular			
2100	Downspouts, copper, 2" x 3", rect, 16 oz corrugated, stock	LF	6.30	0.78
2200	Downspouts, copper, 3" x 4", rect, 16 oz corrugated, stock	LF	8.39	0.78
07621 3599	Lead-coated copper			
07621 3599	Round, stock			
3600	Downspouts, lead-coated copper, round, stock, 2" dia	LF	9.81	0.78
3700	Downspouts, lead-coated copper, round, stock, 3" dia	LF	7.27	1.12
3900	Downspouts, lead-coated copper, round, stock, 4" dia	LF	9.46	1.19
4000	Downspouts, lead-coated copper, corrugated, round, stock, 5" dia	LF	8.60	1.46
4200	Downspouts, lead-coated copper, corrugated, round, stock, 6" dia	LF	13.83	1.46
07621 4299	Rectangular, stock			
4300	Downspouts, lead-coated copper, stock, 2" x 3", rect, corrugated	LF	7.49	0.78
4350	Downspouts, lead-coated copper, stock, 3" x 4", rect, corrugated	LF	17.66	0.78
07621 4400	Lead-Coated Copper Gutters			
4410	4"W Lead-Coated Copper Downspout		15.54	1.37
4420	6"W Lead-Coated Copper Downspout		18.36	1.44
4430	4"W Type K Lead-Coated Copper Downspout, Type K		17.68	1.37
4440	5"W Type K Lead-Coated Copper Downspout, Type K		19.01	1.37
07621 4699	PVC			
4700	Downspouts, PVC, 2" x 3" x 3"	EA	13.92	6.25
4710	Downspouts, PVC, 2" x 3" x 4"	EA	13.95	5.95
4720	Downspouts, PVC, 3" x 4" x 4"	EA	15.20	5.76
07621 4799	Steel, galvanized			
07621 4799	Round, corrugated			
4800	Downspouts, stl, 2" or 3" dia, 28 ga, galv, round, corrugated	LF	2.41	0.82
4900	Downspouts, stl, 28 ga, galv, round, corrugated, 4" dia	LF	3.14	1.08
5100	Downspouts, stl, 28 ga, galv, round, corrugated, 5" dia	LF	3.75	1.27
5400	Downspouts, stl, 28 ga, galv, round, corrugated, 6" dia	LF	4.73	1.65
07621 5999	Rectangular, plain			
6000	Downspouts, stl, 2" x 3", rect, plain, 28 ga, galv	LF	2.51	0.86
6100	Downspouts, stl, 3" x 4", rect, plain, 28 ga, galv	LF	3.48	0.93
6300	Downspouts, stl, 2" x 3", rect, epoxy painted, 24 ga, corrugated	LF	2.76	0.71
6400	Downspouts, stl, 3" x 4", rect, epoxy painted, 24 ga, corrugated	LF	4.07	1.19

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07621 6500 Stainless Steel Downspouts 22Ga				
Note: Includes Fasteners And Connectors AISI Type 304, Astm A167, 2D Annealed				
6510	3"x5" Rectangle Plain	LF	14.72	1.20
6520	4"x5" Rectangle Plain	LF	20.62	1.20
6530	5"x6" Rectangle Plain	LF	26.71	1.20
07622 0009 Drip edge				
0020	Aluminum Drip Edge, .016" Thick 5" Girth, White Finish	LF	1.78	0.23
0030	Aluminum Drip Edge, .016" Thick 8" Girth, White Finish	LF	2.40	0.23
0040	Aluminum Drip Edge, .016" Thick 28" Girth, White Finish	LF	8.85	1.21
0060	Galvanized Steel Drip Edge, 5" Girth	LF	1.13	0.23
0070	Galvanized Steel Drip Edge, 8" Girth	LF	1.56	0.23
07624 0009 Flashing				
07624 0009 Aluminum mill finish				
0010	Flashing, aluminum mill finish, .013" thick	SF	2.45	1.01
0060	Flashing, aluminum mill finish, .019" thick	SF	2.98	1.01
0100	Flashing, aluminum mill finish, .032" thick	SF	3.18	1.01
0200	Flashing, aluminum mill finish, .040" thick	SF	3.70	0.97
07624 2609 Copper, sheets				
2610	Flashing, copper, 16 oz sheets, under 1000 lb	SF	5.48	1.20
2620	Flashing, copper, 16 oz sheets, over 4000 lb	SF	4.53	0.94
2630	Flashing, copper, 20 oz sheets, under 1000 lb	SF	6.15	1.23
2640	Flashing, copper, 20 oz sheets, over 4000 lb	SF	5.14	0.97
2650	Flashing, copper, 24 oz sheets, under 1000 lb	SF	6.82	1.27
2660	Flashing, copper, 24 oz sheets, over 4000 lb	SF	5.81	1.01
2670	Flashing, copper, 32 oz sheets, under 1000 lb	SF	8.02	1.31
2680	Flashing, copper, 32 oz sheets, over 4000 lb	SF	6.86	1.05
07624 2799 Copper, paperbacked				
2800	Flashing, copper, paperbacked 1 side, 2 oz	SF	1.91	0.45
3100	Flashing, copper, paperbacked 2 sides, 2 oz	SF	1.97	0.45
3200	Flashing, copper, paperbacked 2 sides, 5 oz	SF	2.91	0.41
07624 4809 EPDM 90 mils				
4810	Flashing, EPDM 90 mil, 1" dia pipe flashing	EA	20.38	1.42
4820	Flashing, EPDM 90 mil, 2" dia pipe flashing	EA	21.00	1.42
4830	Flashing, EPDM 90 mil, 3" dia pipe flashing	EA	21.72	1.46
4840	Flashing, EPDM 90 mil, 4" dia pipe flashing	EA	27.38	1.98
4842	90 Ml Flashing, 5" Dia Pipe	EA	55.99	4.24
4850	Flashing, EPDM 90 mil, 6" dia pipe flashing	EA	28.51	1.94
4851	90 Ml Flashing, 8" Dia Pipe	EA	67.48	6.08
4852	90 Ml Flashing, 12" Dia Pipe	EA	87.81	6.08
4854	90 Ml Flashing, 10" Dia Pipe	EA	78.92	7.09
5910	Flashing, lead, 4 lb per SF, 20' long rolls, over 24" wide	SF	7.66	
07624 6099 Lead-coated copper				
07624 6099 Fabric backed				
6100	Flashing, lead-coated copper, fabric-backed 2 sides, 2 oz	SF	2.56	0.38
6200	Flashing, lead-coated copper, fabric-backed 2 sides, 5 oz	SF	2.84	0.38
07624 6399 Mastic-backed				
6400	Flashing, lead-coated copper, mastic-backed 2 sides, 2 oz	SF	2.15	0.34
6500	Flashing, lead-coated copper, mastic-backed 2 sides, 5 oz	SF	2.57	0.34
07624 6999 Paperbacked				
7000	Flashing, lead-coated copper, paperbacked 2 sides, 2 oz	SF	2.04	0.41
7100	Flashing, lead-coated copper, paperbacked 2 sides, 5 oz	SF	2.78	0.41
07624 7179 Neoprene				
7180	Flashing, neoprene, 60 mil, 6" strip	LF	1.57	0.41
7190	Flashing, neoprene, 60 mil, 12" strip	LF	3.15	0.64
7200	Flashing, neoprene, 60 mil, 18" strip	LF	4.54	0.75
7210	Flashing, neoprene, 60 mil, 24" strip	LF	6.30	0.94
07624 7299 Polyvinyl chloride				
7300	Flashing, polyvinyl chloride, black, .010" thick	SF	0.98	0.38
7400	Flashing, polyvinyl chloride, black, .020" thick	SF	1.07	0.35
7600	Flashing, polyvinyl chloride, black, .030" thick	SF	1.18	0.35
7700	Flashing, polyvinyl chloride, black, .056" thick	SF	1.70	0.38
07624 8499 Shower pan				

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8500	Flashing, shower pan, bituminous membrane, 7 oz	SF	3.19	
8700	Flashing, shower pan, lead on copper and fabric, 5 oz	SF	3.86	
07624 8899 Stainless steel sheets				
8900	Flashing, sst sheets, 32 ga, .010" thick	SF	4.46	0.86
9290	Flashing, sst sheets, for mechanically keyed flashing, add		1.01	
9000	Flashing, sst sheets, 28 ga, .015" thick	SF	4.93	0.86
9290	Flashing, sst sheets, for mechanically keyed flashing, add		1.20	
07624 9299 Stainless steel, paperbacked				
9300	Flashing, sst, paperbacked 2 sides, .005" thick	SF	3.13	0.56
07624 9929 Mastic sealer				
9930	Flashing, mastic sealer, 1/4" bead @ joint	LF	1.36	0.53
07625 0009 Aluminum Gutters - Stock Units				
07625 0009 Aluminum				
0010	Gutters, aluminum stock units, 5" box, .027" thick, plain	LF	3.50	1.16
0300	Gutters, aluminum 5" box type, .032" thick, plain	LF	3.78	1.19
0650	Gutters, aluminum custom fabricated w/gravel stop	LF	15.68	4.79
07625 0699 Copper				
07625 0699 Half round				
0700	Gutters, copper, half round, 16 oz, stock units, 4" wide	LF	6.29	1.16
0900	Gutters, copper, half round, 16 oz, stock units, 5" wide	LF	6.96	1.27
1000	Gutters, copper, half round, 16 oz, stock units, 6" wide	LF	7.60	1.34
07625 1199 K type stock				
1200	Gutters, copper, K type, 16 oz, stock, 4" wide	LF	6.67	1.12
1300	Gutters, copper, K type, 16 oz, stock, 5" wide	LF	6.79	1.16
07625 1499 Lead coated copper				
07625 1499 Half round, stock				
1500	Gutters, lead coated copper, half round, stock, 4" wide	LF	8.22	1.12
1600	Gutters, lead coated copper, half round, stock, 6" wide	LF	9.90	1.16
07625 1799 K type stock				
1800	Gutters, lead coated copper, K type, stock, 4" wide	LF	10.69	1.12
1900	Gutters, lead coated copper, K type, stock, 5" wide	LF	9.86	1.16
07625 2399 Steel, galvanized				
2400	Gutters, stl, plain, galv, half round/box, 28 ga, 5" wide	LF	3.55	1.23
2500	Gutters, stl, enameled, galv, half round/box, 28 ga, 5" wide	LF	3.48	1.12
2700	Gutters, steel, 26 ga galvanized steel, stock, 5" wide	LF	3.46	1.23
2800	Gutters, steel, 26 ga galvanized steel, stock, 6" wide	LF	3.95	1.23
07625 2900 Stainless Steel Gutters 20Ga				
Note: Includes Fasteners And Connectors AISI Type 304, ASTM A167, 2D Annealed				
2910	4" Box Plain	LF	10.57	150.88
2920	5" Box Plain	LF	10.91	150.88
2930	6" Box Plain	LF	11.43	150.88
07629 0009 Reglet				
0010	Reglet, aluminum .025" thick, in conc parapet	LF	2.24	
0400	Reglet, galvanized steel, 24 gauge, in conc parapet	LF	2.09	
07631 0010 Waterstop				
1000	Waterstop, sst, T-section, 22 gauge, 1.5" x 3"	LF	6.73	0.83
1010	Waterstop, sst, T-section, 22 gauge, 2" x 2"	LF	6.70	0.83
1020	Waterstop, sst, T-section, 22 gauge, 4" x 3"	LF	7.70	0.93
1030	Waterstop, sst, T-section, 22 gauge, 6" x 4"	LF	8.29	0.86
1040	Waterstop, sst, T-section, 22 gauge, 8" x 4"	LF	8.60	0.86
07700 Roof Specialties & Accessories				
07710 Prefab Roof Specialties				
07715 0009 Gravel stop				
0010	Gravel stop, al, mill finish, .050" thick, 4" height	LF	5.26	1.12
0300	Gravel stop, al, mill finish, .050" thick, 6" height	LF	6.01	1.24
0600	Gravel stop, al, mill finish, .050" thick, 8" height	LF	7.07	1.34
0900	Gravel stop, al, mill finish, .080" thick, 12" height, 2 piece	LF	10.61	1.79
07717 0010 Roof drainage boot				
0100	Roof drainage boot, cast iron, 2" x 3"	LF	57.71	1.64
0200	Roof drainage boot, cast iron, 3" x 4"	LF	91.06	1.46

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0300	Roof drainage boot, cast iron, 4" x 5"	LF	67.04	0.93
0400	Roof drainage boot, cast iron, 4" x 6"	LF	46.48	0.71
0500	Roof drainage boot, cast iron, 5" x 7"	LF	59.54	0.75
0600	Cast Iron Downspout Boot	EA	24.32	0.75
07720 Roof Accessories				
07725 0010 Roof drains				
0100	Roof drains, scupper, 12" long, galv steel, 26 ga, 4" legs	EA	32.94	11.07
0300	Roof drains, scupper, sst, 10" x 10" x 4"	EA	139.49	11.07
0400	Roof drains, scupper, sst, 22" x 4" x 4"	EA	148.97	11.18
0500	Roof drains, scupper, sst, tapered, 4" to 8" x 8" x 5"	EA	135.02	10.92
07726 0010 Roof hatches				
0500	Roof hatches, 2'-6" x 3', al curb & cover, w/curb, 1" fbgl	EA	573.10	34.61
0540	Roof hatches, 2'-6" x 3', galv stl curb/cover, w/curb, 1" fbgl	EA	452.81	28.38
0542	Roof hatches, 2'-6" x 3', plain steel, primed, w/curb, 1" fbgl	EA	454.57	31.99
0600	Roof hatches, 2'-6" x 4'-6", al curb/cover, w/curb, 1" fbgl	EA	762.47	39.44
0900	Roof hatches, 2'-6" x 4'-6", galv stl curb/cov, w/curb, 1"	EA	647.51	31.04
1000	Roof hatches, 2'-6" x 4'-6", plain stl, primed, w/curb, 1"	EA	656.92	35.76
1200	Roof hatches, 2'-6" x 8'-0", al curb/cov, w/curb, 1" fbgl insul	EA	1,307.28	75.66
1500	Roof hatches, 2'-6" x 8'-0", galv stl curb/cov, w/curb, 1"	EA	1,201.35	43.51
1600	Roof hatches, 2'-6" x 8'-0", plain stl, primed, w/curb, 1"	EA	1,165.45	54.24
07729 0010 Vents				
0100	Vents, soffit or eave, 2.5" wide, al, mill finish, strips	LF	1.68	0.57
0200	Vents, soffit or eave, 3" wide, al, mill finish, strips	LF	1.74	0.67
0300	Vents, soffit or eave, 3" wide, al, enamel finish, strips	LF	1.84	0.60
0400	Vents, soffit or eave, 4" x 16", al, mill finish, rectangular	EA	5.23	1.57
0500	Vents, soffit or eave, 8" x 16", al, mill finish, rectangular	EA	5.61	1.60
0600	Vents, foundation, rectangular, 8" x 16" screened casing	EA	11.86	2.88
07731 0010 Ridge Vents				
0100	Ridge vent, aluminum strips, mill finish	LF	2.87	0.71
0200	Ridge vent, aluminum strips, mill finish, connectors	EA	6.91	2.80
0300	Ridge vent, aluminum strips, mill finish, end caps	EA	5.80	2.50
0400	Ridge vent, galvanized strips	LF	25.81	7.44
07740 Roof Pavers				
07740 1000 Roof Pavers				
1001	Roof Paver Unitarian, Various Sizes & Colors	SF	6.31	
07800 Skylights				
07810 Plastic Skylights				
07811 0010 Skylight				
Note: Not Including Mounting Curb				
0300	Skylight, plstc domes, under 10 SF, dbl, flush/curb mtd, no curb	SF	27.44	4.43
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		5.81	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		7.74	
0400	Skylight, plstc domes, under 10 SF, sgl, flush/curb mtd, no curb	SF	21.99	3.41
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		4.63	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		6.17	
0600	Skylight, plstc domes, 10 to 20 SF, dbl, flush/curb mtd, no curb	SF	19.08	1.70
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		4.73	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		6.30	
0700	Skylight, plstc domes, 10 to 20 SF, sgl, flush/curb mtd, no curb	SF	18.08	1.54
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		4.63	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		6.17	
0900	Skylight, plstc domes, 20 to 30 SF, dbl, flush/curb mtd, no curb	SF	18.77	1.48
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		4.83	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		6.44	
1000	Skylight, plstc domes, 20 to 30 SF, sgl, flush/curb mtd, no curb	SF	15.89	1.31
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		4.09	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		5.45	
1200	Skylight, plstc domes, 30 to 65 SF, dbl, flush/curb mtd, no curb	SF	19.00	1.41
1800	Skylight, plstc domes, for integral insul 9" curbs, double, add		5.02	
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		6.70	
1300	Skylight, plstc domes, 30 to 65 SF, sgl, flush/curb mtd, no curb	SF	15.46	1.15
1900	Skylight, plstc domes, for integral insul 9" curbs, single, add		5.50	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
07820 Metal Framed Skylights				
07822 0009 Skyroofs				
07822 0009 Translucent panels				
0010	Skyroofs, translucent panels, 2.75" thick, under 5000 SF	SF	23.26	1.05
0100	Skyroofs, translucent panels, 2.75" thick, over 5000 SF	SF	20.67	0.92
07822 0299 Continuous vaulted, semi-circular				
0300	Skyroofs, to 8' wide, continuous vaulted, double glazed,	SF	56.15	4.53
0400	Skyroofs, to 8' wide, continuous vaulted, single glazed,	SF	38.34	3.35
0600	Skyroofs, to 20' wide, continuous vaulted, sgl glazed,	SF	41.23	2.07
0700	Skyroofs, over 20' wide, continuous vaulted, sgl glazed,	SF	46.28	1.87
07822 1200 Pyramid type units, self-supporting				
1300	Skyroofs, pyramid units, sgl glz, min, self-sprt, to 30' clr opng,	SF	28.53	2.13
1310	Skyroofs, pyramid units, sgl glz, avg, self-sprt, to 30' clr opng,	SF	39.55	3.18
1400	Skyroofs, pyramid units, sgl glz, max, self-sprt, to 30' clr opng,	SF	55.75	4.43
07822 1499 Grid type				
1500	Skyroofs, 4'-10' modules, min, single glass glazed, grid type	SF	35.85	3.61
1550	Skyroofs, 4'-10' modules, max, single glass glazed, grid type	SF	57.88	3.05
1600	Skyroofs, 4'-10' modules, min, preformed acrylic, grid type	SF	40.21	3.61
1650	Skyroofs, 4'-10' modules, max, preformed acrylic, grid type	SF	57.63	3.05
07900 Joint Sealers				
07924 Sealants & Caulkings				
07924 0010 Caulking and sealants				
07924 0031 Backer rod, polyethylene				
0032	Caulking & sealants, backer rod, polyethylene, 1/4" dia	LF	0.55	
0052	Caulking & sealants, backer rod, polyethylene, 1/2" dia	LF	0.58	
0072	Caulking & sealants, backer rod, polyethylene, 3/4" dia	LF	0.60	
0092	Caulking & sealants, backer rod, polyethylene, 1" dia	LF	0.65	
07924 0100 Caulking compound, acrylic latex				
0400	Caulking & sealants, 1/4"x1/4", acrylic latex caulk, white, in	CLF	101.16	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		1.41	
0410	Caulking & sealants, 1/4"x3/8", acrylic latex caulk, white, in	CLF	111.26	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		2.11	
0500	Caulking & sealants, 1/4"x1/2", acrylic latex caulk, white, in	CLF	118.68	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		2.81	
0510	Caulking & sealants, 3/8"x3/8", acrylic latex caulk, white, in	CLF	122.11	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		3.15	
0520	Caulking & sealants, 3/8"x1/2", acrylic latex caulk, white, in	CLF	131.38	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		4.22	
0530	Caulking & sealants, 3/8"x5/8", acrylic latex caulk, white, in	CLF	140.58	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		5.27	
0540	Caulking & sealants, 3/8"x3/4", acrylic latex caulk, white, in	CLF	147.87	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		6.29	
0600	Caulking & sealants, 1/2"x1/2", acrylic latex caulk, white, in	CLF	136.62	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		5.62	
0610	Caulking & sealants, 1/2"x5/8", acrylic latex caulk, white, in	CLF	152.76	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		7.03	
0620	Caulking & sealants, 1/2"x3/4", acrylic latex caulk, white, in	CLF	162.60	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		8.44	
0630	Caulking & sealants, 1/2"x7/8", acrylic latex caulk, white, in	CLF	172.40	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		9.84	
0640	Caulking & sealants, 1/2"x1", acrylic latex caulk, white, in	CLF	182.77	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		11.25	
0800	Caulking & sealants, 3/4"x3/4", acrylic latex caulk, white, in	CLF	192.14	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		12.66	
1000	Caulking & sealants, 1"x1", acrylic latex caulk, white, in	CLF	278.50	
1010	<i>Caulking & sealants, oil based, bulk, for coloring, add</i>		21.12	
07924 1500 UL Listed Fire Rated Sealant				
1501	1/2" x 1/2" Joint, UL Listed Fire Rated Sealant	LF	2.56	
07924 3199 Polyurethane, 1 or 2 component				
3200	Caulking & sealants, polyurethane, 1 or 2 component,	GAL	47.91	
3500	Caulking & sealants, in place, 1/4"x1/4", polyurethane, 1 - 2	CLF	180.78	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		2.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3510	Caulking & sealants, in place, 1/4"x3/8", polyurethane, 1 - 2	CLF	191.91	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		3.50	
3520	Caulking & sealants, in place, 3/8"x3/8", polyurethane, 1 - 2	CLF	205.85	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		5.25	
3530	Caulking & sealants, in place, 3/8"x1/2", polyurethane, 1 - 2	CLF	221.04	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		6.98	
3540	Caulking & sealants, in place, 3/8"x5/8", polyurethane, 1 - 2	CLF	235.45	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		8.76	
3550	Caulking & sealants, in place, 3/8"x3/4", polyurethane, 1 - 2	CLF	261.10	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		10.57	
3560	Caulking & sealants, in place, 1/2"x1/2", polyurethane, 1 - 2	CLF	245.75	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		9.33	
3570	Caulking & sealants, in place, 1/2"x5/8", polyurethane, 1 - 2	CLF	267.92	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		11.59	
3580	Caulking & sealants, in place, 1/2"x3/4", polyurethane, 1 - 2	CLF	289.14	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		14.09	
3590	Caulking & sealants, in place, 1/2"x7/8", polyurethane, 1 - 2	CLF	307.09	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		16.33	
3600	Caulking & sealants, in place, 1/2"x1/4", polyurethane, 1 - 2	CLF	201.99	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		4.67	
3850	Caulking & sealants, in place, 3/4"x3/4", polyurethane, 1 - 2	CLF	317.93	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		21.14	
3875	Caulking & sealants, in place, 3/4"x1", polyurethane, 1 - 2	CLF	432.09	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		27.64	
3900	Caulking & sealants, in place, 1"x1/2", polyurethane, 1 - 2	CLF	349.73	
4000	<i>Caulking & sealants, polyurethane, bulk, for coloring, add</i>		18.66	
07924 4359 Butyl rubber filler				
4360	Caulking & sealants, butyl rubber filler, 1/4" x 1/4"	LF	0.85	
4390	<i>Caulking & sealants, butyl rubber, bulk, for coloring, add</i>		0.00	
4365	Caulking & sealants, butyl rubber filler, 1/2" x 1/2"	LF	1.00	
4390	<i>Caulking & sealants, butyl rubber, bulk, for coloring, add</i>		0.00	
4370	Caulking & sealants, butyl rubber filler, 1/2" x 3/4"	LF	1.20	
4390	<i>Caulking & sealants, butyl rubber, bulk, for coloring, add</i>		0.00	
4375	Caulking & sealants, butyl rubber filler, 3/4" x 3/4"	LF	1.10	
4390	<i>Caulking & sealants, butyl rubber, bulk, for coloring, add</i>		0.00	
4380	Caulking & sealants, butyl rubber filler, 1" x 1"	LF	1.43	
4390	<i>Caulking & sealants, butyl rubber, bulk, for coloring, add</i>		0.01	
07924 4424 Neoprene gasket				
4425	Caulking & sealants, 1/8" x 3", closed cell w/adh, neoprene	CLF	121.51	
4450	Caulking & sealants, 1/8" x 6", closed cell w/adh, neoprene	CLF	176.58	
4525	Caulking & sealants, 1/4" x 3", closed cell w/adh, neoprene	CLF	143.19	
4550	Caulking & sealants, 1/4" x 6", closed cell w/adh, neoprene	CLF	213.13	
4725	Caulking & sealants, 1/2" x 6", closed cell w/adh, neoprene	CLF	226.11	
4750	Caulking & sealants, 1/2" x 9", closed cell w/adh, neoprene	CLF	274.26	
4775	Caulking & sealants, 1/2" x 12", closed cell w/adh, neoprene	CLF	305.82	
07924 4899 O-ring				
4900	Caulking & sealants, O-ring, 1/4"	LF	0.84	
4910	Caulking & sealants, O-ring, 1/2"	LF	1.67	
4920	Caulking & sealants, O-ring, 3/4"	LF	2.68	
4930	Caulking & sealants, O-ring, 1"	LF	4.75	
4940	Caulking & sealants, O-ring, 1.25"	LF	10.65	
4950	Caulking & sealants, O-ring, 1.5"	LF	11.90	
4960	Caulking & sealants, O-ring, 1.75"	LF	21.45	
4970	Caulking & sealants, O-ring, 2"	LF	35.84	
07924 4979 Polyethylene joint backing				
4980	Caulking & sealants, 1/4" x 2", polyethylene joint backing	CLF	129.74	
4990	Caulking & sealants, 1/4" x 6", polyethylene joint backing	CLF	215.99	
07924 5599 Silicone, room temperature vulcanizing foam seal				
5600	Caulking & sealants, 1/4" x 1/2", silicone, room temp	LF	0.46	
5610	Caulking & sealants, 1/2" x 1/2", silicone, room temp	LF	0.92	
5620	Caulking & sealants, 1/2" x 3/4", silicone, room temp	LF	1.37	
5630	Caulking & sealants, 3/4" x 3/4", silicone, room temp	LF	1.97	
5640	Caulking & sealants, 1/8" x 1", silicone, room temp vulcanizing	LF	0.46	
5650	Caulking & sealants, 1/8" x 3", silicone, room temp vulcanizing	LF	1.37	
5670	Caulking & sealants, 1/4" x 3", silicone, room temp vulcanizing	LF	2.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5680	Caulking & sealants, 1/4" x 6", silicone, room temp vulcanizing	LF	4.91	
5690	Caulking & sealants, 1/2" x 6", silicone, room temp vulcanizing	LF	9.49	
5700	Caulking & sealants, 1/2" x 9", silicone, room temp vulcanizing	LF	14.43	
5710	Caulking & sealants, 1/2" x 12", silicone, room temp vulcanizing	LF	20.46	
6000	Silicon Caulk&Seal, 1/4"x1/4" Jt	LF	1.44	
6010	Silicon Caulk&Seal, 1/4"x3/8" Jt	LF	1.62	
6020	Silicon Caulk&Seal, 1/4"x1/2" Jt	LF	1.68	
6030	Silicon Caulk&Seal, 3/8"x3/8" Jt	LF	1.79	
6040	Silicon Caulk&Seal, 3/8"x1/2" Jt	LF	1.93	
6050	Silicon Caulk&Seal, 3/8"x5/8" Jt	LF	2.05	
6060	Silicon Caulk&Seal, 3/8"x3/4" Jt	LF	2.10	
6070	Silicon Caulk&Seal, 1/2"x1/2" Jt	LF	2.25	
6080	Silicon Caulk&Seal, 1/2"x5/8" Jt	LF	2.30	
6090	Silicon Caulk&Seal, 1/2"x3/4" Jt	LF	2.40	
6100	Silicon Caulk&Seal, 1/2"x7/8" Jt	LF	2.54	
6110	Silicon Caulk&Seal, 1/2"x1" Joint	LF	2.62	
6120	Silicon Caulk&Seal, 3/4"x3/4" Jt	LF	2.69	
6130	Silicon Caulk&Seal, 1"x1" Joint	LF	2.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08100 Metal Doors & Frames				
08101 Steel Doors & Frames				
NOTE: All door frame include caulk, sealants and threshold. Use 7' line items if no line item exists for 6'-8" or 7'-2".				
08109 0010 Commercial steel doors				
08109 0559 Hollow metal				
0560	Coml stl dr, fl, 2'-0" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	198.79	30.68
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		51.65	
2610	Commercial door, flush steel, for 18" extra height, add		86.09	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		103.30	
0580	Coml stl dr, fl, 2'-4" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	204.15	31.16
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		52.84	
2610	Commercial door, flush steel, for 18" extra height, add		88.06	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		105.67	
0600	Coml stl dr, fl, 2'-6" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	206.50	31.19
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		53.54	
2610	Commercial door, flush steel, for 18" extra height, add		89.24	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		107.08	
0620	Coml stl dr, fl, 2'-8" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	215.73	25.22
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		55.32	
2610	Commercial door, flush steel, for 18" extra height, add		92.21	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2640	Commercial door, flush steel, for dutch door with shelf, add		110.65	
0640	Coml stl dr, fl, 3'-0" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	228.62	23.76
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		59.19	
2610	Commercial door, flush steel, for 18" extra height, add		98.65	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		118.38	
0660	Coml stl dr, fl, 3'-4" x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	225.06	23.33
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		57.53	
2610	Commercial door, flush steel, for 18" extra height, add		95.89	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		115.07	
0720	Coml stl dr, fl, pair 3' x 7'-0", full pnl hol core, 20 ga, 1.75" T	EA	415.21	60.00
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		111.25	
2610	Commercial door, flush steel, for 18" extra height, add		185.42	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		222.50	
0800	Coml stl dr, fl, 2'-0" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	333.79	44.26
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		92.15	
2610	Commercial door, flush steel, for 18" extra height, add		153.59	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		184.30	
0820	Coml stl dr, fl, 2'-4" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	335.20	44.00
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		92.15	
2610	Commercial door, flush steel, for 18" extra height, add		153.59	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		184.30	
0840	Coml stl dr, fl, 2'-6" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	335.20	43.60
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		92.15	
2610	Commercial door, flush steel, for 18" extra height, add		153.59	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		184.30	
0860	Coml stl dr, fl, 2'-8" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	338.49	43.56
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		92.15	
2610	Commercial door, flush steel, for 18" extra height, add		153.59	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		184.30	
0880	Coml stl dr, fl, 3'-0" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	338.49	43.56
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		92.15	
2610	Commercial door, flush steel, for 18" extra height, add		153.59	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		184.30	
0900	Coml stl dr, fl, 3'-4" x 7'-0", full pnl hol core, 18 ga, 2" thk	EA	378.54	45.53
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2600	Commercial door, flush steel, for 12" extra height, add		102.91	
2610	Commercial door, flush steel, for 18" extra height, add		171.52	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		205.82	
0920	Coml stl dr, fl, pair 3'-0"x7'-0", full pnl hol core, 18 ga, 2" th	EA	655.90	75.48
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		183.46	
2610	Commercial door, flush steel, for 18" extra height, add		305.77	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		366.92	
1040	Coml stl dr, fl, 2'-0" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	229.17	31.78
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		60.77	
2610	Commercial door, flush steel, for 18" extra height, add		101.28	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		121.53	
1060	Coml stl dr, fl, 2'-4" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	231.70	31.79
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		61.10	
2610	Commercial door, flush steel, for 18" extra height, add		101.84	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		122.20	
1080	Coml stl dr, fl, 2'-6" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	238.37	32.52
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		63.10	
2610	Commercial door, flush steel, for 18" extra height, add		105.17	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		126.20	
1100	Coml stl dr, fl, 2'-8" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	242.41	25.42

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		63.33	
2610	Commercial door, flush steel, for 18" extra height, add		105.55	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		126.65	
1120	Coml stl dr, fl, 3'-0" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	226.38	28.25
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		58.52	
2610	Commercial door, flush steel, for 18" extra height, add		97.53	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		117.04	
1140	Coml stl dr, fl, 3'-4" x 7'-0", full pnl hol core, 18 ga, 1.75" T	EA	261.03	25.19
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		67.66	
2610	Commercial door, flush steel, for 18" extra height, add		112.77	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		135.32	
1160	Coml stl dr, fl, pair 3'x7'-0", full pnl hol core, 18 ga, 1.75" T	EA	476.76	56.44
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		129.72	
2610	Commercial door, flush steel, for 18" extra height, add		216.20	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		259.43	
1170	4' x 7' x 2"x 18Ga Metal Door (Unrated)	EA	478.42	56.44
2500	Commercial door, flush steel, for 8" x 8" vision glass, add		55.00	
2510	Commercial door, flush steel, for 8" x 48" vision glass, add		95.00	
2520	Commercial door, flush steel, for half glass light panel, add		74.00	
2530	Commercial door, flush steel, for fixed metal louver, add		94.00	
2540	Commercial door, flush steel, for soundproofing, add		12.00	
2550	Commercial door, flush steel, for 16 ga door, add		100.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2560	Commercial door, flush steel, for 3 hour door, add		80.00	
2570	Commercial door, flush steel, for 1-1/2 hour door, add		15.00	
2580	Commercial door, flush steel, for 3/4 hour door, add		10.00	
2590	Commercial door, flush steel, for FM label, add		10.00	
2600	Commercial door, flush steel, for 12" extra height, add		142.93	
2610	Commercial door, flush steel, for 18" extra height, add		238.22	
2620	Commercial door, flush steel, for lead lining in door, add		567.00	
2630	Commercial door, flush stl, for sound attenuation material, add		12.00	
2640	Commercial door, flush steel, for dutch door with shelf, add		285.86	
1210	Coml stl dr, fl, w/2'x2' met lvr, 18ga, 1.75" T, 3'x7', full pnl ho	EA	389.30	26.29
1220	Coml stl dr, fl, 2'x2' lite, no gl, 18ga, 1.75" T, 3'x7', full pnl	EA	315.82	25.26
08110 7100	Metal Doors Accessories			
7101	For 8"x8" Vision Glass, Add	EA	42.44	
7102	For 8"x48" Vision Glass, Add	EA	57.03	
7103	For Each Light Panel, Add	EA	68.87	
7104	For Fixed Metal Louver, Add	SF	15.47	
7105	For Sound Proofing, Add	EA	12.25	
7111	For Lead Lining In Doors, Add	EA	101.69	
7112	For Sound Attenuation Material, Add	EA	12.25	
7113	For Insulated Door, Add		62.78	
08110 7200	Metal Frames Accessories			
7201	For 1 Ft Extension Of Door Frame	EA	10.87	
7202	For 14 Ga Frames, Add	EA	10.09	
7203	For 3 Hour Frames, Add Factory Applied	EA	22.77	
7204	For 1-1/2 Hour Frames, Add Factory Applied	EA	22.77	
7205	For 3/4 Hour Frames, Add Factory Applied	EA	22.77	
7206	For Lead Lining In Frames, Add	EA	291.47	
7207	For Thermal Break Frames, Add		30.27	
08114 0010	Residential steel door			
0030	Resi steel door, embossed, full panel, 2'-8" x 6'-8"	EA	319.43	16.70
0040	Resi steel door, embossed, full panel, 3'-0" x 6'-8"	EA	196.37	16.71
08115 1000	Pre-Hung Metal Clad Door Unit, 1-3/4" Exterior Type, Frame, Trim Threshold			
1001	2'-6" x 6'-8", Insulated Metal Clad Door, Wood Frame	EA	238.38	16.67
1002	2'-8" x 6'-8", Insulated Metal Clad Door, Wood Frame	EA	243.07	16.67
1003	3'-0" x 6'-8", Insulated Metal Clad Door, Wood Frame	EA	249.97	16.67
1004	3'-4" x 6'-8", Insulated Metal Clad Door, Wood Frame	EA	255.89	16.67
08115 1100	Aluminum 1/8 In Two Piece			
08115 1110	4-1/8 X 3/8 In			
1111	2 Pc Al Door Fr, 2'-2"x6'-9"0png 4-1/8"x3/8"x1/8"w/Semi Circ Head	EA	466.52	14.50
1112	2 Pc Al Door Fr, 2'-6"x6'-9"0png 4-1/8"x3/8"x1/8"w/Semi Circ Head	EA	466.52	14.50
08115 1120	4-3/4 In X 1-3/8 In			
1121	2 Pc Al Door Fr, 2'-2"x6'-9"0png 4-1/8"x3/8"x1/8"w/Semi Circ Head	EA	466.52	14.50
1122	2 Pc Al Door Fr, 2'-6"x6'-9"0png 4-1/8"x3/8"x1/8"w/Semi Circ Head	EA	466.52	14.50
08115 2000	Pre-Hung Metal Clad Door Unit,			
	Note: 1-3/4" Exterior Type, Half Glass, Frame, Trim Threshold			
2001	2'-6" x 6'-8", Insulated Metal Clad Door, Half Glass, Wood Frame	EA	280.00	25.01
2002	2'-8" x 6'-8", Insulated Metal Clad Door, Half Glass, Wood Frame	EA	284.09	25.01
2003	3'-0" x 6'-8", Insulated Metal Clad Door, Half Glass, Wood Frame	EA	291.26	25.01
2004	3'-4" x 6'-8", Insulated Metal Clad Door, Half Glass, Wood Frame	EA	296.84	25.01
08115 2100	Steel 18 Ga. 1-3/4 In Unrated Door			
2101	2'-2"x6'-9"x1-3/4" 18Ga Stl Door (Unrated) w/Semi Circ Head	EA	466.87	13.12
2102	2'-6"x6'-9"x1-3/4" 18Ga Stl Door (Unrated) w/Semi Circ Head	EA	466.87	13.12
08116 0010	Steel frames, knock down			
0025	Steel frames KD, 3'W sgl, 18 ga, up to 5.75" D, 6'-8" high	EA	109.51	27.96
6400	Steel frame, knock down, for baked enamel finish, add		27.86	
6500	Steel frame, knock down, for galvanizing, add		11.43	
2900	Steel frames KD, 2'-0" W single, 16 ga, 4.75" D, 7'-0"	EA	112.65	27.96
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		28.47	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6500	Steel frame, knock down, for galvanizing, add		11.57	
2910	Steel frames KD, 2'-4" W single, 16 ga, 4.75" D, 7'-0"	EA	112.65	27.96
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		28.47	
6500	Steel frame, knock down, for galvanizing, add		11.57	
2920	Steel frames KD, 2'-6" W single, 16 ga, 4.75" D, 7'-0"	EA	112.65	27.96
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		28.47	
6500	Steel frame, knock down, for galvanizing, add		11.57	
2930	Steel frames KD, 2'-8" W single, 16 ga, 4.75" D, 7'-0"	EA	112.65	27.09
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		28.47	
6500	Steel frame, knock down, for galvanizing, add		11.57	
2940	Steel frames KD, 3'-0" W single, 16 ga, 4.75" D, 7'-0"	EA	112.65	23.80
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		28.47	
6500	Steel frame, knock down, for galvanizing, add		11.57	
2950	Steel frames KD, 3'-4" W single, 16 ga, 4.75" D, 7'-0"	EA	116.30	24.59
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		29.57	
6500	Steel frame, knock down, for galvanizing, add		12.12	
2960	Steel frames KD, 6'-0" W double, 16 ga, 4.75" D, 7'-0"	EA	141.25	24.93
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.72	
6500	Steel frame, knock down, for galvanizing, add		14.53	
3800	Steel frames KD, 2'-0" W single, 16 ga, 6.75" D, 7'-0"	EA	120.73	28.99
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		30.89	
6500	Steel frame, knock down, for galvanizing, add		12.78	
3820	Steel frames KD, 2'-4" W single, 16 ga, 6.75" D, 7'-0"	EA	120.73	28.99
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		30.89	
6500	Steel frame, knock down, for galvanizing, add		12.78	
3840	Steel frames KD, 2'-6" W single, 16 ga, 6.75" D, 7'-0"	EA	120.73	28.09
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		30.89	
6500	Steel frame, knock down, for galvanizing, add		12.78	
3860	Steel frames KD, 2'-8" W single, 16 ga, 6.75" D, 7'-0"	EA	120.73	28.09
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		30.89	
6500	Steel frame, knock down, for galvanizing, add		12.78	
3880	Steel frames KD, 3'-0" W single, 16 ga, 6.75" D, 7'-0"	EA	120.73	24.76
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		30.89	
6500	Steel frame, knock down, for galvanizing, add		12.78	
3900	Steel frames KD, 3'-4" W single, 16 ga, 6.75" D, 7'-0"	EA	123.95	25.46
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		31.86	
6500	Steel frame, knock down, for galvanizing, add		13.27	
4000	Steel frames KD, 4'-0" W single, 16 ga, 6.75" D, 7'-0"	EA	124.66	25.46
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		32.07	
6500	Steel frame, knock down, for galvanizing, add		13.37	
4020	Steel frames KD, 6'-0" W double, 16 ga, 6.75" D, 7'-0"	EA	149.61	26.26
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		38.23	
6500	Steel frame, knock down, for galvanizing, add		15.79	
4040	Steel frames KD, 8'-0" W double, 16 ga, 6.75" D, 7'-0"	EA	154.90	26.26
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		39.81	
6500	Steel frame, knock down, for galvanizing, add		16.58	
4710	Steel frames KD, 2'-0" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	135.27	37.27
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.26	
6500	Steel frame, knock down, for galvanizing, add		14.97	
4720	Steel frames KD, 2'-4" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	135.27	37.27
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.26	
6500	Steel frame, knock down, for galvanizing, add		14.97	
4730	Steel frames KD, 2'-6" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	135.27	37.27
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.26	
6500	Steel frame, knock down, for galvanizing, add		14.97	
4740	Steel frames KD, 2'-8" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	135.27	37.27
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.26	
6500	Steel frame, knock down, for galvanizing, add		14.97	
4750	Steel frames KD, 3'-0" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	135.27	32.68
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		35.26	
6500	Steel frame, knock down, for galvanizing, add		14.97	
4760	Steel frames KD, 3'-4" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	140.32	33.98
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		36.77	
6500	Steel frame, knock down, for galvanizing, add		15.72	
4770	Steel frames KD, 4'-0" W sgl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	143.12	32.98
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		37.61	
6500	Steel frame, knock down, for galvanizing, add		16.14	
4780	Steel frames KD, 5'-0" W dbl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	157.13	34.74
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		41.81	
6500	Steel frame, knock down, for galvanizing, add		18.24	
4790	Steel frames KD, 6'-0" W dbl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	166.00	34.48
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		43.14	
6500	Steel frame, knock down, for galvanizing, add		18.24	
4800	Steel frames KD, 7'-0" W dbl, 16 ga, 5.25" D, 2" dr, 7'-0" H	EA	171.05	35.57
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		44.66	
6500	Steel frame, knock down, for galvanizing, add		19.00	
6200	Steel frames KD, 4' W sgl, 16 ga, "B" label, 8.75" D, 7' H	EA	148.73	33.08
4810	Steel frame, knock down, for 12" extension of door frame, add		15.00	
4820	Steel frame, knock down, for 14 ga frame, add		10.00	
4830	Steel frame, knock down, for 3 hour frame, add		40.00	
4840	Steel frame, knock down, for 1-1/2 hour frame, add		10.00	
4850	Steel frame, knock down, for 3/4 hour frame, add		8.00	
4860	Steel frame, knock down, for lead lining in frame, add		260.00	
6400	Steel frame, knock down, for baked enamel finish, add		39.29	
6500	Steel frame, knock down, for galvanizing, add		16.98	
08118 0010	Metal frame components			
08118 0019	Millions, vertical			
0020	Metal frame cmpt, 1.75" x 4.75", 16 ga, electro galv	LF	10.28	1.63
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0040	Metal frame cmpt, 1.75" x 5.25", 16 ga, electro galv	LF	12.52	2.06
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0060	Metal frame cmpt, 1.75" x 6.75", 16 ga, electro galv	LF	13.39	2.20
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0080	Metal frame cmpt, 2" x 4.75", 16 ga, electro galv millions,	LF	10.28	1.76
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0100	Metal frame cmpt, 2" x 5.25", 16 ga, electro galv millions,	LF	12.52	2.06
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0120	Metal frame cmpt, 2" x 6.75", 16 ga, electro galv millions,	LF	13.39	2.40
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
08118 0139	Rails, horizontal			
0140	Metal frame components, 1.75" x 4.75", 16 ga, rails, horizontal	LF	10.28	1.20
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0160	Metal frame components, 1.75" x 5.25", 16 ga, rails, horizontal	LF	12.52	1.46
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0180	Metal frame components, 1.75" x 6.75", 16 ga, rails, horizontal	LF	13.39	1.50

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0200	Metal frame components, 2" x 4.75", 16 ga, rails, horizontal	LF	10.28	1.23
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0220	Metal frame components, 2" x 5.25", 16 ga, rails, horizontal	LF	12.52	1.46
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
0240	Metal frame components, 2" x 6.75", 16 ga, rails, horizontal	LF	13.39	1.67
1000	Steel frame, components, for 14 ga frame, add		0.80	
1010	Steel frame, components, for 3 hour frame, add		2.40	
1020	Steel frame, components, for 1-1/2 hour frame, add		1.10	
1030	Steel frame, components, for 3/4 hour frame, add		0.75	
08119 0010 Transoms & sidelights				
08119 0020 Steel transom				
0040	Steel transom 3'-4" x 1'-6", 16 ga, 6.75" thk, for 1.75" door	EA	204.90	26.26
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0060	Steel transom 3'-8" x 1'-6", 16 ga, 6.75" thk, for 1.75" door	EA	210.50	26.59
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0080	Steel transom 6'-4" x 1'-6", 16 ga, 6.75" thk, for 1.75" door	EA	245.93	21.47
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0100	Steel transom 3'-4" x 1'-6", 16 ga, 4.75" thk, for 1.75" door	EA	193.69	24.76
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0120	Steel transom 3'-8" x 1'-6", 16 ga, 4.75" thk, for 1.75" door	EA	199.29	25.09
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0140	Steel transom 6'-4" x 1'-6", 16 ga, 4.75" thk, for 1.75" door	EA	234.72	20.43
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
08119 0159 Transoms sash (Hardware And Installation Included In Price)				
0160	Stl transom sash, 3'-0"x1'-4", 16 ga, 6.75" thk, for 1.75" dr	EA	194.15	25.63
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0180	Stl transom sash, 3'-4"x1'-4", 16 ga, 6.75" thk, for 1.75" dr	EA	199.75	25.69
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0200	Stl transom sash, 6'-0"x1'-4", 16 ga, 6.75" thk, for 1.75" dr	EA	268.12	22.13
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0220	Stl transom sash, 3'-0"x1'-4", 16 ga, 4.75" thk, for 1.75" dr	EA	182.94	27.76
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0240	Stl transom sash, 3'-4"x1'-4", 16 ga, 4.75" thk, for 1.75" dr	EA	188.54	24.16
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0260	Stl transom sash, 6'-0"x1'-4", 16 ga, 4.75" thk, for 1.75" dr	EA	256.91	33.01
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
08119 0279 Sidelights				
0280	Steel sidelights, 8" x 7'-2", 16 ga, 6.75" thk, for 1.75" door	EA	210.20	34.28
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0290	Steel sidelights, 8" x 7'-2", 16 ga, 6.75" thk, for 1.75" door	EA	210.20	20.20
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0300	Steel sidelights, 8" x 8'-8", 16 ga, 6.75" thk, for 1.75" door	EA	243.83	39.04
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0340	Steel sidelights, 1'-6" x 8'-8", 16 ga, 6.75" thk, for 1.75" doo	EA	243.83	22.23
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0360	Steel sidelights, 8" x 7'-2", 16 ga, 4.75" thk, for 1.75" door	EA	198.99	32.38
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0370	Steel sidelights, 1'-4" x 7'-2", 16 ga, 4.75" thk, for 1.75" doo	EA	198.99	19.07
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0380	Steel sidelights, 8" x 8'-8", 16 ga, 4.75" thk, for 1.75" door	EA	232.62	37.18
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	
0420	Steel sidelights, 1'-6" x 8'-8", 16 ga, 4.75" thk, for 1.75" doo	EA	232.62	19.70

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1010	Steel frame, knock down, for 14 ga frame, add		10.00	
1020	Steel frame, knock down, for 3 hour frame, add		60.00	
1030	Steel frame, knock down, for 1-1/2 hour frame, add		15.00	
1040	Steel frame, knock down, for 3/4 hour frame, add		12.00	
1050	Steel frame, knock down, for lead lining in frame, add		260.00	

08119 6000 Removal & Reinstallation Of Metal Doors

Note: Includes Storage, Cleaning And Misc. Supply Materials

6001	Rem & Reinstall Metal Door	EA	117.68	
6002	Rem & Reinstall Metal Door Frame	EA	179.56	
6003	Rem & Cutoff, Reinstall Wood Door	EA	10.50	
6004	Rem & Cutoff, Reinstall Metal Door	EA	42.01	

08200 Wood & Plastic Doors

08220 Pre-Hung Interior Door Units

08220 1000 Pre-Hung Interior Door Units, With Solid Wood Frame & Trim

08220 1100 Hollow Core, 1-3/8", Birch, Flush

1101	2'-4"x6'-8"/7'-0" Prehung Door	EA	151.87	33.35
1401	For Oak Door & Frame, Add		13.69	
1402	For Lauan Door, Deduct		-13.69	
1102	2'-6"x6'-8"/7'-0" Prehung Door	EA	153.12	33.35
1401	For Oak Door & Frame, Add		13.88	
1402	For Lauan Door, Deduct		-13.88	
1103	2'-8"x6'-8"/7'-0" Prehung Door	EA	154.34	33.35
1401	For Oak Door & Frame, Add		14.06	
1402	For Lauan Door, Deduct		-14.06	
1104	3'-0"x6'-8"/7'-0" Prehung Door	EA	156.46	33.35
1401	For Oak Door & Frame, Add		14.38	
1402	For Lauan Door, Deduct		-14.38	
1105	3'-4"x6'-8"/7'-0" Prehung Door	EA	169.29	33.35
1401	For Oak Door & Frame, Add		16.30	
1402	For Lauan Door, Deduct		-16.30	

08220 1200 Solid Core, 1-3/8", Birch, Flush

1201	2'-4"x6'-8"/7'-0" Prehung Door	EA	164.12	33.35
1401	For Oak Door & Frame, Add		15.53	
1402	For Lauan Door, Deduct		-15.53	
1202	2'-6"x6'-8"/7'-0" Prehung Door	EA	166.14	33.35
1401	For Oak Door & Frame, Add		15.83	
1402	For Lauan Door, Deduct		-15.83	
1203	2'-8"x6'-8"/7'-0" Prehung Door	EA	170.79	33.35
1401	For Oak Door & Frame, Add		16.53	
1402	For Lauan Door, Deduct		-16.53	
1204	3'-0"x6'-8"/7'-0" Prehung Door	EA	175.14	33.35
1401	For Oak Door & Frame, Add		17.18	
1402	For Lauan Door, Deduct		-17.18	
1205	3'-4"x6'-8"/7'-0" Prehung Door	EA	180.28	33.35
1401	For Oak Door & Frame, Add		17.95	
1402	For Lauan Door, Deduct		-17.95	

08220 1300 Solid Core, 1-3/4", Birch, Flush

1301	2'-4"x6'-8"/7'-0" Prehung Door	EA	194.95	33.34
1401	For Oak Door & Frame, Add		19.80	
1402	For Lauan Door, Deduct		-19.80	
1302	2'-6"x6'-8"/7'-0" Prehung Door	EA	197.35	33.34
1401	For Oak Door & Frame, Add		20.16	
1402	For Lauan Door, Deduct		-20.16	
1303	2'-8"x6'-8"/7'-0" Prehung Door	EA	199.76	33.34
1401	For Oak Door & Frame, Add		20.52	
1402	For Lauan Door, Deduct		-20.52	
1304	3'-0"x6'-8"/7'-0" Prehung Door	EA	201.25	33.34
1401	For Oak Door & Frame, Add		20.75	
1402	For Lauan Door, Deduct		-20.75	
1305	3'-4"x6'-8"/7'-0" Prehung Door	EA	209.65	33.34
1401	For Oak Door & Frame, Add		22.01	
1402	For Lauan Door, Deduct		-22.01	

08250 Wood & Plastic Doors

08254 0010 Wood frames

Note: 6FT-8IN And 7FT-2IN frames Are The Same Price As 7FT Frames. Custom Made WThreshold, Includes All Trim Molding

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08254 2950	Exterior, pine, custom			
2960	Wood frames, 3'-0" x 7'-0", 5/4" x 6-9/16" D, exterior, pine,	EA	130.71	3.19
2975	Wood frames, exterior, for oak, add		69.23	
2980	Wood frames, exterior, for birch, add		69.23	
2985	Wood frames, exterior, for mahogany, add		175.74	
2990	Wood frames, exterior, for additional 12" of height, add		10.40	
2962	4' x 7' Pine Exterior Door Frame Custom Made w/Threshold & Trim	EA	217.41	3.21
2975	Wood frames, exterior, for oak, add		120.05	
2980	Wood frames, exterior, for birch, add		120.05	
2985	Wood frames, exterior, for mahogany, add		304.74	
2990	Wood frames, exterior, for additional 12" of height, add		10.40	
2964	5' x 7' Pine Exterior Door Frame Custom Made w/Threshold & Trim	EA	238.49	3.91
2975	Wood frames, exterior, for oak, add		132.23	
2980	Wood frames, exterior, for birch, add		132.23	
2985	Wood frames, exterior, for mahogany, add		335.66	
2990	Wood frames, exterior, for additional 12" of height, add		10.40	
2970	Wood frames, 6'-0" x 7'-0", 5/4" x 6-9/16" D, exterior, pine,	EA	181.55	3.89
2975	Wood frames, exterior, for oak, add		98.78	
2980	Wood frames, exterior, for birch, add		98.78	
2985	Wood frames, exterior, for mahogany, add		250.75	
2990	Wood frames, exterior, for additional 12" of height, add		10.40	
3000	Wood frames, interior frame, pine, 11/16" x 3-5/8" deep	LF	5.34	
3010	4' x 7' Pine Interior Door Frame Custom Made w/Threshold & Trim	LF	6.06	
3020	Wood frames, 11/16 x 4-9/16" deep, interior, pine, custom	LF	6.06	
08254 8500	Interior, pine, custom			
8510	Wood frames, 2'-4" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	89.31	1.90
8565	Wood frames, interior, for oak, add		22.48	
8570	Wood frames, interior, for birch, add		22.48	
8575	Wood frames, interior, for mahogany, add		82.41	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8520	Wood frames, 2'-6" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	90.14	1.90
8565	Wood frames, interior, for oak, add		22.73	
8570	Wood frames, interior, for birch, add		22.73	
8575	Wood frames, interior, for mahogany, add		83.33	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8530	Wood frames, 2'-8" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	91.56	1.90
8565	Wood frames, interior, for oak, add		23.03	
8570	Wood frames, interior, for birch, add		23.03	
8575	Wood frames, interior, for mahogany, add		84.45	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8540	Wood frames, 3'-0" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	93.18	1.93
8565	Wood frames, interior, for oak, add		23.52	
8570	Wood frames, interior, for birch, add		23.52	
8575	Wood frames, interior, for mahogany, add		86.23	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8550	Wood frames, 3'-4" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	98.50	2.00
8565	Wood frames, interior, for oak, add		24.99	
8570	Wood frames, interior, for birch, add		24.99	
8575	Wood frames, interior, for mahogany, add		91.62	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8552	5' x 7' Pine Interior Door Frame Custom Made w/Threshold & Trim	EA	117.21	3.37
8565	Wood frames, interior, for oak, add		29.85	
8570	Wood frames, interior, for birch, add		29.85	
8575	Wood frames, interior, for mahogany, add		109.46	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
8560	Wood frames, 6'-0" x 7'-0", 11/16" x 4-9/16" D, interior,	EA	139.90	3.36
8565	Wood frames, interior, for oak, add		36.46	
8570	Wood frames, interior, for birch, add		36.46	
8575	Wood frames, interior, for mahogany, add		133.69	
8580	Wood frames, interior, for additional 12" of height, add		7.50	
08260 1000	Flush Wood Door, Commercial Solid Core			
1100	Flush Wd Door Com Solid Core, B irch Faced 2'-6"x7'-0"x1 3/4"	EA	152.40	
1200	Flush Wd Door Com Solid Core, B irch Faced, 3'-0"x7'-0"x1 3/4"	EA	165.29	
1300	Flush Wd Door Com Solid Core, B irch Faced, 4'-0"x7'-0"x1 3/4"	EA	190.81	
08261 1000	Vinyl/Acrylic Cladded, Flush Wood Door Solid Cor			
1001	2'-6"x7'-0"x1 3/4" Cladded Door, Not Rated	EA	562.30	
1002	3'-0"x7'-0"x1 3/4" Cladded Door, Non rated	EA	621.97	
1003	4'-0"x7'-0"x1 3/4" Cladded Door, Non rated	EA	681.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08262 0010	Wood door, architectural			
08262 0019	Lauan face			
0020	Wd dr arch, fl, 2'-0" x 6'-8", intr, 1.75", 7 ply hol core,	EA	78.40	9.52
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		14.12	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		65.91	
0102	Wd dr arch, fl, 2'-4" x 7'-0", intr, 1.75", 7 ply hol core,	EA	92.44	9.52
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		17.75	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		82.82	
0104	Wd dr arch, fl, 2'-6" x 7'-0", intr, 1.75", 7 ply hol core,	EA	92.89	9.35
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		17.88	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		83.45	
0106	Wd dr arch, fl, 2'-8" x 7'-0", intr, 1.75", 7 ply hol core,	EA	93.73	9.82
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		18.14	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		84.63	
0108	Wd dr arch, fl, 3'-0" x 7'-0", intr, 1.75", 7 ply hol core,	EA	100.46	9.98
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		20.15	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		94.05	
0110	Wd dr arch, fl, 3'-4" x 7'-0", intr, 1.75", 7 ply hol core,	EA	156.76	14.98
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		36.38	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		169.76	
0112	Wd dr arch, fl, pr 3' x 7'-0", intr, 1.75", 7 ply hol core,	EA	183.60	20.20
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		37.33	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		174.22	
08262 0119	Birch face			
0120	Wd dr arch, fl, 2'-0" x 6'-8", intr, 1.75", 7 ply hol core,	EA	78.40	7.95
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		14.12	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		65.91	
0204	Wd dr arch, fl, 2'-4" x 7'-0", intr, 1.75", 7 ply hol core,	EA	99.29	7.95
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		19.80	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		92.41	
0206	Wd dr arch, fl, 2'-6" x 7'-0", intr, 1.75", 7 ply hol core,	EA	100.00	8.29
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		20.02	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		93.41	
0208	Wd dr arch, fl, 2'-8" x 7'-0", intr, 1.75", 7 ply hol core,	EA	101.72	8.25
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		20.53	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		95.82	
0210	Wd dr arch, fl, 3'-0" x 7'-0", intr, 1.75", 7 ply hol core,	EA	105.14	8.15
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		21.56	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		100.60	
0212	Wd dr arch, fl, 3'-4" x 7'-0", intr, 1.75", 7 ply hol core,	EA	167.78	12.11
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		39.68	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		185.19	
0214	Wd dr arch, fl, pr 3' x 7'-0", intr, 1.75", 7 ply hol core,	EA	202.87	17.47
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		43.11	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		201.19	
0215	3'-10"x7'x1-3/4" Hollow Birch Door	EA	199.69	17.58
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		41.83	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		195.20	
0216	4'x7'x1-3/4" Hollow Birch Door	EA	199.69	17.58
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		41.83	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		195.20	
08262 0409	Hardboard face			
0410	Wd dr arch, fl, 2'-4"x7'-0", intr, 1.75", 7 ply hol core,	EA	91.33	8.69
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		17.42	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		81.27	
0412	Wd dr arch, fl, 2'-6"x7'-0", intr, 1.75", 7 ply hol core,	EA	93.11	9.52
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		17.95	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		83.76	
0414	Wd dr arch, fl, 2'-8"x7'-0", intr, 1.75", 7 ply hol core,	EA	94.90	9.58
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		18.49	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		86.27	
0416	Wd dr arch, fl, 3'-0"x7'-0", intr, 1.75", 7 ply hol core,	EA	97.62	9.58
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		19.30	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		90.08	
0418	Wd dr arch, fl, 3'-4"x7'-0", intr, 1.75", 7 ply hol core,	EA	128.65	12.05
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		27.95	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		130.41	
0420	Wd dr arch, fl, pr 3'x7'-0", intr, 1.75", 7 ply hol core,	EA	187.83	21.10

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0600	Wood door, arch, hollow core fl, for additional 12" of height, add		38.60	
0620	Wood door, arch, hollow core fl, for dutch door with shelf, add		180.14	
08266 0010	Wood doors, decorator Solid Core			
4820	Wd dr, oak, solid, 1 f spcl, 2.25" T, ext, carved, 2 pnl, 3' x7'	EA	1,414.11	17.44
4870	Wood door, solid, carved, for additional 12" of height, add		412.82	
4840	Wd dr, mahogany, solid, 2 f spcl, 2.25" T, ext, carved, 2 pnl, 3' x7'	EA	1,118.72	12.74
4870	Wood door, solid, carved, for additional 12" of height, add		324.21	
4860	Wd dr, birch, solid, 2 f spcl, 2.25" T, ext, carved, 2 pnl, 3' x7'	EA	1,268.37	10.85
4870	Wood door, solid, carved, for additional 12" of height, add		369.10	
08266 4900	Wood			
4910	2'-2"x6'-9"Wd SemiCirc Head Door 1-3/4"Th, Solid Core, Birch Face	EA	1,591.79	11.22
4920	2'-6"x6'-9"Wd SemiCirc Head Door 1-3/4"Th, Solid Core, Birch Face	EA	1,591.79	11.22
4930	2'Or2'-4"x6'-9"Wd SemiCirc Head Door, 1-3/4"Th, Solid Core, Birch	EA	1,591.79	11.22
08266 5000	Solid Core Fir Or Pine Decorator & Panel Doors			
5010	3'x7' x 1 3/8" Sol Fir or Pine, 6 Panel	EA	241.86	18.41
5020	3'x7' x 1 3/4" Sol Fir or Pine, 6 Panel & 6 Panel Decor.	EA	439.91	18.41
08266 6000	Interior Doors, Raised Panels, Both Sides,			
6010	2'-4"x7'-0"x1-3/4" Door	EA	735.41	18.41
6020	2'-8"x7'-0"x1-3/4" Door	EA	753.64	18.41
6030	3'-0"x7'-0"x1-3/4" Door	EA	768.23	18.41
6040	2'-4"x7'-0"x1-3/4" Door, 4 Panel, 4 Light	EA	735.41	18.41
6050	2'-4"x7'-0"x1-3/4" Door, 2 Panel, 4 Light	EA	735.41	18.41
6060	2'-6"x7'-0"x1-3/4" Door, 2 Panel, 2 Light	EA	735.41	18.41
6070	3'-0"x7'-0"x1-3/4" Door, 2 Panel, 4 Light	EA	767.98	18.41
6080	3'-0"x7'-0"x1-3/4" Door, 5 Panel, 2 Light	EA	768.23	18.41
08270 0010	Wood fire doors			
0740	Wd, part core, 1.75"x2'-6"x6'-8", 3 f, "B" lbl, 90 min, birch f, fire d	EA	239.26	18.30
0810	Wood fire dr, partical core, for additional 12" of height, add		60.37	
0790	Wd, part core, 1.75"x3'x7', 3 f ply, "B" lbl, 90 min, birch f, fire	EA	288.06	18.30
0810	Wood fire dr, partical core, for additional 12" of height, add		73.11	
0800	Wd, part core, 1.75"x4'x7', 3 f ply, "B" lbl, 90 min, birch f, fire	EA	367.85	18.30
0810	Wood fire dr, partical core, for additional 12" of height, add		97.04	
08278 0010	Wood doors, residential			
08278 0200	Exterior, combination storm & screen			
08278 0219	Cross buck			
0220	Wood door resi, 6'-9"x2'-6" W ext, comb storm/scr, pine, cross	EA	279.26	9.69
0300	Wood door resi, 7'-1"x3'-0" W ext, comb storm/scr, pine, cross	EA	329.26	9.68
08278 0999	Entrance doors			
08278 0999	Solid core, colonial			
1000	Wood dr, resi, ext, dutch dr, entr dr, colonial,	EA	395.69	11.65
08278 1100	Special Wood Panel Doors To Mch Historic Doors, CustomMde. 6'-8' To 7'-6" In Height.			
1110	3' Wide Pine Panel Door To Match Historic To 2-1/4" Thick	EA	483.45	18.41
1120	Less Than 3' Wide Pine Pnl Door To Match Historic To 2-1/4" Thk	EA	362.63	18.41
1130	Greater Than 3' Wide Pine Pnl Door To Match Historic To 2-1/4"	EA	906.29	18.41
1140	3' Wide Oak Panel Door To Match Historic To 2-1/4" Thick	EA	1,039.19	18.41
1150	Less Than 3' Wide Oak Pnl Door To Match Historic To 2-1/4" Thk	EA	906.29	18.41
1160	Greater Than 3' Wide Oak Pnl Door To Match Historic To 2-1/4"	EA	1,311.02	18.41
08278 1299	Flush, birch			
1300	Wood door resi, 1.75" x 6'-8" x 2'-8" W ext, solid core, flush,	EA	134.73	
1910	Wood door, resi, exterior flush, for additional 12" of height, add		30.44	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		142.03	
1335	Wood door resi, 1.75" x 7'-0" x 2'-4" W ext, solid core, flush,	EA	127.62	9.32
1910	Wood door, resi, exterior flush, for additional 12" of height, add		28.30	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		132.08	
1340	Wood door resi, 1.75" x 7'-0" x 2'-6" W ext, solid core, flush,	EA	135.91	10.32
1910	Wood door, resi, exterior flush, for additional 12" of height, add		30.79	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		143.68	
1351	Wood door resi, 1.75" x 7'-0" x 2'-8" W ext, solid core, flush,	EA	137.26	10.15
1910	Wood door, resi, exterior flush, for additional 12" of height, add		31.19	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		145.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1360	Wood door resi, 1.75" x 7'-0" x 3'-0" W ext, solid core, flush,	EA	151.05	10.82
1910	Wood door, resi, exterior flush, for additional 12" of height, add		34.67	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		161.77	
1370	Wood door resi, 1.75" x 7'-0" x 3'-4" W ext, solid core, flush,	EA	191.32	12.85
1910	Wood door, resi, exterior flush, for additional 12" of height, add		46.75	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		218.15	
1375	Wood door resi, 1.75" x pr 7' x 3'-0" W ext, solid core, flush,	EA	264.31	20.33
1910	Wood door, resi, exterior flush, for additional 12" of height, add		61.55	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		287.21	
1377	3'-10"x7'x1-3/4" Solid Birch Door	EA	324.55	20.46
1910	Wood door, resi, exterior flush, for additional 12" of height, add		77.28	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		360.63	
1379	4'x7'x1-3/4" Solid Birch Door	EA	324.55	20.46
1910	Wood door, resi, exterior flush, for additional 12" of height, add		77.28	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		360.63	
08278 1799 Flush, Iauan				
1800	Wood door resi, 1.75" x 7'-0" x 2'-4" W ext, solid core, flush,	EA	115.03	9.55
1910	Wood door, resi, exterior flush, for additional 12" of height, add		24.53	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		114.45	
1810	Wood door resi, 1.75" x 7'-0" x 2'-6" W ext, solid core, flush,	EA	119.33	9.88
1910	Wood door, resi, exterior flush, for additional 12" of height, add		25.15	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		117.36	
1820	Wood door resi, 1.75" x 7'-0" x 2'-8" W ext, solid core, flush,	EA	148.09	11.81
1910	Wood door, resi, exterior flush, for additional 12" of height, add		26.68	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		124.50	
1830	Wood door resi, 1.75" x 7'-0" x 3'-0" W ext, solid core, flush,	EA	125.22	10.12
1910	Wood door, resi, exterior flush, for additional 12" of height, add		27.58	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		128.72	
1840	Wood door resi, 1.75" x 7'-0" x 3'-4" W ext, solid core, flush,	EA	173.41	13.45
1910	Wood door, resi, exterior flush, for additional 12" of height, add		42.04	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		196.18	
1850	Wood door resi, 1.75" x pr of 7' x 3' W ext, solid core, flush,	EA	226.47	22.10
1910	Wood door, resi, exterior flush, for additional 12" of height, add		57.29	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		267.36	
08278 1859 Flush, hardboard				
1860	Wood door resi, 1.75" x 7'-0" x 2'-4" W ext, solid core, flush,	EA	120.22	8.69
1910	Wood door, resi, exterior flush, for additional 12" of height, add		26.08	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		121.72	
1870	Wood door resi, 1.75" x 7'-0" x 2'-8" W ext, solid core, flush,	EA	121.04	9.15
1910	Wood door, resi, exterior flush, for additional 12" of height, add		26.33	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		122.86	
1880	Wood door resi, 1.75" x 7'-0" x 3'-0" W ext, solid core, flush,	EA	124.35	9.19
1910	Wood door, resi, exterior flush, for additional 12" of height, add		27.32	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		127.50	
1890	Wood door resi, 1.75" x 7'-0" x 3'-4" W ext, solid core, flush,	EA	167.22	11.65
1910	Wood door, resi, exterior flush, for additional 12" of height, add		39.52	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		184.41	
1900	Wood door resi, 1.75" x pr of 7' x 3' W ext, solid core, flush,	EA	240.89	18.24
1910	Wood door, resi, exterior flush, for additional 12" of height, add		54.52	
1920	Wood door, resi, exterior flush, for fixed wood louvers, add		80.00	
1930	Wood door, resi, exterior flush, for dutch door with shelf, add		254.42	

08278 2700 Interior closet Hardboard Faced Bi-Fold Or Bi-Pass

Note: Includes Frame And Trim

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08278 2700 Bi-fold closet Includes Frame, Trim And Hardware				
2710	Wd dr resi, birch,unfin 7'x4' W, w/hdw, no fr/trim intr clo,	EA	146.78	9.15
2715	Wd dr resi, birch,unfin 7'x6' W, w/hdw, no fr/trim intr clo,	EA	172.55	11.68
2920	Wd dr resi, hdbrd primed,7'x4' W, w/hdw, no fr/trim intr clo,	EA	124.42	9.15
2930	Wd dr resi, hdbrd primed,7'x6' W, w/hdw, no fr/trim intr clo,	EA	144.07	11.68
3000	Wd dr,rsd pnl pine6'-6"/8"x2'-6"W,w/hdw,no	EA	197.91	11.68
3100	Wd dr resi, rsd pnl pine, 7'x3' W, w/hdw,no fr/trim intr	EA	213.45	7.22
3140	Wood door, resi, int 3' paneled pine bi-fold, for oak or ash, add		211.35	
3145	Wood door, resi, int 3' paneled pine bi-fold, for teak, add		507.24	
3150	Wood door, resi, int 3' paneled pine bi-fold, for walnut, add		338.16	
3120	Wd dr resi, rsd pnl pine, 7'x6' W, w/hdw,no fr/trim intr	EA	391.94	16.84
3140	Wood door, resi, int 3' paneled pine bi-fold, for oak or ash, add		423.36	
3145	Wood door, resi, int 3' paneled pine bi-fold, for teak, add		1,016.07	
3150	Wood door, resi, int 3' paneled pine bi-fold, for walnut, add		677.38	
3180	Wd dr, lvr pine, 6'-6"/8"x1'-6"W, w/hdw, no fr/trim intr clo,	EA	126.04	9.92
3140	Wood door, resi, int 3' paneled pine bi-fold, for oak or ash, add		106.35	
3145	Wood door, resi, int 3' paneled pine bi-fold, for teak, add		255.24	
3150	Wood door, resi, int 3' paneled pine bi-fold, for walnut, add		170.16	
3300	Wd dr resi, lvr pine, 7'x3'-0"W, w/hdw, no fr/trim intr clo,	EA	136.39	9.92
3140	Wood door, resi, int 3' paneled pine bi-fold, for oak or ash, add		115.03	
3145	Wood door, resi, int 3' paneled pine bi-fold, for teak, add		276.06	
3150	Wood door, resi, int 3' paneled pine bi-fold, for walnut, add		184.04	
3320	Wd dr resi, lvr pine, 7'x6'-0"W, w/hdw, no fr/trim intr clo,	EA	233.65	12.55
3140	Wood door, resi, int 3' paneled pine bi-fold, for oak or ash, add		225.50	
3145	Wood door, resi, int 3' paneled pine bi-fold, for teak, add		541.20	
3150	Wood door, resi, int 3' paneled pine bi-fold, for walnut, add		360.80	
08278 3350 Bi-Folding Door -6'-8" to 7' High Incl. Frame, Trim & Hardware, Pine				
3360	6'-8" to 7' High x 2' Louvered Door, 1-3/8" Thick with Hardware	EA	126.50	28.15
3370	6'-8"to7' High x 2'-6"to2'-8" Louvered Dr, 1-3/8" Thk W Hdw	EA	129.25	28.15
3380	6'-8" to 7' High x 3' Louvered Door 1-3/8" Thick with Hardware	EA	143.21	28.15
3390	6'-8" to 7' High x 4' Louvered Door 1-3/8" Thick with Hardware	EA	162.44	28.15
08278 3400 Mrrored Face (incl Hardware)				
3400	6'-8" to 7' High x 5' Louvered Door 1-3/8" Thick W Hardware	EA	183.27	36.83
3410	6' x 6'-8" High Bi-Pass with Mirrored Face	EA	628.04	36.83
3411	6'-8"to7' High x 5'-4" Louvered Door 1-3/8" Thick with Hardware	EA	193.47	36.83
3420	6'-8" to 7' High x 6' Louvered Door 1-3/8" Thick with Hardware	EA	207.22	36.83
08278 4400 Bi-passing closet				
4600	Wd dr resi, 6'-8"x4' W 1-3/8", w/hdw/fr, no trim fl, birch, clo,	EA	232.23	12.75
4640	Wd dr resi, fl, birch, 6'-8"x6' W 1-3/8", w/hdw/fr, no trim clo,	EA	268.38	14.84
4700	Wd dr resi, birch, primed, 6'-8"x4' W 1-3/8", w/hdw/fr, no	EA	202.64	10.95
4720	Wd dr resi, birch, primed, 6'-8"x6' W 1-3/8", w/hdw/fr, no	EA	236.22	12.68
4800	Wd dr resi, lvr, pine, 6'-8"x4' W, 1-3/8", w/hdw/fr, no trim clo,	EA	367.39	14.31
4840	Wd dr resi, lvr, pine, 6'-8"x6' W, 1-3/8", w/hdw/fr, no trim clo,	EA	442.69	17.21
5000	Wd dr resi, pnl, pine, 6'-8"x4' W, 1-3/8", w/hdw/fr, no trim clo,	EA	349.04	10.68
5040	Wd dr resi, pnl, pine, 6'-8"x6' W, 1-3/8", w/hdw/fr, no trim clo,	EA	428.10	12.61
08278 5499 Closet door, hollow core				
5500	Wood door, 2'-0" x 6'-8", intr closet, hollow core, lauan	EA	74.39	10.68
5510	Wood door, 2'-6" x 6'-8", intr closet, hollow core, lauan	EA	79.59	10.68
08278 6100 Folding accordian, closet Includes Tracks And Fittings Complete				
6121	Wd dr, vinyl, 2 layer, stk, w/track & fr, intr closet,	SF	4.76	0.70
6220	Door, resi, folding accordian, for custom partition, add		0.99	
6230	Door, resi, folding accordian, for fire retardant, add		0.65	
6140	Wd dr, woven mahogany&vinyl, stk, w/track & fr, intr clo folding	SF	2.62	0.47
6220	Door, resi, folding accordian, for custom partition, add		0.46	
6230	Door, resi, folding accordian, for fire retardant, add		0.33	
6180	Wd dr, econ vinyl, stock, w/track & fr, intr closet folding	SF	2.84	0.53
6220	Door, resi, folding accordian, for custom partition, add		0.51	
6230	Door, resi, folding accordian, for fire retardant, add		0.36	
6200	Wd dr, rigid PVC, w/track & fr, intr closet, folding accordian	SF	5.74	1.00
6220	Door, resi, folding accordian, for custom partition, add		1.24	
6230	Door, resi, folding accordian, for fire retardant, add		0.79	
08278 7310 Passage doors, flush				
08278 7319 Hardboard, hollow core				
7320	Wd dr resi, pass, 1-3/8" x 6'-8" x 1'-6"W, fl, no fr, hdbrd hol	EA	69.60	9.88
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-6.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9300	Wood door, resi, interior passage, for additional 12" of height, add		12.01	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		56.03	
7370	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4"W fl, no fr, hdbrd hol	EA	81.78	9.88
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-7.28	
9300	Wood door, resi, interior passage, for additional 12" of height, add		14.55	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		67.90	
7375	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-6"W fl, no fr, hdbrd hol	EA	82.44	9.65
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-7.37	
9300	Wood door, resi, interior passage, for additional 12" of height, add		14.75	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		68.82	
7380	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8"W fl, no fr, hdbrd hol	EA	84.60	9.78
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-7.70	
9300	Wood door, resi, interior passage, for additional 12" of height, add		15.40	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		71.85	
7385	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0"W fl, no fr, hdbrd hol	EA	85.63	9.65
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-7.85	
9300	Wood door, resi, interior passage, for additional 12" of height, add		15.71	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		73.29	
7390	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-4"W fl, no fr, hdbrd hol	EA	114.23	12.38
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-11.81	
9300	Wood door, resi, interior passage, for additional 12" of height, add		23.62	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		110.22	
7395	Wd dr resi, pass, 1-3/8" x pr 7'-0" x3'W fl, no fr, hdbrd hol	EA	162.00	19.13
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-15.43	
9300	Wood door, resi, interior passage, for additional 12" of height, add		30.85	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		143.98	
08278 7419 Lauan, hollow core				
7420	Wd dr resi, pass, 1-3/8" x 6'-8" x 1'-6" W fl, no fr, lauan, ho	EA	67.92	10.35
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-5.75	
9300	Wood door, resi, interior passage, for additional 12" of height, add		11.50	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		53.68	
7520	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4" W fl, no fr, lauan, ho	EA	92.71	10.35
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-8.91	
9300	Wood door, resi, interior passage, for additional 12" of height, add		17.83	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		83.20	
7540	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-6" W fl, no fr, lauan, ho	EA	93.15	10.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-8.98	
9300	Wood door, resi, interior passage, for additional 12" of height, add		17.96	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		83.82	
7560	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8" W fl, no fr, lauan, ho	EA	94.37	9.92
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-9.16	
9300	Wood door, resi, interior passage, for additional 12" of height, add		18.33	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		85.53	
7580	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0" W fl, no fr, lauan, ho	EA	97.02	10.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-9.56	
9300	Wood door, resi, interior passage, for additional 12" of height, add		19.12	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		89.24	
7590	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-4" W fl, no fr, lauan, ho	EA	151.43	15.21
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-17.39	
9300	Wood door, resi, interior passage, for additional 12" of height, add		34.78	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		162.30	
7595	Wd dr resi, pass, 1-3/8" pr 7'-0" x 3'-0"W fl, no fr,	EA	186.64	20.07
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-19.12	
9300	Wood door, resi, interior passage, for additional 12" of height, add		38.24	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		178.47	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08278 7699 Birch, hollow core				
7700	Wd dr resi, pass, 1-3/8" x 6'-8" x 1'-6" W fl, no fr, birch, ho	EA	72.52	10.35
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-6.44	
9300	Wood door, resi, interior passage, for additional 12" of height, add		12.88	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		60.12	
7900	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4" W fl, no fr, birch, ho	EA	100.68	10.35
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-10.11	
9300	Wood door, resi, interior passage, for additional 12" of height, add		20.22	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		94.36	
7910	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8" W fl, no fr, birch, ho	EA	105.35	10.18
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-10.81	
9300	Wood door, resi, interior passage, for additional 12" of height, add		21.62	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		100.90	
7920	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0" W fl, no fr, birch, ho	EA	108.39	10.38
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-11.27	
9300	Wood door, resi, interior passage, for additional 12" of height, add		22.53	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		105.15	
7930	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-4" W fl, no fr, birch, ho	EA	166.10	15.34
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-19.59	
9300	Wood door, resi, interior passage, for additional 12" of height, add		39.18	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		182.84	
7940	Wd dr resi, pass, 1-3/8" pr 7'-0" x 3'-0" W fl, no fr,	EA	185.85	18.44
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-19.00	
9300	Wood door, resi, interior passage, for additional 12" of height, add		38.01	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		177.37	
08278 8999 Birch, solid core				
9000	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4" W fl, no fr, birch, so	EA	117.75	9.75
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-12.67	
9300	Wood door, resi, interior passage, for additional 12" of height, add		25.34	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		118.26	
9020	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8" W fl, no fr, birch, so	EA	121.34	9.42
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-13.21	
9300	Wood door, resi, interior passage, for additional 12" of height, add		26.42	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		123.28	
9040	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0" W fl, no fr, birch, so	EA	126.14	9.45
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-13.93	
9300	Wood door, resi, interior passage, for additional 12" of height, add		27.86	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		130.00	
9060	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-4" W fl, no fr, birch, so	EA	187.04	13.25
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-22.73	
9300	Wood door, resi, interior passage, for additional 12" of height, add		45.46	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		212.16	
9080	Wd dr resi, pass, 1-3/8" x pr of 7' x 3' W fl, no fr, birch, so	EA	244.64	17.07
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-27.82	
9300	Wood door, resi, interior passage, for additional 12" of height, add		55.64	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		259.67	
9082	4'x7'x1-3/8"Solid Birch Door (Solid Core w/Birch Facing)	EA	152.10	37.16
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-13.52	
9300	Wood door, resi, interior passage, for additional 12" of height, add		27.05	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		126.21	
9084	5'x7'x1-3/8"Solid Birch Door (Solid Core w/Birch Facing)	EA	160.67	37.16
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-14.71	
9300	Wood door, resi, interior passage, for additional 12" of height, add		29.42	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		137.30	
08278 9099 Lauan, solid core				
9100	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4" W fl, no fr, lauan, so	EA	110.37	10.98

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-11.56	
9300	Wood door, resi, interior passage, for additional 12" of height, add		23.13	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		107.93	
9120	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8" W fl, no fr, lauan, so	EA	114.78	10.78
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-12.23	
9300	Wood door, resi, interior passage, for additional 12" of height, add		24.45	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		114.10	
9140	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0" W fl, no fr, lauan, so	EA	117.55	10.75
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-12.64	
9300	Wood door, resi, interior passage, for additional 12" of height, add		25.28	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		117.98	
9160	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-4" W fl, no fr, lauan, so	EA	171.24	14.91
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-20.36	
9300	Wood door, resi, interior passage, for additional 12" of height, add		40.72	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		190.04	
9180	Wd dr resi, pass, 1-3/8" x pr of 7' x 3' W fl, no fr, lauan, so	EA	227.78	19.50
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-25.29	
9300	Wood door, resi, interior passage, for additional 12" of height, add		50.59	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		236.07	
08278 9200	Oak Faced			
9200	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-4" W fl, no fr, hdbrd, sol	EA	100.68	9.72
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-10.11	
9300	Wood door, resi, interior passage, for additional 12" of height, add		20.22	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		94.36	
9202	2'-4"x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	161.68	12.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-15.16	
9300	Wood door, resi, interior passage, for additional 12" of height, add		30.32	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		141.50	
9204	2'-8"x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	154.95	12.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-14.15	
9300	Wood door, resi, interior passage, for additional 12" of height, add		28.30	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		132.08	
9206	3'x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	160.40	12.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-14.97	
9300	Wood door, resi, interior passage, for additional 12" of height, add		29.94	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		139.71	
9208	3'-4"x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	172.54	12.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-16.80	
9300	Wood door, resi, interior passage, for additional 12" of height, add		33.61	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		156.83	
9210	Pair 3'x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	295.02	24.11
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-29.94	
9300	Wood door, resi, interior passage, for additional 12" of height, add		59.87	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		279.41	
9212	2'-6"x7'x1-3/4" Solid Oak Door (Solid Core w/Oak Facing)	EA	155.52	12.05
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-14.24	
9300	Wood door, resi, interior passage, for additional 12" of height, add		28.47	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		132.87	
9220	Wd dr resi, pass, 1-3/8" x 7'-0" x 2'-8" W fl, no fr, hdbrd, sol	EA	108.38	9.85
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-11.27	
9300	Wood door, resi, interior passage, for additional 12" of height, add		22.53	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		105.14	
9240	Wd dr resi, pass, 1-3/8" x 7'-0" x 3'-0" W fl, no fr, hdbrd, sol	EA	112.20	10.12
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-11.84	
9300	Wood door, resi, interior passage, for additional 12" of height, add		23.68	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9320	Wood door, resi, interior passage, for dutch door with shelf, add		110.49	
9260	Wl dr resi, pass, 1-3/8" x 7'-0" x 3'-4"W fl, no fr, hdbrd, sol	EA	155.36	13.31
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-17.98	
9300	Wood door, resi, interior passage, for additional 12" of height, add		35.96	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		167.80	
9280	Wl dr resi, pass, 1-3/8" x pr of 7' x 3' W fl, no fr, hdbrd, sol	PR	217.79	20.43
8550	Wood door, resi, interior passage, for over 20 doors, deduct		-23.79	
9300	Wood door, resi, interior passage, for additional 12" of height, add		47.59	
9310	Wood door, resi, interior passage, for fixed wood louvers, add		80.00	
9320	Wood door, resi, interior passage, for dutch door with shelf, add		222.08	
08278 9300 Pocket Door, 1-3/8" Thick				
Note: Includes Door, Frame, And Trim All Munting Hardware And Door Hardware				
9310	3'x6'-8" Or 7' High Wood Pocket Door, Hollow Core, Birch faced	EA	273.30	18.41
08278 9400 Wood Doors Accessories				
9410	For Fixed Metal Louvers, Add	SF	25.68	
9420	For FM Label Only, Add Factory Applied	EA	11.01	
9430	For 8"x8" Vision Glass, Add	EA	44.46	
9440	For 8"x48" Vision Glass, Add	EA	59.73	
9450	For Light Panel, Add	EA	72.13	
9460	For Laminated Lead, 1/16" In Door	SF	31.18	
08278 9500 Door Light With Wood Frame				
9510	18"x24" Door Light, Oak/Birch Frame, 1/4" Wire Reinforced Glass	EA	178.38	
9520	10"x10" Door Light, Primed Metal Frame, 1/4" Wire Reinforced Glass	EA	72.67	
9530	10"x10" Door Light, Oak/Birch Frame, 1/4" Wire Reinforced Glass	EA	66.58	
08278 9900 Removal & Reinstallation Of Wood Doors				
Note: Includes Storage, Cleaning And M.sc. Supply Materials				
9910	Rem & Reinstall Wood Door	EA	97.36	
9920	Rem & Reinstall Wood Door Frame	EA	72.86	
9930	Trim Bottom Of Existing Wood Door, Incl. Removal From Frame	EA	13.36	
08279 Remove & Reinstall Wood/Metal Doors				
08280 Remove & Reinstall and Cutoff Wood\Metal Doors				
08280 1000 Remove & Reinstall and Cutoff Wood\Metal Doors N				
1001	Remove & Reinstall Door	EA	25.00	
1002	Remove & Reinstall Hollow Metal Frame	EA	50.74	
1003	Cut or Trim Existing Door (does not include Remove & Reinstall)	EA	8.90	
08300 Special Doors				
08305 Access Doors				
08305 1000 Access Doors, Stainless Steel, Fire Rated WLock				
1001	12"x12" Access Doors Stainless Steel With Lock	EA	189.76	18.34
1002	12"x18" Access Doors Stainless Steel With Lock	EA	223.35	19.55
1003	18"x18" Access Doors Stainless Steel With Lock	EA	256.87	20.67
1004	24"x18" Access Doors Stainless Steel With Lock	EA	281.97	21.72
1005	24"x24" Access Doors Stainless Steel With Lock	EA	305.51	21.83
1006	24"x36" Access Doors Stainless Steel With Lock	EA	391.43	22.51
08305 2000 Access Doors, Steel, Fire Rated, With Lock				
2001	12"x12" Access Doors With Lock	EA	130.49	18.45
2002	12"x18" Access Doors With Lock	EA	146.38	19.55
2003	18"x18" Access Doors With Lock	EA	162.36	20.67
2004	24"x18" Access Doors With Lock	EA	181.78	21.83
2005	24"x24" Access Doors With Lock	EA	199.32	21.83
2006	24"x36" Access Doors With Lock	EA	309.23	22.51
2007	24"x48" Access Doors With Lock	EA	375.69	23.45
2008	36"x36" Access Doors With Lock	EA	463.76	23.45
2009	48"x48" Access Doors With Lock	EA	531.84	28.14
08305 3000 Access Doors, Stainless Steel, WLock				
3001	12"x12" Access Doors Stainless Steel With Lock	EA	105.97	18.34
3002	12"x18" Access Doors Stainless Steel With Lock	EA	152.71	19.55
3003	18"x18" Access Doors Stainless Steel With Lock	EA	199.39	20.67
3004	24"x18" Access Doors Stainless Steel With Lock	EA	219.13	21.72
3005	24"x24" Access Doors Stainless Steel With Lock	EA	237.32	21.83

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3006	8"x8" Access Doors Stainless Steel With Lock	EA	101.40	14.07
08305 4000	Access Doors, Steel, With Lock			
4001	12"x12" Access Doors With Lock	EA	49.63	18.45
4002	12"x18" Access Doors With Lock	EA	55.77	19.55
4003	18"x18" Access Doors With Lock	EA	62.01	20.67
4004	24"x18" Access Doors With Lock	EA	70.23	21.83
4005	24"x24" Access Doors With Lock	EA	76.56	21.83
4006	24"x36" Access Doors With Lock	EA	119.59	22.51
4007	36"x36" Access Doors With Lock	EA	170.20	23.45
4008	8"x8" Access Doors With Lock	EA	45.87	14.14
08305 6999	Ceiling hatches			
7000	Ceiling hatches, stl fr & cover, 2'-6" x 2'-6", swing up, 1 leaf	EA	547.23	23.10
7020	Ceiling hatches, stl fr & cover, 2'-6" x 3'-0", swing up, 1 leaf	EA	540.50	22.18
7040	Ceiling hatches, stl fr & al cvr, 2'-6" x 3'-0", swing up, 1	EA	584.22	23.13
7060	Ceiling hatches, stl fr & cover, 2'-6" x 2'-6", swing down model	EA	689.23	21.98
7080	Ceiling hatches, stl fr & cover, 2'-6" x 3'-0", swing down model	EA	718.75	22.02
7100	Ceiling hatches, aluminum cover, 2'-6" x 3'-0", swing down model	EA	709.03	21.13
08310	Sliding Doors			
Note: Prices Include Stock Frames, Trim And Usual Hardware				
08312 0011	Glass, sliding			
08312 0350	Aluminum sliding			
0400	Glass sliding, 6' W premium 5/8" tempered insul glass, al	SF	37.64	3.82
2610	Doors, al glass, sliding, for anodized or colored frames, add		6.89	
0450	Glass sliding, 6' W economy, 5/8" tempered insul glass, al	SF	31.60	3.06
2610	Doors, al glass, sliding, for anodized or colored frames, add		5.68	
0600	Glass sliding, 12' W premium 5/8" tempered insul glass, al	SF	28.98	2.23
2610	Doors, al glass, sliding, for anodized or colored frames, add		5.28	
0650	Glass sliding, 12' W economy, 5/8" tempered insul glass, al	SF	25.17	1.97
2610	Doors, al glass, sliding, for anodized or colored frames, add		4.52	
2000	Glass sliding, 6' W premium 1" tempered insul glass, al slidin	SF	39.10	2.69
2610	Doors, al glass, sliding, for anodized or colored frames, add		7.18	
2020	Glass sliding, 6' W economy, 1" tempered insul glass, al slidin	SF	31.04	2.66
2610	Doors, al glass, sliding, for anodized or colored frames, add		5.57	
2040	Glass sliding, 12' W premium 1" tempered insul glass, al slidin	SF	30.13	2.03
2610	Doors, al glass, sliding, for anodized or colored frames, add		5.51	
2060	Glass sliding, 12' W economy, 1" tempered insul glass, al slidin	SF	25.65	1.73
2610	Doors, al glass, sliding, for anodized or colored frames, add		4.62	
2500	Glass sliding, 6' W premium 1/4" tempered glass, al sliding	SF	33.50	3.95
2610	Doors, al glass, sliding, for anodized or colored frames, add		6.06	
2520	Glass sliding, 6' W economy, 1/4" tempered glass, al sliding	SF	27.46	3.02
2610	Doors, al glass, sliding, for anodized or colored frames, add		4.85	
2540	Glass sliding, 12' W premium 1/4" tempered glass, al sliding	SF	26.17	2.37
2610	Doors, al glass, sliding, for anodized or colored frames, add		4.72	
2560	Glass sliding, 12' W economy, 1/4" tempered glass, al sliding	SF	21.89	2.00
2610	Doors, al glass, sliding, for anodized or colored frames, add		3.87	
08316	Special Metal Doors			
08316 0010	Metal, sliding fire doors			
Note: With Fusible Link, 3 Hour Rating. Electrical Hook-Up Of Mtor Not Included.				
0020	Metal, 3 hour rating, 3'-0" x 6'-8", motor operated, sliding	EA	5,384.98	599.96
0040	Metal, 3 hour rating, 3'-8" x 6'-8", motor operated, sliding	EA	5,469.05	555.73
0060	Metal, 3 hour rating, 4'-0" x 8'-0", motor operated, sliding	EA	5,609.18	494.54
0080	Metal, 3 hour rating, 5'-0" x 8'-0", motor operated, sliding	EA	5,744.83	444.75
08316 1000	Basement Doors			
1001	4' x5' Double, Basement Door, Ext. Angled, Metal, Factory Primed	EA	708.46	75.33
08317	Security Doors			
08319 0010	Vault front And Ventilator All Doors Are 6 Ft 6 In Tall			
08319 0010	Door and frame vault front			
0100	Vault front, door & fr, weighs 750 lb, 1 hour test, 78" x 32"	EA	3,281.63	326.13
0150	Vault front, door & fr, weighs 995 lb, 1 hour test, 78" X 40"	EA	3,724.20	299.05
0200	Vault front, door & fr, weighs 950 lb, 2 hour test, 78" X 32"	EA	3,346.85	290.05
0250	Vault front, door & fr, weighs 1130 lb, 2 hour test, 78" X 40"	EA	3,862.16	291.05
0300	Vault front, door & fr, weighs 1025 lb, 4 hour test, 78" X 32"	EA	3,501.35	284.49

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0350	Vault front, door & fr, weighs 1140 lb, 4 hour test, 78" X 40"	EA	4,090.50	337.39
0400	Vault front, door & fr, weighs 875 lb, 6 hour test, 78" X 32"	EA	4,031.43	290.69
0420	Vault front, door & fr, weighs 1075 lb, 6 hour test, 78" X 40"	EA	4,523.87	338.87
08319 2049 Security vault door				
Note: Complete With Door, Frame, Combination Locking Device, Anchors, Trim Caulking.				
2050	Vault front, security vault dr, class I, 3' W 3-1/2" thick	EA	20,924.50	1,172.66
2100	Vault front, security vault dr, class II, 3' W 7" thick	EA	23,464.78	2,492.10
2150	Vault front, security vault dr, class III, 9R, 3' W 7" thk, min	EA	35,300.87	4,033.46
2160	Vault front, security vault dr, 78" X 40" door, class V, type 1	EA	5,921.63	266.26
2170	Vault front, security vault dr, 78"X 40" door, class V, type 2	EA	5,944.05	327.67
2180	Vault front, security vault door, day gate for class V vault	EA	1,332.14	109.40
08320 1000 Metal Clad Doors (Includes Electric Mtor)				
1001	Metal Clad Doors-Light Duty (Includes Electric Mtor)	SF	34.68	4.11
1002	Ml Clad Doors-4' W Louvered Pine (Includes Electric Mtor)	SF	49.11	4.26
1003	Metal Clad Doors-Heavy Duty (Includes Electric Mtor)	SF	54.05	4.29
08325 Cold Storage Doors				
08326 0010 Cold storage				
08326 0299 HORIZONTAL SLIDING				
0300	Cold storage, sgl, 5' x 7' mml opr, 2" thk, 20 ga galv stl,	EA	2,526.26	
2300	Cold storage doors, galv steel, for stainless steel face, add		452.00	
0400	Cold storage, sgl, 5' x 7' mml opr, 4" thk, 20 ga galv stl,	EA	3,164.13	
2300	Cold storage doors, galv steel, for stainless steel face, add		579.58	
0600	Cold storage, sgl, 6' x 9' mml opr, 4" thk, 20 ga galv stl,	EA	3,547.77	
2300	Cold storage doors, galv steel, for stainless steel face, add		627.63	
0650	Cold storage, sgl, 7' x 9' mml opr, 4" thk, 20 ga galv stl,	EA	3,862.35	
2300	Cold storage doors, galv steel, for stainless steel face, add		665.97	
2400	Cold storage, sgl, 7' x 9', 4" thk, 20 ga galv steel,	EA	4,837.40	
2300	Cold storage doors, galv steel, for stainless steel face, add		849.15	
08326 2499 Vertical sliding				
2500	Cold storage, sgl, 7' x 8', 4" thk, 20 ga galv steel, vertical	EA	4,619.05	
2300	Cold storage doors, galv steel, for stainless steel face, add		817.31	
2520	Cold storage, sgl, 7' x 9', 4" thk, 20 ga galv steel, vertical	EA	5,553.07	
2300	Cold storage doors, galv steel, for stainless steel face, add		1,004.12	
08326 3000 Hinged, lightweight				
3001	Cold storage, sgl, 3' x 7'-0", 2"thk, 20 ga galv steel, hinged,	EA	1,372.71	
2300	Cold storage doors, galv steel, for stainless steel face, add		221.29	
3051	Cold storage, sgl, 3' x 7'-0", 4"thk, 20 ga galv steel, hinged,	EA	1,551.51	
2300	Cold storage doors, galv steel, for stainless steel face, add		254.25	
08332 0011 Counter doors				
08332 0019 Galvanized Steel				
0020	Counter doors, manual, 4' H x 6' L, incl fr & hardware, galv	OPN	1,001.77	48.16
08332 1999 Aluminum Manual				
Note: Aluminum Frame And Hardware Included				
2000	Counter doors, manual, 4' H x 4' L, incl fr & hardware, aluminum	EA	858.47	48.16
2200	Counter doors, manual, for galvanized steel doors, add		123.29	
2210	Counter doors, manual, for stainless steel, add		770.54	
2220	Counter doors, manual, for motor operator, add		492.01	
2020	Counter doors, manual, 4' H x 6' L, incl fr & hardware, aluminum	EA	1,025.93	49.69
2200	Counter doors, manual, for galvanized steel doors, add		151.94	
2210	Counter doors, manual, for stainless steel, add		949.61	
2220	Counter doors, manual, for motor operator, add		598.34	
2040	Counter doors, manual, 4' H x 8' L, incl fr & hardware, aluminum	EA	1,185.40	52.12
2200	Counter doors, manual, for galvanized steel doors, add		181.03	
2210	Counter doors, manual, for stainless steel, add		1,131.44	
2220	Counter doors, manual, for motor operator, add		703.67	
2060	Counter doors, manual, 4' H x 10' L, incl fr & hardware,	EA	1,346.46	70.42
2200	Counter doors, manual, for galvanized steel doors, add		210.13	
2210	Counter doors, manual, for stainless steel, add		1,313.30	
2220	Counter doors, manual, for motor operator, add		809.40	
2080	Counter doors, manual, 4' H x 14' L, incl fr & hardware,	EA	1,767.16	59.37
2200	Counter doors, manual, for galvanized steel doors, add		277.36	
2210	Counter doors, manual, for stainless steel, add		1,733.53	
2220	Counter doors, manual, for motor operator, add		1,065.86	
2100	Counter doors, manual, 6' H x 4' L, incl fr & hardware, aluminum	EA	1,059.51	52.65

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2200	Counter doors, manual, for galvanized steel doors, add		158.65	
2210	Counter doors, manual, for stainless steel, add		991.59	
2220	Counter doors, manual, for motor operator, add		621.85	
2120	Counter doors, manual, 6' H x 6' L, incl fr & hardware, aluminum	EA	1,315.25	57.01
2200	Counter doors, manual, for galvanized steel doors, add		196.49	
2210	Counter doors, manual, for stainless steel, add		1,228.06	
2220	Counter doors, manual, for motor operator, add		770.92	
2140	Counter doors, manual, 6' H x 10' L, incl fr & hardware,	EA	1,758.99	67.49
2200	Counter doors, manual, for galvanized steel doors, add		275.73	
2210	Counter doors, manual, for stainless steel, add		1,723.31	
2220	Counter doors, manual, for motor operator, add		1,060.14	

08340 Coiling Grilles

08342 0010 Coiling grille Or Aluminum

Note: With Frame And Factory Finish

08342 0010 Top coiling

0020	Top coiling grille, 4' H x 4' L, al, manual, w/ fr, mill finish	EA	857.58	49.72
0150	Top coiling grille, manual for stainless steel, add		847.79	
0520	Side coiling grille, manual moderately ornamental types, add		237.38	
0530	Side coiling grille, manual highly ornamental types, add		678.23	
0030	Top coiling grille, 4' H x 6' L, al, manual, w/ fr, mill finish	EA	964.08	41.07
0150	Top coiling grille, manual for stainless steel, add		980.91	
0520	Side coiling grille, manual moderately ornamental types, add		274.66	
0530	Side coiling grille, manual highly ornamental types, add		784.73	
0040	Top coiling grille, 4' H x 8' L, al, manual, w/ fr, mill finish	EA	1,270.49	55.53
0150	Top coiling grille, manual for stainless steel, add		1,289.20	
0520	Side coiling grille, manual moderately ornamental types, add		360.98	
0530	Side coiling grille, manual highly ornamental types, add		1,031.36	
0050	Top coiling grille, 4' H x 12' L, al, manual, w/ fr, mill finish	EA	1,702.09	53.48
0150	Top coiling grille, manual for stainless steel, add		1,828.70	
0520	Side coiling grille, manual moderately ornamental types, add		512.04	
0530	Side coiling grille, manual highly ornamental types, add		1,462.96	
0060	Top coiling grille, 4' H x 16' L, al, manual, w/ fr, mill finish	EA	2,333.98	78.81
0150	Top coiling grille, manual for stainless steel, add		2,469.10	
0520	Side coiling grille, manual moderately ornamental types, add		691.35	
0530	Side coiling grille, manual highly ornamental types, add		1,975.28	
0070	Top coiling grille, 6' H x 4' L, al, manual, w/ fr, mill finish	EA	1,000.51	75.04
0150	Top coiling grille, manual for stainless steel, add		1,026.45	
0520	Side coiling grille, manual moderately ornamental types, add		287.41	
0530	Side coiling grille, manual highly ornamental types, add		821.16	
0080	Top coiling grille, 6' H x 6' L, al, manual, w/ fr, mill finish	EA	1,046.13	34.11
0150	Top coiling grille, manual for stainless steel, add		1,083.48	
0520	Side coiling grille, manual moderately ornamental types, add		303.37	
0530	Side coiling grille, manual highly ornamental types, add		866.78	
0090	Top coiling grille, 6' H x 8' L, al, manual, w/ fr, mill finish	EA	1,240.50	41.39
0150	Top coiling grille, manual for stainless steel, add		1,251.71	
0520	Side coiling grille, manual moderately ornamental types, add		350.48	
0530	Side coiling grille, manual highly ornamental types, add		1,001.37	
0100	Top coiling grille, 6' H x 12' L, al, manual, w/ fr, mill finish	EA	1,610.43	65.28
0150	Top coiling grille, manual for stainless steel, add		1,564.66	
0520	Side coiling grille, manual moderately ornamental types, add		438.11	
0530	Side coiling grille, manual highly ornamental types, add		1,251.73	
0110	Top coiling grille, 6' H x 16' L, al, manual, w/ fr, mill finish	EA	2,080.14	9.36
0150	Top coiling grille, manual for stainless steel, add		2,002.34	
0520	Side coiling grille, manual moderately ornamental types, add		560.65	
0530	Side coiling grille, manual highly ornamental types, add		1,601.87	
0112	Add For Motor Operator	EA	1,088.90	
0520	Side coiling grille, manual moderately ornamental types, add		363.08	
0530	Side coiling grille, manual highly ornamental types, add		1,037.37	
08342 0199 Side coiling				
0200	Coiling grille, side coiling, 8' high x 12' long	EA	2,549.53	61.09
0510	Side coiling grille, manual stainless steel, add		1,991.25	
0520	Side coiling grille, manual moderately ornamental types, add		557.55	
0530	Side coiling grille, manual highly ornamental types, add		1,593.00	
0220	Coiling grille, side coiling, 8' high x 18' long	EA	3,478.49	106.89
0510	Side coiling grille, manual stainless steel, add		2,913.31	
0520	Side coiling grille, manual moderately ornamental types, add		815.73	
0530	Side coiling grille, manual highly ornamental types, add		2,330.65	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0240	Coiling grille, side coiling, 8' high x 24' long	EA	4,620.80	104.38
0510	Side coiling grille, manual stainless steel, add		3,982.50	
0520	Side coiling grille, manual moderately ornamental types, add		1,115.10	
0530	Side coiling grille, manual highly ornamental types, add		3,186.00	
0260	Coiling grille, side coiling, 12' high x 12' long	EA	3,478.49	122.75
0510	Side coiling grille, manual stainless steel, add		2,913.31	
0520	Side coiling grille, manual moderately ornamental types, add		815.73	
0530	Side coiling grille, manual highly ornamental types, add		2,330.65	
0280	Coiling grille, side coiling, 12' high x 18' long	EA	4,868.55	206.22
0510	Side coiling grille, manual stainless steel, add		4,292.19	
0520	Side coiling grille, manual moderately ornamental types, add		1,201.81	
0530	Side coiling grille, manual highly ornamental types, add		3,433.75	
0300	Coiling grille, side coiling, 12' high x 24' long	EA	6,709.88	282.73
0510	Side coiling grille, manual stainless steel, add		5,825.21	
0520	Side coiling grille, manual moderately ornamental types, add		1,631.06	
0530	Side coiling grille, manual highly ornamental types, add		4,660.17	
0500	Coiling grille, side coiling, add for motor operator	EA	1,610.16	11.59

08350 Flexible Doors

08356 0010 Rubber doors

0020	Rubber dr, pr 2'-6"x7', 14"x16" vision pnl, 48" wear pnl,	EA	2,728.21	68.26
0100	Rubber door, pair w/fr/hdw, for 18" extra height, add		710.85	
0110	Rubber door, pair w/fr/hdw, for 36" extra height, add		1,658.66	
0040	Rubber dr, pr 3' x 7', 14"x16" vision pnl, 48" wear pnl,	EA	3,086.19	67.79
0100	Rubber door, pair w/fr/hdw, for 18" extra height, add		811.07	
0110	Rubber door, pair w/fr/hdw, for 36" extra height, add		1,892.51	
0060	Rubber dr, pr 4' x 7', 14"x16" vision pnl, 48" wear pnl,	EA	3,333.25	64.17
0100	Rubber door, pair w/fr/hdw, for 18" extra height, add		876.99	
0110	Rubber door, pair w/fr/hdw, for 36" extra height, add		2,046.32	

08356 2000 Clear PVC Strip Doors

2001	8" Strip, 50% Overlap	SF	12.68	1.00
2002	8" Strip, 100% Overlap	SF	17.36	1.01
2003	12" Strip, 66% Overlap	SF	13.98	1.00
2004	12" Strip, 100% Overlap	SF	18.03	1.01

08356 3000 Replacemnt Strips

3001	8" Strip, 7' Long	EA	33.25	9.44
3002	8" Strip, 8' Long	EA	35.90	9.44
3003	12" Strip, 8' Long	EA	65.78	9.44
3004	12" Strip, 10' Long	EA	76.95	9.44
3005	12" Strip, 12' Long	EA	88.55	9.44

08360 Sectional Overhead Doors

08361 0010 Overhead, commercial

08361 0999 Commercial Grade Heavy Duty 1-3/4 In Thick, Mnnual Operation, Tracks, And Hardware

1000	Overhead coml, no frame, 1.75" thk, 8' x 8' H, HD, stk, sect, wd	EA	687.19	64.30
2001	For Medium Duty Stock Doors Deduct		-55.41	
2002	For Medium Duty Custom Doors Deduct		-34.36	
2003	For Mtor Operator Up To 14 Ft X14 Ft Add		300.24	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
1100	Overhead coml, no frame, 1.75" thk, 10' x 10' H, HD, stk, sect, wd	EA	941.54	70.55
2001	For Medium Duty Stock Doors Deduct		-79.36	
2002	For Medium Duty Custom Doors Deduct		-47.08	
2003	For Mtor Operator Up To 14 Ft X14 Ft Add		449.30	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
1200	Overhead coml, no frame, 1.75" thk, 12' x 12' H, HD, stk, sect, wd	EA	1,255.75	87.33
2001	For Medium Duty Stock Doors Deduct		-107.83	
2002	For Medium Duty Custom Doors Deduct		-62.79	
2003	For Mtor Operator Up To 14 Ft X14 Ft Add		620.99	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
1300	Overhead coml, no frame, 1.75" thk, 14' x 14' H, chain hoist, stk,	EA	1,965.61	102.24
2001	For Medium Duty Stock Doors Deduct		-176.08	
2002	For Medium Duty Custom Doors Deduct		-98.28	
2003	For Mtor Operator Up To 14 Ft X14 Ft Add		1,052.37	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1400	Overhead coml, no frame, 1.75" thk, 12' x 16' H, chain hoist, stk,	EA	1,918.09	130.32
2001	For Medium Duty Stock Doors Deduct		-165.19	
2002	For Medium Duty Custom Doors Deduct		-95.90	
2004	For Mtor Operator Over 14 Ft X 14 Ft, Add		1,150.20	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
1500	Overhead coml, no frame, 1.75" thk, 20' x 8' H, chain hoist, stk,	EA	1,697.54	152.06
2001	For Medium Duty Stock Doors Deduct		-149.34	
2002	For Medium Duty Custom Doors Deduct		-84.88	
2004	For Mtor Operator Over 14 Ft X 14 Ft, Add		1,045.78	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
1600	Overhead coml, no frame, 1.75" thk, 20' x 16' H, chain hoist, stk,	EA	4,060.63	227.04
2001	For Medium Duty Stock Doors Deduct		-365.08	
2002	For Medium Duty Custom Doors Deduct		-203.03	
2004	For Mtor Operator Over 14 Ft X 14 Ft, Add		2,571.09	
2005	For Vision Panel In Door Add PerGlass Panel		70.00	
2180	Ovhd dr, stk coml wd, for vision panel in dr, per glass pane, add		25.00	
08361 2599 Steel, sectional				
2600	Overhead coml, no frame, manual, 8' x 8' H, steel, 24 ga	EA	643.47	73.55
2830	Ovhd dr, stk coml stl, for insulated door, add		132.03	
2650	Overhead coml, no frame, manual, 10' x 10' H, steel, 24 ga	EA	787.40	72.95
2830	Ovhd dr, stk coml stl, for insulated door, add		172.05	
2700	Overhead coml, no frame, manual, 12' x 12' H, steel, 24 ga	EA	1,018.09	89.92
2830	Ovhd dr, stk coml stl, for insulated door, add		232.09	
2800	Overhead coml, no frame, chain hoist, 20' x 14' H, steel, 24 ga	EA	2,417.03	174.16
2830	Ovhd dr, stk coml stl, for insulated door, add		579.72	
2900	Ovhd, for elec trolley operator, 1/3 HP, to 12' x 12', add	EA	547.91	
2950	Ovhd, for elec trolley operator, 1/2 HP, over 12' x 12', add	EA	709.05	
08362 0010 Residential garage doors				
Note: Includes track and hardware. Frame not included				
08362 0049 Hinged				
08362 0049 Wood				
0050	Resi dr, dbl dr, 9' x 7', w/hardware, no frame, custom	EA	438.60	30.82
0140	Garage dr, resi, hinged dbl wd for vision panel, per glass pane, add		25.00	
0070	Resi dr, dbl dr, 16' x 7', w/hardware, no frame, custom	EA	693.73	32.18
0140	Garage dr, resi, hinged dbl wd for vision panel, per glass pane, add		25.00	
08362 0199 Overhead, sectional				
08362 0199 Fiberglass				
0200	Resi dr, 9' x 7', std, w/hardware, no frame, overhead, sect, fbgl	EA	601.15	23.36
0220	Resi dr, 9' x 7', dlx, w/hardware, no frame, overhead, sect, fbgl	EA	684.86	23.36
08362 0699 Metal				
0700	Resi dr, 9' x 7', std, w/hardware, no frame, overhead, sect, met	EA	336.64	18.34
0830	Garage dr, resi, ovhd stl, for aluminum & fiberglass, add		235.79	
0860	Garage dr, resi, ovhd stl, for vision panel, per glass pane, add		37.00	
0870	Garage dr, resi, ovhd stl, for insulated door, add		70.74	
2101	For Aluminum And Fiberglass Add		73.09	
2102	For Mtor Operator Economy Grade Add		109.06	
2103	For Mtor Operator Deluxe Grade WRemote Controls Add		109.06	
2104	For Vision Panel In Door Add PerGlass Panel		50.00	
0800	Resi dr, 16' x 7', std, w/hardware, no frame, overhead, sect, met	EA	572.10	21.17
0830	Garage dr, resi, ovhd stl, for aluminum & fiberglass, add		394.61	
0860	Garage dr, resi, ovhd stl, for vision panel, per glass pane, add		37.00	
0870	Garage dr, resi, ovhd stl, for insulated door, add		118.38	
2101	For Aluminum And Fiberglass Add		122.33	
2102	For Mtor Operator Economy Grade Add		185.83	
2103	For Mtor Operator Deluxe Grade WRemote Controls Add		185.83	
2104	For Vision Panel In Door Add PerGlass Panel		50.00	
4014	Garage door opener, 1/3 HP economic	EA	210.27	
4054	Garage door opener, 1/3 HP deluxe	EA	269.68	
08362 5000 Removal & Reinstallation Of Sectional Doors				
Note: Metal O/H Doors & Supports. Includes Storage, Cleaning And Misc. Supply Materials				
5010	Remove & Reinstall Sectional Metal O/H Door & Supports	SF	4.83	
08364 Telescoping Doors				
08364 1000 Telescoping Doors w/o Frame or Electrical Mtor				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1001	20' X 12' Manually Operated Tele scoping Door	EA	12,078.00	
08365 Multileaf Vertical Lift Doors				
08366 0010 Telescoping steel doors				
1000	Telescoping stl dr,elec opr, 10'x10'H,baked enamel, .03" T,	EA	10,020.21	
2500	Telescoping stl dr,elec opr, 20'x12'H,baked enamel, .03" T,	EA	15,183.44	
08367 0010 Vertical lift doors				
Note: With 14 Ga Steel Facing Included Are Wind Lock Seals, Track & Ctweight Support Members ,Ctwts With Cable Drive,Electric Mtor & Control Panel Furnish In 5Ft High Sections By Height And Width Listed				
0100	Dr, w/fr & cntrl pnl, 10'x20' H, motorized, 14 ga stl, vertical	EA	22,242.37	221.19
0120	Dr, w/fr & cntrl pnl, 15'x20' H, motorized, 14 ga stl, vertical	EA	25,639.69	198.05
0122	Vertical Lift Steel Door w/Mtor Operator and Frame, 16'x16' Hig	EA	4,392.33	
0140	Dr, w/fr & cntrl pnl, 20'x20' H, motorized, 14 ga stl, vertical	EA	27,559.15	218.34
0160	Dr, w/fr & cntrl pnl, 25'x20' H, motorized, 14 ga stl, vertical	EA	30,945.45	227.22
0180	Dr, w/fr & cntrl pnl, 20'x25' H, motorized, 14 ga stl, vertical	EA	32,422.98	233.95
0200	Dr, w/fr & cntrl pnl, 25'x25' H, motorized, 14 ga stl, vertical	EA	37,084.41	365.96
0220	Dr, w/fr & cntrl pnl, 25'x30' H, motorized, 14 ga stl, vertical	EA	39,884.40	356.11
0240	Dr, w/fr & cntrl pnl, 30'x30' H, motorized, 14 ga stl, vertical	EA	45,562.85	376.78
0242	Vertical Lift Steel Door w/Mtor Operator and Frame, 32'x24' Hig	EA	11,833.73	402.18
0260	Dr, w/fr & cntrl pnl, 35'x30' H, motorized, 14 ga stl, vertical	EA	50,585.12	389.21
08368 Hangar Doors				
08369 0011 Hangar door				
08369 4000 Bi-part, anchored group				
4020	Dr,150' W to 20' H,25 PSF, non-xpl,elec opn/hdw,25' pnl,	SF	32.51	4.98
4040	Dr,150' W 20' -40' H,25 PSF, non-xpl,elec opn/hdw,25' pnl,	SF	35.47	1.00
4060	Dr,180' W 40' -60' H,25 PSF, non-xpl,elec opn/hdw,25' pnl,	SF	37.14	0.63
4080	Dr,180' W 60' -80' H,25 PSF, non-xpl,elec opn/hdw,25' pnl,	SF	39.14	0.59
4100	Dr,200' W abv 80' H,25 PSF, non-xpl,elec opn/hdw,25' pnl,	SF	42.06	0.41
08370 Special Purpose Doors & Windows				
08372 0010 Air curtains with fan and motor				
08372 0100 Shipping and receiving doors				
0150	Air curtain, mult of 3' W unheated, min wind stop, 8' H,	EA	1,018.81	238.88
0155	Air curtain,mult of 3' -6"W unheated, min wind stop, 8' H,	EA	1,032.64	242.35
0157	Air curtain, mult of 4' W unheated, min wind stop, 8' H,	EA	1,081.91	249.91
0160	Air curtain, mult of 5' W unheated, min wind stop, 8' H,	EA	1,283.13	256.53
0170	Air curtain, mult of 6' W unheated, min wind stop, 8' H,	EA	1,487.80	287.68
0180	Air curtain, mult of 7' W unheated, min wind stop, 8' H,	EA	1,742.66	288.35
0190	Air curtain, mult of 8' W unheated, min wind stop, 8' H,	EA	1,758.86	318.27
0200	Air curtain, mult of 10' W unheated, min wind stop, 8' H,	EA	2,429.46	330.13
0550	Air curtain, mult of 4' W unheated, max wind stop, 10' H,	EA	1,269.31	237.60
08372 1500 Customer entrance doors				
1550	Air curtain,10' H,mult of 3' W unheated,min wind stop, cust	EA	1,063.07	249.53
1555	Air curtain,10' H, mult of 3' -6"W unheated,min wind stop,	EA	1,076.75	249.35
1557	Air curtain,10' H,mult of 4' W unheated,min wind stop, cust	EA	1,096.64	252.49
1560	Air curtain,10' H,mult of 5' W unheated,min wind stop, cust	EA	1,560.53	279.60
1570	Air curtain,10' H,mult of 6' W unheated,min wind stop, cust	EA	1,590.84	273.77
1580	Air curtain,10' H,mult of 7' W unheated,min wind stop, cust	EA	1,821.40	295.16
1590	Air curtain,10' H,mult of10' W unheated,min wind stop, cust	EA	2,444.93	330.35
1600	Air curtain,10' H,mult of12' W unheated,min wind stop, cust	EA	3,016.43	336.19
1610	Air curtain,10' H,mult of15' W unheated,min wind stop, cust	EA	3,280.53	316.59
08372 2999 Service window				
3000	Air curtain, service window, unheated, 5' high x 2' -6" wide	EA	739.53	260.56
08376 0010 Rolling service doors Manual				
Note: Steel Frame And Hardware Included, Mtorized doors include the safety strip				
08376 0049 Manual steel				
0050	Rolling service door, incl hardware 8' x 8' H, 20 ga,	EA	1,143.80	36.26
0100	Rolling service door, incl hardware 10' x 10' H, 20 ga,	EA	1,440.18	54.13
0300	Rolling service door, incl hardware 12' x 12' H, 20 ga,	EA	1,771.95	72.71
0420	Rolling service door, incl hardware 14' x 12' H, 20 ga,	EA	2,262.90	90.54
0430	Rolling service door, incl hardware 14' x 13' H, 20 ga,	EA	2,384.59	92.72
0500	Rolling service door, incl hardware 14' x 14' H, 20 ga,	EA	2,524.52	122.78

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0520	Rolling service door, incl hardware 14' x 16' H, 20 ga,	EA	2,778.54	108.51
0540	Rolling service door, incl hardware 14' x 20' H, 20 ga,	EA	3,880.50	165.36
0750	Rolling service door, incl hardware 16' x 24' H, 20 ga,	EA	6,114.80	224.22
08376 2729 Manual steel rollup fire doors				
2730	Rolling service door, w/ tracks & hdw, manual steel rollup fire	SF	20.65	0.65
2740	Rollup fire dr, manual stl, for motor operated, add	EA	1,538.02	103.99
4500	Rolling service doors, motor operators, to 14' x 14' opening	EA	1,078.88	20.80
4600	Rolling service doors, mot operators, over 14' x 14', jack	EA	966.77	20.80
08376 4800 Removal & Reinstallation Of Roll-Up Door&Support				
Note: Includes Storage, Cleaning And Msc. Supply Materials				
4810	Remove & Reinstall Metal Roll-UP Door & Supports	SF	7.19	
08378 Swing Doors				
08379 0009 Glass, swing				
Note: No Frame. Standard Standard Hardware, Pull Handle, Push Bar, Pivot Hinge, Security Lock, And Door Closer				
0500	Glass, swing, 3' x 7' opening, w/ hardware, 3/4" T, tempered	EA	2,697.13	63.17
1000	Glass/al swing dr, for bronze anodized aluminum add		363.22	
1010	Glass/al swing dr, for stainless steel materials, add		847.51	
0520	Glass, swing, 3'-6"x7' opening, w/ hardware, 3/4" T, tempered	EA	2,978.39	60.24
1000	Glass/al swing dr, for bronze anodized aluminum add		387.68	
1010	Glass/al swing dr, for stainless steel materials, add		904.60	
08385 Acoustical Door Units				
08385 1000 Acoustical Doors, Including Framed Seals & Auto Door Button				
1001	3'x7' Wood Door, 27 STC Rating	EA	1,105.93	53.91
1002	3'x7' Steel Door, 40 STC Rating	EA	2,141.87	72.82
1003	3'x7' Steel Door, 45 STC Rating	EA	2,775.97	72.82
1004	3'x7' Steel Door, 48 STC Rating	EA	3,316.13	72.82
1005	3'x7' Steel Door, 53 STC Rating	EA	3,903.25	72.82
08390 Screen & Storm Doors				
08390 3000 Wood Screen Storm Door, Residential Grade Includes Frame, Trim and Usual Hardware.				
3001	2'-8" x 6'-8" Wood Screen Door	EA	140.55	30.13
3002	3' x 6'-8" Wood Screen Door	EA	150.71	33.45
3003	2'-8" x 7" Wood Screen Door	EA	140.55	30.13
3004	3' x 7' Wood Screen Door	EA	150.71	33.45
08394 0010 Storm doors and frames				
Note: Includes Frame Trim And Usual Hardware				
1500	Storm dr & fr, al, 6'-8" x 2'-6"W, white painted, comb	EA	208.14	15.48
1600	Storm dr & fr, al, for 7' dr, add, white painted, comb storm/scr		8.63	
1650	Comb storm/screen door & frame, for special finished, add		56.97	
1540	Storm dr & fr, al, 6'-8" x 3'-0"W, white painted, comb	EA	229.73	15.47
1600	Storm dr & fr, al, for 7' dr, add, white painted, comb storm/scr		9.59	
1650	Comb storm/screen door & frame, for special finished, add		63.26	
1550	Heavy Duty Storm Door, MDN-RAY # 822 Or Equal		426.00	
08400 Entrances & Storefronts				
08410 Aluminum				
08413 0010 Aluminum doors				
Note: Standard Hardware. Pull Handle, Push Bar, Pivot Hinge Security Lock And Flush Bolts For Inactive Leaf Of A Pair Of Doors				
08413 0799 Narrow style				
0800	Alum dr, coml entr, pr 2'-6"x7'-0", no glazing, std hdw,	EA	1,144.66	62.20
6000	Glass/al coml entr dr, for bronze anodized aluminum add		124.72	
6010	Glass/al coml entr dr, for stainless steel materials, add		291.00	
1000	Alum dr, coml entr, 3'-0"x7'-0", no glazing, std hdw, nar stile	EA	676.33	15.81
6000	Glass/al coml entr dr, for bronze anodized aluminum add		74.83	
6010	Glass/al coml entr dr, for stainless steel materials, add		174.59	
1200	Alum dr, coml entr, pr 3'-0"x7'-0", no glazing, std hdw,	EA	1,162.60	39.67
6000	Glass/al coml entr dr, for bronze anodized aluminum add		127.41	
6010	Glass/al coml entr dr, for stainless steel materials, add		297.28	
1500	Alum dr, coml entr, 3'-6"x7'-0", no glazing, std hdw, nar stile	EA	688.97	26.09
6000	Glass/al coml entr dr, for bronze anodized aluminum add		76.72	
6010	Glass/al coml entr dr, for stainless steel materials, add		179.02	
08413 1999 Medium style				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2000	Alum dr, coml entr, pr 2'-6"x7'-0", no glazing, std hdw,	EA	1,406.05	62.70
6000	Glass/al coml entr dr, for bronze anodized aluminum add		163.92	
6010	Glass/al coml entr dr, for stainless steel materials, add		382.49	
2100	Alum dr, coml entr, 3'-0"x7'-0", no glazing, std hdw, ndm stile	EA	792.57	31.48
6000	Glass/al coml entr dr, for bronze anodized aluminum add		92.26	
6010	Glass/al coml entr dr, for stainless steel materials, add		215.28	
2200	Alum dr, coml entr, pr 3'-0"x7'-0", no glazing, std hdw,	EA	1,412.03	52.91
6000	Glass/al coml entr dr, for bronze anodized aluminum add		164.82	
6010	Glass/al coml entr dr, for stainless steel materials, add		384.58	
2300	Alum dr, coml entr, 3'-6"x7'-0", no glazing, std hdw, ndm stile	EA	732.55	27.56
6000	Glass/al coml entr dr, for bronze anodized aluminum add		94.90	
6010	Glass/al coml entr dr, for stainless steel materials, add		221.42	
08413 4999 Flush panel doors				
Note: Panels To Match Adjacent Wall Panels				
5000	Alum dr, coml entr, pr 2'-6"x7'-0", no glazing, std hdw,	EA	1,187.53	27.12
6000	Glass/al coml entr dr, for bronze anodized aluminum add		135.09	
6010	Glass/al coml entr dr, for stainless steel materials, add		315.20	
5050	Alum dr, coml entr, 3'-0"x7'-0", no glazing, std hdw, fl pnl dr	EA	679.86	14.60
6000	Glass/al coml entr dr, for bronze anodized aluminum add		67.54	
6010	Glass/al coml entr dr, for stainless steel materials, add		157.60	
5100	Alum dr, coml entr, pr 3'-0"x7'-0", no glazing, std hdw,	EA	1,215.93	24.79
6000	Glass/al coml entr dr, for bronze anodized aluminum add		139.35	
6010	Glass/al coml entr dr, for stainless steel materials, add		325.14	
5150	Alum dr, coml entr, 3'-6" x 7', no glazing, std hdw, fl pnl dr	EA	782.61	16.25
6000	Glass/al coml entr dr, for bronze anodized aluminum add		82.96	
6010	Glass/al coml entr dr, for stainless steel materials, add		193.56	
08415 0010 Aluminum doors and frames				
Note: Assembled From Components Stock Shapes & Parts Similar To Curtain Wall, Standard Doors Include Frame, Trim And Hardware, Not Including Glass				
08415 0014 Narrow Style				
0015	Alum dr&fr, 2'-6" x 7', w/hdw&closer, clr fin, no glass,	EA	800.23	13.88
1100	for full vision, w/ 1/2" Glass, Add		282.30	
1200	for non-standard size, add		343.89	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		184.78	
1550	for special finishes, add		333.63	
1560	for 36" high transom add		479.32	
1570	for sidelight, add		256.64	
1580	for installation of sidelite, add		114.78	
0020	Alum dr&fr, 3'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	735.79	13.52
1100	for full vision, w/ 1/2" Glass, Add		246.86	
1200	for non-standard size, add		300.72	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		161.58	
1550	for special finishes, add		291.74	
1560	for 36" high transom add		424.55	
1570	for sidelight, add		224.42	
1580	for installation of sidelite, add		114.78	
0030	Alum dr&fr, 3'-6" x 7', w/hdw&closer, clr fin, no glass,	EA	748.08	46.60
1100	for full vision, w/ 1/2" Glass, Add		253.62	
1200	for non-standard size, add		308.95	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		166.00	
1550	for special finishes, add		299.73	
1560	for 36" high transom add		435.00	
1570	for sidelight, add		230.56	
1580	for installation of sidelite, add		114.78	
0280	Alum dr&fr, 5'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,051.68	56.60
1100	for full vision, w/ 1/2" Glass, Add		420.60	
1200	for non-standard size, add		512.36	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		275.30	
1550	for special finishes, add		497.07	
1560	for 36" high transom add		693.06	
1570	for sidelight, add		382.36	
1580	for installation of sidelite, add		114.78	
0300	Alum dr&fr, 6'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,185.85	67.47
1100	for full vision, w/ 1/2" Glass, Add		409.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1200	for non-standard size, add		498.73	
1250	for instl non-standard size, add		44.15	
1500	for black finish, add		267.97	
1550	for special finishes, add		483.84	
1560	for 36" high transom add		698.94	
1570	for sidelight, add		372.19	
1580	for installation of sidelite, add		176.59	
0420	Alum dr&fr, 7'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,430.84	79.77
1100	for full vision, w/ 1/2" Glass, Add		471.31	
1200	for non-standard size, add		574.14	
1250	for instl non-standard size, add		57.39	
1500	for black finish, add		308.49	
1550	for special finishes, add		557.00	
1560	for 36" high transom add		814.47	
1570	for sidelight, add		428.46	
1580	for installation of sidelite, add		229.57	
08415 0499	Wde style			
0500	Alum dr&fr, 2'-6" x 7', w/hdw&closer, clr fin, no glass,	EA	1,041.42	71.99
1100	for full vision, w/ 1/2" Glass, Add		414.95	
1200	for non-standard size, add		505.49	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		271.61	
1550	for special finishes, add		490.40	
1560	for 36" high transom add		684.34	
1570	for sidelight, add		377.23	
1580	for installation of sidelite, add		114.78	
0520	Alum dr&fr, 3'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	958.37	66.04
1100	for full vision, w/ 1/2" Glass, Add		369.28	
1200	for non-standard size, add		449.84	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		241.71	
1550	for special finishes, add		436.42	
1560	for 36" high transom add		613.74	
1570	for sidelight, add		335.71	
1580	for installation of sidelite, add		114.78	
0540	Alum dr&fr, 3'-6" x 7', w/hdw&closer, clr fin, no glass,	EA	990.60	81.57
1100	for full vision, w/ 1/2" Glass, Add		387.00	
1200	for non-standard size, add		471.44	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		253.31	
1550	for special finishes, add		457.37	
1560	for 36" high transom add		641.14	
1570	for sidelight, add		351.82	
1580	for installation of sidelite, add		114.78	
0560	Alum dr&fr, 5'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,366.37	91.61
1100	for full vision, w/ 1/2" Glass, Add		593.68	
1200	for non-standard size, add		723.20	
1250	for instl non-standard size, add		28.70	
1500	for black finish, add		388.59	
1550	for special finishes, add		701.62	
1560	for 36" high transom add		960.54	
1570	for sidelight, add		539.71	
1580	for installation of sidelite, add		114.78	
0580	Alum dr&ra, 6'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,475.55	109.69
1100	for full vision, w/ 1/2" Glass, Add		568.74	
1200	for non-standard size, add		692.83	
1250	for instl non-standard size, add		44.15	
1500	for black finish, add		372.27	
1550	for special finishes, add		672.15	
1560	for 36" high transom add		945.18	
1570	for sidelight, add		517.04	
1580	for installation of sidelite, add		176.59	
0600	Alum dr&fr, 7'-0" x 7', w/hdw&closer, clr fin, no glass,	EA	1,748.68	122.32
1100	for full vision, w/ 1/2" Glass, Add		646.12	
1200	for non-standard size, add		787.09	
1250	for instl non-standard size, add		57.39	
1500	for black finish, add		422.91	
1550	for special finishes, add		763.59	
1560	for 36" high transom add		1,084.63	
1570	for sidelight, add		587.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1580	for installation of sidelite, add		229.57	
08417 0009	Entrance doors Full Glass Entrance Doors Include Trim And Hardware And Tempered Glass			
0015	Entrance dr, hardware & sst trim 1/2" T, 3' x 7', tempered glass	EA	2,300.01	78.20
0500	Entr dr, hdw & trim temp glass, for anodized color, add		298.48	
0020	Entrance dr, hardware & sst trim 1/2" T, 6' x 7', tempered glass	PR	4,134.14	92.04
0500	Entr dr, hdw & trim temp glass, for anodized color, add		538.10	
0040	Entrance dr, hardware & sst trim 3/4" T, 3' x 7', tempered glass	EA	5,486.57	162.35
0500	Entr dr, hdw & trim temp glass, for anodized color, add		776.46	
0060	Entrance dr, hardware & sst trim 3/4" T, 6' x 7', tempered glass	PR	10,899.63	208.66
0500	Entr dr, hdw & trim temp glass, for anodized color, add		1,552.92	
0070	Glass Entr Door, Ltw Alum Frame 1/8"x17" Shaped Jamb-Head	LF	16.00	
0080	Glass Entr Door, Hvywt Alum Frame 1/8"x17" Shaped Jamb-Head	LF	20.30	

08470 Revolving Doors

Note: Prices Are For Stock Units, Including Frame And Trim 6 Ft 6 In To 7 Ft In Diameter And 6 Ft 10 In To 7 Ft High

08471 0010 Revolving doors

0050	Revolving door al, stk, 6'-6" to 7' dia, 6'-10" to 7' H	EA	19,849.75	1,151.57
1500	Revolving doors, for automatic controls, add	EA	11,494.10	
2000	Revolving door, 10'-6" to 12'-6" Dia. 6'-10" to 7' High	EA	118,602.69	
3000	Revolving door, 14'-6" to 16'-6" , 6'-10" To 7' High.	EA	139,336.09	

08500 Metal Windows

08510 Steel Windows

Note: Fixed window equates to an in-operable window, 50% vented equates to half the window is operable, 100% Vented equates the full window is operable.

08512 0010 Steel sash

08512 0099 Casement

0100	Steel sash, custom unit, 100% vented, no glazing & trim	SF	39.53	0.39
6510	Steel sash, custom unit, no glass, for bonderized finish, add		3.67	
0200	Steel sash, custom unit, 50% vented, no glazing & trim	SF	34.15	0.39
6510	Steel sash, custom unit, no glass, for bonderized finish, add		3.13	
0300	Steel sash, custom unit, no glazing & trim casement, fixed	SF	23.76	0.65
6510	Steel sash, custom unit, no glass, for bonderized finish, add		2.09	

08512 0999 Projected

1000	Steel sash, custom unit, coml, 40% vented, no glazing & trim	SF	35.38	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		3.25	
1100	Steel sash, custom unit, intr, 50% vented, no glazing & trim	SF	38.66	0.79
6510	Steel sash, custom unit, no glass, for bonderized finish, add		3.58	

08512 1499 Industrial

1500	Steel sash, custom unit, horiz pivoted, no glazing & trim	SF	30.00	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		2.71	
1600	Steel sash, custom unit, fixed, no glazing & trim industrial	SF	26.30	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		2.34	

08512 1999 Industrial security

2000	Steel sash, custom unit, 50% vented, no glazing & trim indl	SF	44.17	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		4.13	
2100	Steel sash, custom unit, fixed, no glazing & trim indl scty	SF	37.44	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		3.46	

08512 2499 Picture window

2500	Steel sash, custom unit, no glazing & trim picture window	SF	17.82	0.86
6510	Steel sash, custom unit, no glass, for bonderized finish, add		1.50	

08512 2999 Double hung

3000	Steel sash, custom unit, no glazing & trim double hung	SF	42.84	0.83
6510	Steel sash, custom unit, no glass, for bonderized finish, add		4.00	

08512 4999 Mullions

5000	Steel sash, mullions for above, open interior face	LF	9.84	0.64
6510	Steel sash, custom unit, no glass, for bonderized finish, add		0.75	
5100	Steel sash, mullions for above, w/interior cover	LF	14.95	0.54
6510	Steel sash, custom unit, no glass, for bonderized finish, add		1.26	
6000	Ml wndw, steel sash, double glazing for above, add	SF	10.24	

08512 7000 Removal & Reinstallation Of Metal Window & Frame

Note: (Steel Or Aluminum) Includes Storage, Cleaning And M.sc. Supply Materials

7010	Remove & Reinstall Metal Window And Frame	SF	5.57	
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08520 Aluminum Windows

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
08520 1700	Storm Windows With Glass, Double Track			
1701	Double Hung, Alum, Combination Storm & Screen, No Glass	SF	9.42	0.70
2001	Al SemiCirc Head Fixed Window Casement Type	SF	20.38	1.48
2002	Al SemiCirc Head Operable Window Casement Type	SF	20.38	1.48
08524 0010	Aluminum windows			
6500	Al windows, w/frame&glazing, casement, opn, grade C, std	SF	37.86	2.33
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.89	
6900	Al wind, w/frame/glazing, for duranodic finish, add		3.83	
6520	Al windows, w/frame&glazing, casement, fixed, grade C, std	SF	22.25	2.33
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.11	
6900	Al wind, w/frame/glazing, for duranodic finish, add		2.10	
6540	Al windows, w/frame&glazing, double hung, grade C, std brush	SF	22.22	1.72
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.11	
6900	Al wind, w/frame/glazing, for duranodic finish, add		1.96	
6560	Al windows, w/frame&glazing, single hung, grade C, std brush	SF	18.30	1.65
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		0.92	
6900	Al wind, w/frame/glazing, for duranodic finish, add		1.62	
6580	Al windows, w/frame&glazing, projected wdo, grade C, std	SF	36.08	1.90
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.80	
6900	Al wind, w/frame/glazing, for duranodic finish, add		3.62	
6600	Al windows, w/frame&glazing, picture window, grade C, std	SF	20.91	2.55
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.05	
6900	Al wind, w/frame/glazing, for duranodic finish, add		1.80	
6620	Al windows, w/frame&glazing, sliding window, grade C, std	SF	20.34	2.01
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.02	
6900	Al wind, w/frame/glazing, for duranodic finish, add		1.87	
6640	Al windows, w/frame&glazing, hopper sash, grade C, std brush	SF	39.74	3.59
6670	Al wind, w/fr/glazing, for installation in concrete openings, add		1.99	
6900	Al wind, w/frame/glazing, for duranodic finish, add		4.06	
6650	Al wdo, w/frame & glaz, gr C, std brush fin, thrm barrier	SF	5.98	0.25
6900	Al wind, w/frame/glazing, for duranodic finish, add		0.00	
6680	Al windows, insect screen, up to 10 SF, std brush finish	SF	3.63	0.50
6900	Al wind, w/frame/glazing, for duranodic finish, add		0.35	
6700	Al windows, insect screen, std brush finish, over 10 SF	SF	2.32	0.36
6900	Al wind, w/frame/glazing, for duranodic finish, add		0.24	
6800	Al windows, mullions, tubular type	LF	5.36	0.79
6900	Al wind, w/frame/glazing, for duranodic finish, add		0.36	

08600 Wood & Plastic Windows

08603 Wood Windows

Note: Windows Are Glazed W 1/8" Thick Clear Glass (Type II, Class I) And Provided W/Screens

08604 0010 Awning window

08604 0700 Wood

0710	Awning wdo, 2'-10"x1'-9"H, w/ 7/8" insul gl, wd, w/fr/scr/ext	EA	185.36	9.05
0720	Awning wdo, 2'-10"x6'-0"H, w/ 7/8" insul gl, wd, w/fr/scr/ext	EA	492.15	17.31
0730	Awning wdo, 4'-4"x1'-9" H, w/ 7/8" insul gl, wd, w/fr/scr/ext	EA	304.94	14.24
0740	Awning wdo, 4'-4"x6'-0" H, w/ 7/8" insul gl, wd, w/fr/scr/ext	EA	862.47	24.66

08610 6000 Removal & Reinstallation Of Wood Window & Frame

Note: Includes Storage, Cleaning And Misc. Supply Materials

6001	Rem & Reinstall Wood Windows & Frames	SF	10.63	
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08620 0010 Casement window

08620 0459 Wood

0460	Casement window, 1'-10"x3'-2"H, wd, DSA glz, 1 leaf,	EA	195.02	9.35
0466	Casement wind, wd, to 50" high, for each removable mullion, add		24.50	
0490	Casement wind, wd, DSA glazed, for insulating glass, add		75.78	
0465	Casement window, 4'-2"x4'-2" H, wd, DSA glz, 2 leaf,	EA	432.07	13.35
0466	Casement wind, wd, to 50" high, for each removable mullion, add		24.50	
0490	Casement wind, wd, DSA glazed, for insulating glass, add		179.46	
0470	Casement window, 5'-11"x5'-2"H, wd, DSA glz, 3 leaf,	EA	681.61	21.67
0471	Casement wind, wd, to 62" high, for each removable mullion, add		24.50	
0490	Casement wind, wd, DSA glazed, for insulating glass, add		290.75	
0475	Casement window, 7'-9"x6'-3" H, wd, DSA glz, 4 leaf,	EA	1,034.87	30.08
0481	Casement wind, wd, to 75" high, for each removable mullion, add		24.50	
0490	Casement wind, wd, DSA glazed, for insulating glass, add		439.07	
0480	Casement window, 9'-9"x6'-3" H, wd, DSA glz, 5 leaf,	EA	1,310.02	37.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0481	Casement wind, wd, to 75" high, for each removable mullion, add		24.50	
0490	Casement wind, wd, DSA glazed, for insulating glass, add		555.28	
08624 0010	Double hung			
08624 0400	Wood			
0410	Dbl hung, 2'-8"x4'-6"H, wood, 1/4" clr tempered gl,	EA	254.04	19.17
0430	Dbl hung wind, wd, 1/4" temp glass, for insulating glass, add		101.01	
0420	Dbl hung, 4'-4"x3'-3"H, wood, 1/4" clr tempered gl,	EA	298.99	24.73
0430	Dbl hung wind, wd, 1/4" temp glass, for insulating glass, add		119.57	
08632 0010	Picture window			
08632 0919	Wood			
0920	Picture window, w/ 7/8" insul gl 4'-6" x 4'-6" H, w/fr & ext	EA	360.09	18.84
0925	Picture wind, wd, for snap-in mullions 54" x 54", add		33.00	
0930	Picture window, w/ 7/8" insul gl 5'-8" x 4'-6" H, w/fr & ext	EA	441.60	22.66
0935	Picture wind, wd, for snap-in mullions 68" x 54", add		47.00	
08640 0010	Sliding window			
08640 0400	Wood			
0410	Sliding window, 3'-4"x2'-7"H, wd, w/ 1/4" clr temp gl,	EA	230.90	15.81
0420	Sliding window, 4'-4"x3'-3"H, wd, w/ 1/4" clr temp gl,	EA	311.96	16.24
0430	Sliding window, 5'-4"x6'-0"H, wd, w/ 1/4" clr temp gl,	EA	466.27	16.97
08650 Extruded PVC Windows				
08650 1000	Extruded PVC Windows			
1001	Fixed Sash, 0 To 100 Sf		37.61	
1002	Fixed Sash, Over 100 Sf		35.99	
1003	Tile/Turn, 0 To 100 Sf		61.49	
1004	Tile/Turn, Over 100 Sf		55.94	
1005	Casement, 0 To 100 Sf		52.86	
1006	Casement, Over 100 Sf		50.56	
08700 Hardware				
Joc Note: Demolition Of Doors And Windows Include All Associated Hardware And Devices. For Individual Hardware Removal Use The Appropriate Demolition Line Items.				
08701 Finish Hardware				
Note: All Locksets And Panic Hardware Are Supplied With Knob, Lever Or Thumbpiece And Include Construction Cores.				
08704 0009	Bolts, flush			
0020	Bolts flush, std, concealed	EA	38.03	1.06
2000	Brass Flush Bolt, Lever Extension UL Rated, Type L34082	EA	20.35	1.07
2500	6"L Brass Surface Bolt w/Strike Type L14132	EA	23.55	1.53
08708 0009	Deadlocks			
0030	Deadlocks, mortise, heavy duty, outside key, brass	EA	114.61	8.45
1050	Deadlocks, bored, double cylinder, brass	EA	94.00	9.32
08709 1000	Msc Hardware			
1001	H.D. Continuous S.S. Hinge, U.L. Rated	LF	36.87	1.41
1004	Continuous Steel Hinge	LF	11.80	1.64
1005	Screw Hinge, Steel	LF	12.79	4.62
1011	Std Duty Cylindrical Latchset Finish Hardware	EA	98.02	2.61
1012	Hvy Duty Cylindrical Latchset Finish Hardware	EA	95.84	2.08
1013	Heavy Duty Mortise Latchset Finish Hardware	EA	131.55	6.50
1021	Std Duty Cylindrical Lockset Finish Hardware	EA	108.84	2.61
1022	Hvy Duty Cylindrical Lockset Finish Hardware	EA	106.62	2.08
1023	Heavy Duty Mortise Lockset Finish Hardware	EA	198.60	6.33
1041	Door Closer, Ext Surface Mounted Finish Hardware	EA	142.59	7.93
1042	Door Closer, Int Surface Mounted Finish Hardware	EA	111.17	8.14
1043	Door Closer, Concealed Munt, Head Finish Hardware	EA	182.08	9.51
1044	Door Closer, Concealed Munt, Flr Finish Hardware	EA	265.91	24.91
1045	Door Coordinating Device Finish Hardware	PR	147.30	3.68
1051	Pivot Hinges, Top Pivot Finish Hardware	EA	106.00	10.14
1052	Pivot Hinges, Intermediate Pivot Finish Hardware	EA	158.63	7.87
1053	Pivot Hinges, Bottom Pivot Finish Hardware	EA	255.41	25.11
1071	Door Surface Plate Finish Hardware	EA	11.85	1.51
1081	Panic Device, Unlabeled Rim Finish Hardware	EA	379.64	12.05
1082	Panic Device, Unlabeled Mortise Finish Hardware	EA	506.20	11.89
1083	Panic Device, Unlabeled Vert Rod Finish Hardware	EA	506.88	11.85
1084	Panic Device, Labeled Rim Finish Hardware	EA	580.42	11.79

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1085	Panic Device, Labeled Mortise Finish Hardware	EA	580.42	11.79
1086	Panic Device, Labeled Vert Rod Finish Hardware	EA	580.42	11.79
1087	Re-Core Cylinder	EA	30.35	
1103	Door Viewer, Wide Angle, Brass, Adj. from 1-3/8" To 2" Depth	EA	14.37	
1200	St. Door Edge Guard W Or W/O Astragal, 6'-8" Or 7'-0"	EA	31.09	
1201	Stainless Steel Door Edge Guard	EA	39.18	
1202	SST Impact Bumpers	EA	44.72	
1203	Security Astragal, St., Min 1/8" Thick, 6'-8" or 7'-0"	EA	21.86	
08710 0009	Doorstops			
0010	Doorstops, holder & bumper, floor or wall, aluminum	EA	22.22	1.90
2081	For Brass Finish Add		5.28	
2144	For Stainless Steel Finish, Add		1.39	
1300	Alum Door Bumper, 4" Dia Wall Type w/Convex Rubber Pad, Type L42082	EA	12.33	1.90
2081	For Brass Finish Add		1.52	
2144	For Stainless Steel Finish, Add		0.40	
1600	Aluminum Door Bumper, Floor Type Type L32142	EA	11.32	1.96
2081	For Brass Finish Add		1.14	
2144	For Stainless Steel Finish, Add		0.30	
1620	Brass Door Bumper, Floor Type Type L12141	EA	11.08	1.16
2144	For Stainless Steel Finish, Add		0.28	
2500	Aluminum Door Holder, Floor Type Type L31302	EA	26.79	4.96
2051	For Satin Brass Plated Clear Coated Finish Deduct		-3.14	
2052	For Primed For Paint Finish Deduct		-3.69	
2053	For Bright Chrome Plated Finish Add		3.69	
2082	For Brass Finish Add		7.02	
2144	For Stainless Steel Finish, Add		1.85	
2520	Aluminum Door Holder, Wall Type Type L11261	EA	28.48	4.06
2051	For Satin Brass Plated Clear Coated Finish Deduct		-3.43	
2052	For Primed For Paint Finish Deduct		-4.03	
2053	For Bright Chrome Plated Finish Add		4.03	
2082	For Brass Finish Add		7.66	
2144	For Stainless Steel Finish, Add		2.02	
2540	Alum Door Holder, Plunger Type Type L31403	EA	33.36	4.66
2051	For Satin Brass Plated Clear Coated Finish Deduct		-4.26	
2052	For Primed For Paint Finish Deduct		-5.01	
2053	For Bright Chrome Plated Finish Add		5.01	
2082	For Brass Finish Add		9.52	
2144	For Stainless Steel Finish, Add		2.50	
2560	Brass Door Holder, Plunger Type Type L11391	EA	37.27	3.36
2051	For Satin Brass Plated Clear Coated Finish Deduct		-4.92	
2052	For Primed For Paint Finish Deduct		-5.79	
2053	For Bright Chrome Plated Finish Add		5.79	
2144	For Stainless Steel Finish, Add		2.90	
3000	Doorstops, holder, electro-magnetic, wall mtd, US3	EA	207.52	11.35
2051	For Satin Brass Plated Clear Coated Finish Deduct		-20.19	
2052	For Primed For Paint Finish Deduct		-23.75	
2053	For Bright Chrome Plated Finish Add		23.75	
2144	For Stainless Steel Finish, Add		11.88	
3020	Doorstops, holder, electro-magnetic, fl mtd, US3	EA	298.38	12.61
2051	For Satin Brass Plated Clear Coated Finish Deduct		-35.64	
2052	For Primed For Paint Finish Deduct		-41.93	
2053	For Bright Chrome Plated Finish Add		41.93	
2144	For Stainless Steel Finish, Add		20.96	
08713 0015	Hinges			
Note: Hardware & Specialities Meeting Bhma Specifications. For line items with no crew use 08713-8000 for installation cost.				
08713 0949	Full mortise, high frequency			
NOTE: Hinges are ball bearing type unless explicitly stated otherwise.				
0950	Hinge, full mortise, US26D, high freq, steel base, 3.5" x 3.5"	PR	27.77	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-4.72	
2052	For Primed For Paint Finish Deduct		-5.55	
2053	For Bright Chrome Plated Finish Add		5.55	
2055	For Satin Chrome Plated Finish Add		5.55	
2056	For Non-Removeable Pins, Add		2.00	
0970	Hinge, full mortise, high freq, steel base, 4" x 4", US26D	PR	29.37	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-4.99	
2052	For Primed For Paint Finish Deduct		-5.87	
2053	For Bright Chrome Plated Finish Add		5.87	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2055	For Satin Chrome Plated Finish Add		5.87	
2056	For Non-Remveable Pins, Add		2.00	
1000	Hinge, full mortise, USP, high freq, steel base, 4.5" x 4.5"	PR	47.51	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-8.08	
2052	For Primed For Paint Finish Deduct		-9.50	
2053	For Bright Chrome Plated Finish Add		9.50	
2055	For Satin Chrome Plated Finish Add		9.50	
2056	For Non-Remveable Pins, Add		2.00	
1040	Hinge, full mortise, US26D, high freq, steel base, 4.5" x 4.5"	PR	42.71	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.26	
2052	For Primed For Paint Finish Deduct		-8.54	
2053	For Bright Chrome Plated Finish Add		8.54	
2055	For Satin Chrome Plated Finish Add		8.54	
2056	For Non-Remveable Pins, Add		2.00	
1100	Hinge, full mortise, high freq, steel base, 5" x 5", USP	PR	55.04	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-9.36	
2052	For Primed For Paint Finish Deduct		-11.01	
2053	For Bright Chrome Plated Finish Add		11.01	
2055	For Satin Chrome Plated Finish Add		11.01	
2056	For Non-Remveable Pins, Add		2.00	
1140	Hinge, full mortise, high freq, steel base, 5" x 5", US26D	PR	48.36	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-8.22	
2052	For Primed For Paint Finish Deduct		-9.67	
2053	For Bright Chrome Plated Finish Add		9.67	
2055	For Satin Chrome Plated Finish Add		9.67	
2056	For Non-Remveable Pins, Add		2.00	
1390	Hinge, full mortise, 4.5"x4.5", US26D, stl base, slide in, high	PR	27.16	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-4.62	
2052	For Primed For Paint Finish Deduct		-5.43	
2053	For Bright Chrome Plated Finish Add		5.43	
2055	For Satin Chrome Plated Finish Add		5.43	
2056	For Non-Remveable Pins, Add		2.00	
1400	Hinge, full mortise, US4, high freq, brass base, 3.5" x 3.5"	PR	41.95	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.13	
2052	For Primed For Paint Finish Deduct		-8.39	
2053	For Bright Chrome Plated Finish Add		8.39	
2055	For Satin Chrome Plated Finish Add		8.39	
2056	For Non-Remveable Pins, Add		2.00	
1410	Hinge, full mortise, high freq, brass base, 4" x 4", US4	PR	42.86	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.29	
2052	For Primed For Paint Finish Deduct		-8.57	
2053	For Bright Chrome Plated Finish Add		8.57	
2055	For Satin Chrome Plated Finish Add		8.57	
2056	For Non-Remveable Pins, Add		2.00	
1420	Hinge, full mortise, US4, high freq, brass base, 4.5" x 4.5"	PR	56.19	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-9.55	
2052	For Primed For Paint Finish Deduct		-11.24	
2053	For Bright Chrome Plated Finish Add		11.24	
2055	For Satin Chrome Plated Finish Add		11.24	
2056	For Non-Remveable Pins, Add		2.00	
1500	Hinge, full mortise, high freq, brass base, 5" x 5", US10	PR	103.86	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-17.66	
2052	For Primed For Paint Finish Deduct		-20.77	
2053	For Bright Chrome Plated Finish Add		20.77	
2055	For Satin Chrome Plated Finish Add		20.77	
2056	For Non-Remveable Pins, Add		2.00	
1530	Hinge, full mortise, US4, high freq, brass base, 4.5" x 4.5"	PR	68.18	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-11.59	
2052	For Primed For Paint Finish Deduct		-13.64	
2053	For Bright Chrome Plated Finish Add		13.64	
2055	For Satin Chrome Plated Finish Add		13.64	
2056	For Non-Remveable Pins, Add		2.00	
1590	Hinge, full mortise, high freq, brass base, 5" x 4.5", US4	PR	167.54	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-28.48	
2052	For Primed For Paint Finish Deduct		-33.51	
2053	For Bright Chrome Plated Finish Add		33.51	
2055	For Satin Chrome Plated Finish Add		33.51	
2056	For Non-Remveable Pins, Add		2.00	
1790	Hinge, full mortise, 4.5"x4.5", US4, brass base, slide in, high	PR	60.97	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-10.36	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2052	For Primed For Paint Finish Deduct		-12.19	
2053	For Bright Chrome Plated Finish Add		12.19	
2055	For Satin Chrome Plated Finish Add		12.19	
2056	For Non-Removeable Pins, Add		2.00	
08713 1794	Half mortise, high frequency			
NOTE: Hinges are ball bearing type unless explicitly stated otherwise.				
1795	Hinge, half mortise, US4, high freq, brass base, 4.5" x 4.5"	PR	113.26	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-19.25	
2052	For Primed For Paint Finish Deduct		-22.65	
2053	For Bright Chrome Plated Finish Add		22.65	
2055	For Satin Chrome Plated Finish Add		22.65	
2056	For Non-Removeable Pins, Add		2.00	
08713 1949	Full mortise, low frequency			
NOTE: Hinges are plain bearing type unless explicitly stated otherwise.				
1950	Hinge, full mortise, US26D, low freq, steel base, 3.5" x 3.5"	PR	13.19	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-2.24	
2052	For Primed For Paint Finish Deduct		-2.64	
2053	For Bright Chrome Plated Finish Add		2.64	
2055	For Satin Chrome Plated Finish Add		2.64	
2056	For Non-Removeable Pins, Add		2.00	
1970	Hinge, full mortise, low freq, steel base, 4" x 4", US26D	PR	13.49	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-2.29	
2052	For Primed For Paint Finish Deduct		-2.70	
2053	For Bright Chrome Plated Finish Add		2.70	
2055	For Satin Chrome Plated Finish Add		2.70	
2056	For Non-Removeable Pins, Add		2.00	
2000	Hinge, full mortise, low freq, steel base, 4.5" x 4.5", USP	PR	14.52	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-2.47	
2052	For Primed For Paint Finish Deduct		-2.90	
2053	For Bright Chrome Plated Finish Add		2.90	
2055	For Satin Chrome Plated Finish Add		2.90	
2056	For Non-Removeable Pins, Add		2.00	
2350	Hinge, full mortise, low freq, brass base, 3.5" x 3.5", US4	PR	38.47	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-6.54	
2052	For Primed For Paint Finish Deduct		-7.69	
2053	For Bright Chrome Plated Finish Add		7.69	
2055	For Satin Chrome Plated Finish Add		7.69	
2056	For Non-Removeable Pins, Add		2.00	
2370	Hinge, full mortise, low freq, brass base, 4" x 4", US4	PR	43.86	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.46	
2052	For Primed For Paint Finish Deduct		-8.77	
2053	For Bright Chrome Plated Finish Add		8.77	
2055	For Satin Chrome Plated Finish Add		8.77	
2056	For Non-Removeable Pins, Add		2.00	
2402	Hinge, full mortise, low freq, brass base, 4.5" x 4.5", US4	PR	40.27	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-6.85	
2052	For Primed For Paint Finish Deduct		-8.05	
2053	For Bright Chrome Plated Finish Add		8.05	
2055	For Satin Chrome Plated Finish Add		8.05	
2056	For Non-Removeable Pins, Add		2.00	
08713 3000	Half surface, half mortise, average frequency			
NOTE: Hinges are ball bearing type unless explicitly stated otherwise.				
3010	Hinge, 4.5"x4.5", USP, avg freq, stl base, 1/2 surf/mort or full	PR	41.16	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.00	
2052	For Primed For Paint Finish Deduct		-8.23	
2053	For Bright Chrome Plated Finish Add		8.23	
2055	For Satin Chrome Plated Finish Add		8.23	
2056	For Non-Removeable Pins, Add		2.00	
3040	Hinge, 4.5" x 4.5", US26D, avg freq, stl, 1/2 surf/mort or full	PR	41.16	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-7.00	
2052	For Primed For Paint Finish Deduct		-8.23	
2053	For Bright Chrome Plated Finish Add		8.23	
2055	For Satin Chrome Plated Finish Add		8.23	
2056	For Non-Removeable Pins, Add		2.00	
08713 4000	Half surface, half mortise, high frequency			
NOTE: Hinges are ball bearing type unless explicitly stated otherwise.				
4010	Hinge, 4.5" x 4.5", USP, high freq, stl, 1/2 surf/mort or full	PR	89.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2051	For Satin Brass Plated Clear Coated Finish Deduct		-15.25	
2052	For Primed For Paint Finish Deduct		-17.94	
2053	For Bright Chrome Plated Finish Add		17.94	
2055	For Satin Chrome Plated Finish Add		17.94	
2056	For Non-Removeable Pins, Add		2.00	
4040	Hinge, 4.5" x 4.5", US26D, high freq, stl, 1/2 surf/mort or full	PR	91.00	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-15.47	
2052	For Primed For Paint Finish Deduct		-18.20	
2053	For Bright Chrome Plated Finish Add		18.20	
2055	For Satin Chrome Plated Finish Add		18.20	
2056	For Non-Removeable Pins, Add		2.00	
4100	Hinges, hlf surf, hlf mort or full surf, H freq, st base,	PR	114.82	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-19.52	
2052	For Primed For Paint Finish Deduct		-22.96	
2053	For Bright Chrome Plated Finish Add		22.96	
2055	For Satin Chrome Plated Finish Add		22.96	
2056	For Non-Removeable Pins, Add		2.00	
4120	Hinges, hlf surf, hlf mort or full surf, H freq, st base,	PR	81.03	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-13.78	
2052	For Primed For Paint Finish Deduct		-16.21	
2053	For Bright Chrome Plated Finish Add		16.21	
2055	For Satin Chrome Plated Finish Add		16.21	
2056	For Non-Removeable Pins, Add		2.00	
4400	Hinges, hlf surf, hlf mort/full surf, H freq, brs base,	PR	140.09	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-23.82	
2052	For Primed For Paint Finish Deduct		-28.02	
2053	For Bright Chrome Plated Finish Add		28.02	
2055	For Satin Chrome Plated Finish Add		28.02	
2056	For Non-Removeable Pins, Add		2.00	
4500	Hinges, hlf surf, hlf mort or full surf, H freq, brs base, 5"x5", us10	PR	153.43	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-26.08	
2052	For Primed For Paint Finish Deduct		-30.69	
2053	For Bright Chrome Plated Finish Add		30.69	
2055	For Satin Chrome Plated Finish Add		30.69	
2056	For Non-Removeable Pins, Add		2.00	
08713 5000 Half surface, half mortise, low frequency				
NOTE: Hinges are plain bearing type unless explicitly stated otherwise.				
5010	Hinge, 4.5" x 4.5", USP, low freq, stl, 1/2 surf/mort or full surf	PR	20.58	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-3.50	
2052	For Primed For Paint Finish Deduct		-4.12	
2053	For Bright Chrome Plated Finish Add		4.12	
2055	For Satin Chrome Plated Finish Add		4.12	
2056	For Non-Removeable Pins, Add		2.00	
5040	Hinge, 4.5" x 4.5", US26D, low freq, stl, 1/2 surf/mort or full	PR	31.14	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-5.29	
2052	For Primed For Paint Finish Deduct		-6.23	
2053	For Bright Chrome Plated Finish Add		6.23	
2055	For Satin Chrome Plated Finish Add		6.23	
2056	For Non-Removeable Pins, Add		2.00	
08713 5099 Half surface, high frequency				
NOTE: Hinges are ball bearing type unless explicitly stated otherwise.				
5100	Hinge, 1/2 surf, high freq, steel base, 4" x 4", US26D	PR	62.22	
2051	For Satin Brass Plated Clear Coated Finish Deduct		-10.58	
2052	For Primed For Paint Finish Deduct		-12.44	
2053	For Bright Chrome Plated Finish Add		12.44	
2055	For Satin Chrome Plated Finish Add		12.44	
2056	For Non-Removeable Pins, Add		2.00	
08713 6000 Door Hinges				
6010	2" Dbl Action Spring Type Hinge	PR	41.46	4.39
6020	3" Dbl Action Spring Type Hinge	PR	46.92	5.52
6030	4" Dbl Action Spring Type Hinge	PR	62.25	7.77
6040	5" Dbl Action Spring Type Hinge	PR	84.97	10.08
6050	6" Dbl Action Spring Type Hinge	PR	97.92	13.02
08713 7999 Install Hinge				
8000	Install hinge	PR	7.83	
08714 0009 Kick plate				
0010	Kick plate, 6" high, for 3' door, sst	EA	31.72	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2000	Kick plate, aluminum .050, w/3 beveled edges, 10" x 28"	EA	27.49	1.07
2100	<i>Finish hardware, kick plate, for stainless steel, add</i>		19.48	
2110	<i>Finish hardware, kick plate, for brass, add</i>		9.74	
2010	Kick plate, aluminum .050, w/3 beveled edges, 10" x 30"	EA	28.92	1.10
2100	<i>Finish hardware, kick plate, for stainless steel, add</i>		22.34	
2110	<i>Finish hardware, kick plate, for brass, add</i>		11.17	
2020	Kick plate, aluminum .050, w/3 beveled edges, 10" x 34"	EA	30.62	1.10
2100	<i>Finish hardware, kick plate, for stainless steel, add</i>		25.74	
2110	<i>Finish hardware, kick plate, for brass, add</i>		12.87	
2040	Kick plate, aluminum .050, w/3 beveled edges, 10" x 38"	EA	32.02	1.20
2100	<i>Finish hardware, kick plate, for stainless steel, add</i>		28.54	
2110	<i>Finish hardware, kick plate, for brass, add</i>		14.27	
2050	40"x34" Door Armor Plate Finish Hardware	EA	51.50	3.31
2100	<i>Finish hardware, kick plate, for stainless steel, add</i>		69.52	
2110	<i>Finish hardware, kick plate, for brass, add</i>		34.76	
08715 0010 Locksets				
Note: Brass Bolts, Brass Case, Bright Brass - Clear Coated Or Satin Chrome Plated W Brass Base - Bhma 605 Or 626 Satin Chrome Plated WBrass Base - Bhma 626				
7000	Lockset, strike plate, brass, reinf, 3" screws	EA	24.71	3.43
7010	Lockset, strike plate, brass, reinf, dustproof	EA	31.98	3.43
7020	Lockset, elec strike, bronze plating, rim mtd, w/switch,	EA	395.36	17.01
7040	Lockset, elec strike, bronze plating, mortised, w/switch,	EA	402.17	33.28
8000	Lockset, exit lock, steel, w/alarm single, US26D	EA	1,066.20	132.62
8050	Lockset, exit lock, vert rod inactive leaf, dbl, active leaf	EA	1,248.49	131.79
8500	Lockset, std duty, closet non key, cyl, w/sect trim brass	EA	139.52	4.56
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		5.31	
8520	Lockset, std duty, bath/bedrm keyed, cyl, w/sect trim brass	EA	162.95	4.99
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		6.48	
8540	Lockset, std duty, entr series, cyl, w/sect trim brass base,	EA	184.40	5.06
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		7.56	
8560	Lockset, std duty, out key, cyl, w/sect trim brass base,	EA	184.40	5.06
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		7.56	
8580	Lockset, std duty, corridor series, cyl, w/sect trim brass	EA	184.40	6.62
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		7.56	
8600	Lockset, std duty, store dr series, cyl, w/sect trim brass	EA	184.40	6.62
8650	<i>Lockset, std duty, for bright brass finish, brass base, add</i>		7.56	
8610	Deadbolt Lock, Double Key, Standard Duty	EA	57.91	7.90
8620	Deadbolt Lock, Double Key, Heavy Duty	EA	83.60	7.90
08715 8700 Locks, Cylinder, Best 1E72 or 1E74, Core Include				
8710	1 to 5 Cylinders		47.08	
8720	6 to 20 Cylinders		47.08	
8730	Over 20 Cylinders		47.08	
08715 8800 Locks, Cylinder, Itemized				
8810	Service Call		40.36	
8820	Keys		1.96	
8830	Cylinders		15.13	
08716 0010 Mortise lockset				
Note: Brass Bolts, Wrought Steel Case, 2 In Knob Satin Chrome Plated w/Brass Base - Bhma 626. SEE Section 02717 2150 for ANSI F and Series lock sets.				
3800	Mrtise lockset, cipher	EA	665.08	11.78
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		32.23	
5020	Mrtise lockset, nonkeyed pass, coml, wrt stl case, brs base,	EA	179.43	7.32
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		7.31	
5040	Mrtise lockset, bath/bedrm keyed, coml, wrt stl case, brs	EA	204.05	7.89
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		8.54	
5060	Mrtise lockset, keyed, coml, wrt stl case, brs base, entr, US26D	EA	229.73	7.35
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		9.82	
5080	Mrtise lockset, classrm out keyed, coml, wrt stl case, brs	EA	229.73	7.35
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		9.82	
5100	Mrtise lockset, keyed, coml, wrt stl case, brs base, strm, US26D	EA	229.73	7.35
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		9.82	
5120	Mrtise lockset, front dr, keyed, coml, wrt stl case, brs	EA	229.73	6.96
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		9.82	
5140	Mrtise lockset, dorm/exit, keyed, coml, wrt stl case, brs	EA	229.73	7.35
5160	<i>Mrtise lockset, std, for bright brass finish, brass base, add</i>		9.82	
08717 0009 Hasp				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0010	Hasp, steel, 3" assembly	PR	12.52	1.90
0100	Finish hardware, hasp, for stainless steel, add		2.28	
0110	Finish hardware, hasp, for brass, add		0.46	
0020	Hasp, steel, 4.5" assembly	PR	23.39	3.49
0100	Finish hardware, hasp, for stainless steel, add		2.91	
0110	Finish hardware, hasp, for brass, add		0.58	
0040	Hasp, steel, 6" assembly	PR	25.72	3.33
0100	Finish hardware, hasp, for stainless steel, add		4.42	
0110	Finish hardware, hasp, for brass, add		0.88	
08717 2150 Mortise Locks And Latchsets, Series 1000 W				
Note: Brass Bolts, Wrought Steel Case, 2 In Knob Satin Chrome Plated W/Brass Base - Bhma 626				
2151	Passage Latchset F01 for Closet Series 1000, BHMA 626	EA	125.28	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		1.84	
2152	Privacy Lockset F02, Bath/Bedroom Series 1000, BHMA 626	EA	132.13	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		1.97	
2153	Entry Lockset F04 Series 1000, BHMA 626	EA	156.79	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.47	
2154	Outside Key Operated Lockset F05 (Classroom), Series 1000, BHMA 62	EA	156.79	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.47	
2155	Lockset F07 for Storeroom Series 1000, BHMA 626	EA	156.79	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.47	
2156	Lockset F08 for Front Door Series 1000, BHMA 626	EA	165.01	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.63	
2157	Lockset F13 for Dormitory/ Exit Series 1000, BHMA 626	EA	156.79	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2161	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.47	
08717 2170 Preassembled Locks And Latches Series 2000 W				
Note: Brass Bolts, Brass Case, Bright Brass - Clear Coated Or Satin Chrome Plated W/ Brass Base - Bhma 605 Or 626				
2171	Passage Latchset F36 for Closet Series 2000, BHMA 626 or 605	EA	151.31	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2172	Privacy Lockset F37, Bath/Bedroom Series 2000, BHMA 626 or 605	EA	161.61	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2173	Entry Lockset F41 Series 2000, BHMA 626 or 605	EA	180.08	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2174	Outside Key Operated Lockset F42 (Classroom), Series 2000, BHMA 62	EA	180.08	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2175	Lockset F44 for Storeroom Series 2000, BHMA 626 or 605	EA	180.08	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
08717 2190 Bored Locks And Latches, Series 4000 Grade 1 Satin Chrome Plated W/Brass Base - Bhma 626				
2191	Passage Latchset F75 for Closet Series 4000, BHMA 626	EA	108.18	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		1.49	
2192	Privacy Lockset F76, Bath/Bedroom Series 4000, BHMA 626	EA	125.99	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		1.85	
2193	Entry Lockset F82 Series 4000, BHMA 626	EA	140.35	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.14	
2194	Outside Key Operated Lockset F84 (Classroom), Series 4000, BHMA 62	EA	140.35	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.14	
2195	Lockset F90 for Corridor Series 4000, BHMA 626	EA	140.35	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.14	
2196	Lockset F91 for Store Door Series 4000, BHMA 626	EA	140.35	5.16
2056	For Lockset/Latchset Wo Core, Core Provided By Other		-25.15	
2211	For Bright Brass, Clear Coated Finish W/Brass Base-Bhma 605,Add		2.14	
08718 0009 Panic device				
0010	Panic device for rim lock, single door, exit only	EA	383.08	26.06
2030	Panic device for satin brass finish, add		10.16	
0220	Panic device, surface vert rod w/thumb piece, brass, US26D	EA	849.42	39.17

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2030	<i>Panic device for satin brass finish, add</i>		23.49	
0500	Panic device, concealed vert rod w/lever handle, US26D, brass	EA	832.51	33.91
2030	<i>Panic device for satin brass finish, add</i>		22.98	
1100	Panic device, mortise bar, w/thumb piece, brass, US26D	EA	794.04	36.57
2030	<i>Panic device for satin brass finish, add</i>		21.82	
2020	Panic device, rim type w/thumb piece, brass, US26D	EA	697.85	43.10
2030	<i>Panic device for satin brass finish, add</i>		19.34	
08719 0010 Push-pull				
08719 0099 Push plate, aluminum				
0100	Push-pull, push plate, .050" thick, 4" x 16", aluminum	EA	25.46	3.20
0500	Push-pull, push plate, .050" thick, 4" x 16", bronze	EA	29.32	3.00
0750	Push-pull, push plate, .050" thick, 4" x 16", sst	EA	27.86	1.70
08719 0999 Pull plate, aluminum				
1000	Push-pull, pull plate, .050" thick, 4" x 16", aluminum	EA	37.83	2.43
1100	Push-pull, pull plate, .050" thick, 4" x 16", bronze	EA	47.97	4.16
1200	Push-pull, pull plate, .050" thick, 4" x 16", sst	EA	48.70	1.96
08720 0012 Special hinges				
6000	Special hinges, offset pivot hinge, top pivot, mortise	EA	105.47	11.58
7610	<i>Special hinges for satin brass finish, add</i>		1.17	
6050	Special hinges, surface mounted, offset pivot hinge, intermediat	EA	109.95	6.76
7610	<i>Special hinges for satin brass finish, add</i>		1.70	
7000	Special hinges, cement mounted, offset pivot hinge, bottom pivot	EA	211.01	24.13
7610	<i>Special hinges for satin brass finish, add</i>		2.34	
7600	Special hinges, dr coordinator, UL rated, brass, US26D	EA	94.97	7.42
08720 8000 Removal & Reinstallation Of Door Hardware Including Storage And Cleaning				
8010	Remove & Reinstall Door Lockset, Entrance	EA	25.11	
8020	Remove & Reinstall Door Lockset, Mrtise	EA	62.79	
08720 8500 Locks, Recore and Supply Two Keys				
Note: On seven pin locksets cosres cominateddb at factory, best cores 5C series 1C7				
8510	1 To 5 Cores		26.91	
8520	6 to 20 Cores		26.91	
8530	Over 20 Cores		26.91	
8540	Additional Keys For Locksets		1.96	
08722 Operators				
08726 0011 Automatic operators				
08726 1499 Pneumatic, electric eye activated				
Note: Price Includes Special Frame				
1500	Auto operators, single swing door, pneumatic, elec eye	EA	3,391.09	140.18
1550	Auto operators, double swing door, pneumatic, elec eye	PR	5,208.82	74.07
1600	Auto operators, sliding door, 3'-0" W, pneumatic, elec eye	EA	5,945.17	158.72
1650	Auto operators, bi-part door, sliding, 3'-0" W, pneumatic,	PR	8,658.82	235.20
08726 1699 Rubber mat activated				
1700	Auto operators, single swing door, pneumatic, rubber mat	EA	3,119.53	114.82
1750	Auto operators, double swing door, pneumatic, rubber mat	PR	5,654.33	249.12
1800	Auto operators, single sliding door, pneumatic, rubber mat	EA	4,913.20	29.41
1850	Auto operators, double sliding door, pneumatic, rubber mat	PR	7,952.46	60.15
1860	Auto oper, for wall button, add	EA	298.07	
1870	Auto oper, for pull cord, add	EA	265.23	
1890	Automatic opener, activating carpet, single door, one way add	EA	954.19	
08726 2000 Handicap Opener				
2010	Handicap Opener, Button Operated	EA	1,239.47	
08726 3000 Door Opener, Electric, With Remote Control Unit				
Note: Automatic Reverse, 1/2HP Mtor, Manual Control Station, Commercial Grade				
3010	For 8' High, 160Sf Door	EA	843.78	166.40
3020	For 9' High, 200Sf Door	EA	866.99	166.40
3030	For 10' High, 240Sf Door	EA	877.30	166.40
3040	For 12' High, 280Sf Door	EA	892.78	166.40
08726 5000 Electric-Mechanical Door Operator, Surface Md.				
Note: Includes Operator, Header (Operator Enclosure), Door Arm And Linkage, Radar-Microwave Mtion Sensors, And Safety Sensor System				
5001	Single Swing Door, One Way	EA	4,668.38	
5002	Pair Of Swing Doors, One Way, Simltaneous	EA	7,902.12	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5003	Radar-Microwave Type Sensor (Sensor System Only)	EA	513.17	
5004	Safety Sensor System	EA	2,036.25	
08728 0009	Door closer			
08728 0009	Rack and pinion			
0010	Door closer rack & pinion	EA	152.01	
08728 1499	Concealed closers, normal use			
1500	Door closer, pivot hung, interior, head, normal use, cncl	EA	306.25	8.62
1510	Door closer, pivot hung, exterior, head, normal use, cncl	EA	306.25	7.06
1570	Door closer, offset pivot, sgl acting, intr, fl, norm use, cncl	EA	531.21	24.73
1590	Door closer, sgl acting, ext, fl, offset pivot, norm use, cncl	EA	531.21	23.23
08728 7999	Surface mounted, standard duty			
8000	Door closer, traditional, std duty, parrallel arm primed,	EA	148.21	7.12
8050	Door closer, traditional, hvy duty, parrallel arm primed,	EA	160.54	7.75
8100	Door closer, std duty, parrallel arm modern, surf mtd	EA	157.18	11.18
8150	Door closer, heavy duty, parrallel arm modern, surf mtd	EA	165.41	11.08
08729	Weatherstripping/Seals			
08730 0010	Astragals			
7000	Astragals, 1 piece overlapping, al, 13 ga x 1.75"	LF	6.31	0.97
7100	Astragals, 1 piece overlapping, oak, 5/8" x 1-3/8"	LF	7.63	1.30
08732 0009	Threshold			
08732 0009	Aluminum			
0010	Threshold, 3' long door saddles, aluminum	LF	9.19	1.43
0200	Threshold, built up or complex	LF	43.68	2.99
0250	Threshold, grit type	LF	39.67	3.43
08732 0499	Bronze			
0500	Threshold, bronze	LF	33.78	3.70
08732 0999	Steel			
1000	Threshold, steel	LF	56.58	4.16
08732 1099	Interlocking threshold			
1100	Threshold, interlocking threshold	LF	30.75	2.56
08734 0011	Weatherstripping			
08734 1700	Wood frame			
1800	Weatherstripping, 3' x 7' door, wood frame, spring type, bronze	OPN	51.20	9.85
2500	Weatherstripping for stainless steel, spring type, add		21.51	
08734 2200	Metal frame			
2300	Weatherstripping, 3' x 7' door, metal frame, spring type, bronze	OPN	115.39	17.34
2500	Weatherstripping for stainless steel, spring type, add		35.43	
08734 3299	Sponge type with adhesive backing			
3300	Weatherstripping, sponge type w/adhesive backing	OPN	16.47	2.40
08734 3399	Stainless steel with neoprene bulb			
3400	Weatherstripping, sst w/neoprene bulb, for 3' x 7' door	LF	6.05	1.37
3450	Weatherstripping, bottom surface mounted w/vinyl bulb, stainless	LF	10.43	1.83
08750	Door/Window Accessories			
08754 0010	Door accessories			
08754 2000	Vinyl - Acrylic Frame Protectors			
2001	.060" Thick Frame Protector W C utouts	EA	12.39	
08754 4499	Rubber door silencers			
4500	Door accessories, rubber door silencers	EA	0.58	0.13
08755 1000	Clear Tempered Glass,			
Note: With Anodized Aluminum Frame Or Stained Wood Frame.				
1001	1/4" Thk, 20"x36" Vision Glass	EA	90.27	
1002	1/4" Thk, 24"x36" Vision Glass	EA	92.37	
1003	3/16" Thk, 20"x36" Vision Glass	EA	95.30	
1004	3/16" Thk, 24"x36" Vision Glass	EA	101.22	

08800 Glazing

Note: Incl. Neoprene Setting Blocks And Spacers And Elastomeric Sealants

08801 Fire Rated Glazing

08801 1000 Fire Rated Glazing

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1001	20 Mn. Rated Glazing	SF	56.61	
1002	45 Mn. Rated Glazing	SF	108.03	
1003	60 Mn. Rated Glazing	SF	210.85	
1004	90 Mn. Rated Glazing	SF	262.26	

08802 Glass

Includes Filler Strip, Caulking And Gasket Seals.

08818 0009 Float glass

Note: Includes Block, Spacer, Sealant. Coating WApplied 1 In Fiberglass Insul WALuminum Foil Backing 1/4 Or 5/16 In Thick

0010	Float glass, 3/16" thick, plain, clear	SF	7.58	0.76
0200	Float glass, 3/16" thick, tempered, clear	SF	8.09	0.76
0300	Float glass, 3/16" thick, tempered, tinted	SF	9.28	0.76
0600	Float glass, 1/4" thick, plain, clear	SF	8.51	0.72
0800	Float glass, 1/4" thick, tempered, clear	SF	9.01	0.83
0900	Float glass, 1/4" thick, tempered, tinted	SF	11.28	0.83
1000	5/16" Thk Clear Float Glass	SF	14.46	0.87
1600	Float glass, 3/8" thick, plain, clear	SF	14.07	1.79
1800	Float glass, 3/8" thick, tempered, clear	SF	16.54	1.79
1900	Float glass, 3/8" thick, tempered, tinted	SF	19.68	1.79
2200	Float glass, 1/2" thick, plain, clear	SF	22.82	1.86
2400	Float glass, 1/2" thick, tempered, clear	SF	24.75	2.24
2500	Float glass, 1/2" thick, tempered, tinted	SF	28.52	2.41
2506	1" Thk Clear Float Glass w/ Blocks, Spacers, & Sealants	SF	55.38	3.05
2508	3/4" Thk Clear Float Glass	SF	40.15	2.25
2510	5/8" Thk Clear Float Glass	SF	33.24	1.98
4100	Float glass, single lite 1/4", clear tempered w/reflective	SF	22.33	1.48
4110	Float glass, single lite 1/4", tinted tempered w/reflective	SF	22.33	1.34
4300	Float glass, 1/4" thk, under 20, 000 SF, ml, ctd, w/ 1" thk fbgl	SF	34.95	2.14
4310	Float glass, 1/4" thk, over 20, 000 SF, ml, ctd, w/ 1" thk fbgl	SF	39.43	2.96

08820 0009 Full vision

Note: 3/4 In Glass Mills Annealed Float Glass (Suspended Glazing WSilicone Struct. Seal)

0010	Full vision, w/ 3/4" glass mullions, 10' high, window	SF	45.22	3.47
0150	Full vision, w/ 3/4" glass mullions, 10-20' high, window sys	SF	52.61	2.91

08832 0010 Insulating glass (Annealed Or Tempered) WReflective Coating

0020	Insul glass, 2 lites, clear, 1/8" float, 1/2" thk, under 15	SF	11.54	0.72
0100	Insul glass, 2 lites, tinted, 1/8" float, 1/2" thk, under 15	SF	14.35	0.79
0150	Insul glass, 2 lites, 3/8" clear, glass sealed edges	SF	16.22	0.96
0210	Insul glass, 2 lites, 30-50 SF, 3/16" float, 5/8" thk unit	SF	16.24	1.10
0220	Insul glass, 2 lites, 30-50 SF, tinted, 3/16" float, 5/8" thk	SF	19.09	1.38
0230	Insul glass, 2 lites, 25-30 SF, 3/16" float, 7/8" thk unit	SF	16.85	1.34
0240	Insul glass, 2 lites, 1/4" float, 3/4" thk unit	SF	15.95	1.24
0400	Insul glass, 1" thk, clear, dbl glazed, 1/4" float, 30-70 SF	SF	16.34	0.96
0650	Insul glass, 2 lites, 30-50 SF, 1/4" float, 1" thk unit, tinted	SF	19.93	1.41
0670	Insul glass, 2 lites, 1/4" wire, 1/4" clear, for 1" unit	SF	33.85	2.69
0700	Insul glass, 1" T, 1/4" tempered, dbl glazed, 1/4" float	SF	21.67	1.55
0800	Insul glass, 1" T, 1/4" tempered, dbl glazed, 1/4" wire	SF	27.81	2.03
2300	Insul glass, 1-1/16" tinted, temp, w/1/2" air space	SF	30.65	2.69

08836 0009 Laminated glass

0010	Laminated, clear float, .03" vinyl, 1/4" T	SF	12.86	1.24
0020	Laminated, dbl coated, clear float, .03" vinyl, 1/4" T, temp	SF	33.54	2.79
0210	Laminated, SL 20 SF, clear float, .06" vinyl, 1/2" T	SF	37.51	2.89
0220	Laminated, SL 20 SF, tinted, clear float, .06" vinyl, 1/2" T	SF	45.12	3.21
0230	Laminated, 20-50 SF, clear float, .06" vinyl, 1/2" T	SF	38.40	2.90
0240	Laminated, 20-50 SF, tinted, clear float, .06" vinyl, 1/2" T	SF	45.12	3.21
2000	Laminated, to 15 SF, bullet-resisting, 1-3/16" T	SF	67.34	5.82
2100	Laminated, >15 SF, bullet-resisting, 1-3/16" T	SF	63.24	6.41
2200	Laminated, to 15 SF, bullet-resisting, 2" T	SF	128.01	9.68
2300	Laminated, >15 SF, bullet-resisting, 2" T	SF	122.40	9.20

08844 0010 Mrrors

0105	Mrrors, no fr, polished edge to 15 SF, wall type, 1/4" plate	SF	9.99	0.83
0107	Mrrors, no fr, polished edge > 15 SF, wall type, 1/4" plate	SF	8.96	0.55
0500	Mrrors, no fr, door type, 1/4" plate glass, up to 12 SF	SF	9.17	0.59
0520	Mrrors, no fr, door type, 1/4" plate glass, over 12 SF	SF	8.96	0.59
1000	Mrrors, float, up to 10 SF, 1/8" thick	SF	6.81	0.52

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1100	Mirrors, float, up to 10 SF, 3/16" thick	SF	7.59	0.52
1500	Mirrors, float, clear, 12" x 12" wall tiles, square edge	SF	4.26	0.41
1600	Mirrors, float, veined, 12" x 12" wall tiles, square edge	SF	6.48	0.55
2000	Mirrors, float, one way transparent, 1/4" thick, stock	SF	16.85	0.79
08844 3000	Removal & Reinstallation Of Plate Mirror Glass			
	Note: Including Storage, Cleaning And Msc. Supply Materials			
3005	Mirrors, 1/4" Plate W Backing & Stainless Steel Frame.	SF	14.48	
3010	Remove & Reinstall Mirror Unframed	SF	6.56	
08852 0009	Patterned glass			
0010	Patterned glass, colored, 1/8" thick, minimum	SF	10.11	0.76
0300	Patterned glass, colored, 7/32" thick, minimum	SF	11.88	1.21
08855 0009	Plate glass			
0010	Plate glass, twin ground, polished, tinted, 3/16" thick	SF	8.59	0.65
0100	Plate glass, twin ground, polished, tinted, 1/4" thick	SF	10.07	0.69
0200	Plate glass, twin ground, polished, tinted, 3/8" thick	SF	16.48	1.10
0300	Plate glass, twin ground, polished, tinted, 1/2" thick	SF	27.23	2.00
08862 0009	Safety glass			
0010	Safety glass, 1/8" thick, up to 15 SF sheet, clear tempered	SF	7.65	0.55
0020	Safety glass, 3/16 " thick, over 15 SF sheet, clear tempered	SF	9.04	0.52
08872 0009	Spandrel glass			
08872 0009	Glass			
0010	Spandrel glass, 1/4" thick, std colors, up to 1,000 SF	SF	14.54	1.00
0300	Spandrel panels, for custom colors, add		0.95	
0200	Spandrel glass, 1/4" thick, std colors, 1,000 to 2,000 SF	SF	13.56	1.07
0300	Spandrel panels, for custom colors, add		0.90	
0250	Spandrel glass, 1/4" thick, std colors, over 20,000 SF	SF	14.21	1.03
0300	Spandrel panels, for custom colors, add		0.84	
0400	1/4"Spandrel Glass, 3/4-7/8"Insul <20000 SF(1859M2), Cem Asb Backe	SF	16.40	1.04
0300	Spandrel panels, for custom colors, add		1.06	
0410	1/4"Spandrel Glass, 3/4-7/8"Insul >20000 SF(1859M2), Cem Asb Backe	SF	14.27	1.04
0300	Spandrel panels, for custom colors, add		0.85	
08872 2001	Panel Aluminum Foil Vapor Barrier			
2010	Spandrel gl, < 20000 SF, panel, insul, w/al backed fbgl, 1" T	SF	16.45	0.96
2020	Spandrel gl, > 20000 SF, panel, insul, w/al backed fbgl, 1" T	SF	15.95	1.10
2600	Spandrel glass, panel, 3/4" insul, 24 ga steel interfacing	SF	18.97	0.90
2610	Spandrel glass, panel, 3/4" insul, 16 ga steel interfacing	SF	19.81	1.21
4000	Spandrel glass, temp monolithic w/reflective coating, 1/4" T,	SF	28.22	1.76
08876 0009	Window glass			
0010	Window gl, clear float, stops, putty bed, 1/8" thick	SF	3.95	0.59
0020	Window gl, clear float, to 12 SF, stops, putty bed, 1/8" T	SF	5.97	0.59
0500	Window gl, clear float, stops, putty bed, 3/16" thick	SF	4.57	0.66
0510	Window gl, clear float, 12-35 SF, stops, putty bed, 3/16" T	SF	7.64	0.65
08884 0009	Wire glass			
0010	Wire glass 1/4" thick, rough obscure (chicken wire)	SF	13.58	1.34
1000	Wire glass, polished wire, 1/4" thick, diamond, clear	SF	16.32	0.86
08885 0009	Lead Glass			
1000	Lead Glass, 1/4" Thick	SF	188.70	
2000	Hollow Metal Frame w/ 1/16" Lead & Voice Passage Slot.	LF	51.27	
08894	Acrylic Thermoplastic			
08894 1000	Clear Acrylic Thermoplastic			
1001	.187" Thick Clear Acrylic	SF	8.52	2.05
1002	.250" Thick Clear Acrylic	SF	11.46	2.25
1003	.312" Thick Clear Acrylic	SF	14.21	2.81
1004	.375" Thick Clear Acrylic	SF	17.65	3.75
1005	.500" Thick Clear Acrylic	SF	27.37	5.13
1006	.750" Thick Clear Acrylic	SF	41.97	6.86
08895	Glazing Accessories			
08895 0009	Glazing gaskets			
08895 0009	Neoprene, for glass tongued mullion			
	Note: (Tongued Section Or Tongued Mullin) For Glass Sizes Listed			
0010	Glazing gaskets, neoprene, for 1/4" glass tongued mullion	LF	3.01	0.62

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0020	Glazing gaskets, neoprene, for 3/8" glass tongued mullion	LF	3.02	0.62
0040	Glazing gaskets, neoprene, for 1/2" glass tongued mullion	LF	3.03	0.62
0060	Glazing gaskets, neoprene, for 3/4" glass tongued mullion	LF	3.34	0.65
0080	Glazing gaskets, neoprene, for 1" glass tongued mullion	LF	3.36	0.62
08896 1000	Glazing Film			
	Note: Installed On New Or Existing			
1001	Bullet Retention Film	SF	2.05	
08900	Glazed Curtain Walls			
08920	Glazed Curtain Wall			
	Note: The Prices Are Based On Stock Shapes Of Anodized Aluminum Plain Color And Of .125 Thickness.			
08924 0010	Tube framing			
08924 5299	Plain tube frame			
5300	Tube fr, wdo wall/store front, 2"x3" jamb, al, stk, mill fin,	LF	21.61	0.69
8000	Tube framing, al, for bronze anodized aluminum add		2.52	
8020	Tube framing, al, for black finish, add		4.54	
8050	Tube framing, al, for stainless steel materials, add		58.87	
8100	Tube framing, al, for monumental grade, add		8.41	
5310	Tube fr, wdo wall/store front, 2"x4" jamb, al, stk, mill fin,	LF	23.85	0.93
8000	Tube framing, al, for bronze anodized aluminum add		2.86	
8020	Tube framing, al, for black finish, add		5.15	
8050	Tube framing, al, for stainless steel materials, add		66.71	
8100	Tube framing, al, for monumental grade, add		9.53	
5320	Tube fr, wdo wall/store front, 3"x5.5"jamb, al, stk, mill fin,	LF	27.57	0.90
8000	Tube framing, al, for bronze anodized aluminum add		3.36	
8020	Tube framing, al, for black finish, add		6.05	
8050	Tube framing, al, for stainless steel materials, add		78.47	
8100	Tube framing, al, for monumental grade, add		11.21	
5330	Tube fr for window wall/store front, head, 2" x 3"	LF	19.58	0.66
8000	Tube framing, al, for bronze anodized aluminum add		2.52	
8020	Tube framing, al, for black finish, add		4.54	
8050	Tube framing, al, for stainless steel materials, add		58.87	
8100	Tube framing, al, for monumental grade, add		8.41	
5340	Tube fr for window wall/store front, mullion, 2" x 3"	LF	19.58	0.66
8000	Tube framing, al, for bronze anodized aluminum add		2.52	
8020	Tube framing, al, for black finish, add		4.54	
8050	Tube framing, al, for stainless steel materials, add		58.87	
8100	Tube framing, al, for monumental grade, add		8.41	
5350	Tube fr for window wall/store front, mullion, 2" x 4"	LF	23.85	0.93
8000	Tube framing, al, for bronze anodized aluminum add		2.86	
8020	Tube framing, al, for black finish, add		5.15	
8050	Tube framing, al, for stainless steel materials, add		66.71	
8100	Tube framing, al, for monumental grade, add		9.53	
5360	Tube fr for window wall/store front, mullion, 3" x 5.5"	LF	27.57	0.90
8000	Tube framing, al, for bronze anodized aluminum add		3.36	
8020	Tube framing, al, for black finish, add		6.05	
8050	Tube framing, al, for stainless steel materials, add		78.47	
8100	Tube framing, al, for monumental grade, add		11.21	
5370	Tube fr for window wall/store front, 4" corner mullion	LF	39.76	0.97
8000	Tube framing, al, for bronze anodized aluminum add		5.04	
8020	Tube framing, al, for black finish, add		9.08	
8050	Tube framing, al, for stainless steel materials, add		117.71	
8100	Tube framing, al, for monumental grade, add		16.82	
5380	Tube fr for window wall/store front, horizontal, 2" x 3"	LF	23.85	0.93
8000	Tube framing, al, for bronze anodized aluminum add		2.86	
8020	Tube framing, al, for black finish, add		5.15	
8050	Tube framing, al, for stainless steel materials, add		66.71	
8100	Tube framing, al, for monumental grade, add		9.53	
5390	Tube fr for window wall/store front, horizontal, 3" x 5.5"	LF	27.57	0.90
8000	Tube framing, al, for bronze anodized aluminum add		3.36	
8020	Tube framing, al, for black finish, add		6.05	
8050	Tube framing, al, for stainless steel materials, add		78.47	
8100	Tube framing, al, for monumental grade, add		11.21	
5430	Tube fr for window wall/store front, 1/8" x 6", sill section	LF	32.18	1.52
8000	Tube framing, al, for bronze anodized aluminum add		4.20	
8020	Tube framing, al, for black finish, add		7.57	
8050	Tube framing, al, for stainless steel materials, add		98.11	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8100	Tube framing, al, for monumental grade, add		14.02	
5440	Tube fr for window wall/store front, 1/8" x 7", sill section	LF	37.78	1.79
8000	Tube framing, al, for bronze anodized aluminum add		5.04	
8020	Tube framing, al, for black finish, add		9.08	
8050	Tube framing, al, for stainless steel materials, add		117.71	
8100	Tube framing, al, for monumental grade, add		16.82	
5450	Tube fr for window wall/store front, 1/8" x 8.5", sill section	LF	43.39	1.79
8000	Tube framing, al, for bronze anodized aluminum add		5.89	
8020	Tube framing, al, for black finish, add		10.59	
8050	Tube framing, al, for stainless steel materials, add		137.34	
8100	Tube framing, al, for monumental grade, add		19.62	
08924 5459 Column covers, aluminum				
5460	Tube framing, column covers, aluminum 1/8" x 26"	LF	60.12	2.89
8000	Tube framing, al, for bronze anodized aluminum add		7.57	
8020	Tube framing, al, for black finish, add		13.62	
8050	Tube framing, al, for stainless steel materials, add		176.58	
8100	Tube framing, al, for monumental grade, add		25.23	
5470	Tube framing, column covers, aluminum 1/8" x 34"	LF	72.06	2.86
8000	Tube framing, al, for bronze anodized aluminum add		9.25	
8020	Tube framing, al, for black finish, add		16.65	
8050	Tube framing, al, for stainless steel materials, add		215.81	
8100	Tube framing, al, for monumental grade, add		30.83	
5480	Tube framing, column covers, aluminum 1/8" x 38"	LF	83.27	3.07
8000	Tube framing, al, for bronze anodized aluminum add		10.93	
8020	Tube framing, al, for black finish, add		19.67	
8050	Tube framing, al, for stainless steel materials, add		255.05	
8100	Tube framing, al, for monumental grade, add		36.44	
08924 5489 Sprandrel covers, aluminum				
Note: Where Exterior Facing Only Is Described In The Following The Interior Face Will Be Tempered Hardboard (To Be Painted)				
5490	Tube framing, sprandrel covers, aluminum both faces, 1"	SF	18.45	0.86
8000	Tube framing, al, for bronze anodized aluminum add		2.35	
8020	Tube framing, al, for black finish, add		4.24	
8050	Tube framing, al, for stainless steel materials, add		54.92	
8100	Tube framing, al, for monumental grade, add		7.85	
5500	Tube framing, sprandrel covers, aluminum both faces, 2"	SF	21.74	0.90
8000	Tube framing, al, for bronze anodized aluminum add		2.69	
8020	Tube framing, al, for black finish, add		4.84	
8050	Tube framing, al, for stainless steel materials, add		62.79	
8100	Tube framing, al, for monumental grade, add		8.97	
5510	Tube framing, sprandrel covers, intr hardboard, 1", ext face	SF	16.21	0.86
8000	Tube framing, al, for bronze anodized aluminum add		2.02	
8020	Tube framing, al, for black finish, add		3.63	
8050	Tube framing, al, for stainless steel materials, add		47.08	
8100	Tube framing, al, for monumental grade, add		6.73	
5520	Tube framing, sprandrel covers, intr hardboard, 2", ext face	SF	19.49	0.90
8000	Tube framing, al, for bronze anodized aluminum add		2.35	
8020	Tube framing, al, for black finish, add		4.24	
8050	Tube framing, al, for stainless steel materials, add		54.92	
8100	Tube framing, al, for monumental grade, add		7.85	
08924 5699 Vertical mullions				
5700	Tube framing, vertical mullions, clear finish, 1/4" glass	LF	11.69	1.96
8000	Tube framing, al, for bronze anodized aluminum add		1.60	
8020	Tube framing, al, for black finish, add		2.88	
8050	Tube framing, al, for stainless steel materials, add		37.28	
8100	Tube framing, al, for monumental grade, add		5.33	
5720	Tube framing, vertical mullions, clear finish, 3/8" glass	LF	11.89	1.55
8000	Tube framing, al, for bronze anodized aluminum add		1.60	
8020	Tube framing, al, for black finish, add		2.88	
8050	Tube framing, al, for stainless steel materials, add		37.28	
8100	Tube framing, al, for monumental grade, add		5.33	
5740	Tube framing, vertical mullions, clear finish, 1/2" glass	LF	12.42	1.24
8000	Tube framing, al, for bronze anodized aluminum add		1.66	
8020	Tube framing, al, for black finish, add		2.98	
8050	Tube framing, al, for stainless steel materials, add		38.64	
8100	Tube framing, al, for monumental grade, add		5.52	
5760	Tube framing, vertical mullions, clear finish, 3/4" glass	LF	13.09	0.93
8000	Tube framing, al, for bronze anodized aluminum add		1.72	
8020	Tube framing, al, for black finish, add		3.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8050	Tube framing, al, for stainless steel materials, add		40.22	
8100	Tube framing, al, for monumental grade, add		5.75	
5780	Tube framing, vertical mullions, clear finish, 1" glass	LF	14.11	0.83
8000	Tube framing, al, for bronze anodized aluminum add		1.85	
8020	Tube framing, al, for black finish, add		3.32	
8050	Tube framing, al, for stainless steel materials, add		43.05	
8100	Tube framing, al, for monumental grade, add		6.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
09100 Metal Support Systems				
09130 Suspension Systems				
JOC NOTE: See Sections 09512 And 09514 For Board And Tile				
09134 0010 Suspension systems				
0050	Suspension sys for board & tile, 2' x 4' grid, class A, T bar	SF	0.72	0.10
1101	For 1-1/2 Inch Carrier Channels 4 Ft (1.2M) O.C. Add Per SF		0.13	
1102	Carrier Channel For Ceilings With Recessed Light Fixtures Add		0.30	
1103	For Vertical Application, Add		0.29	
1104	For Flamproofing Add Per SF		0.07	
0300	Suspension sys for board & tile, 2' x 2' grid, class A, T bar	SF	0.88	0.13
1101	For 1-1/2 Inch Carrier Channels 4 Ft (1.2M) O.C. Add Per SF		0.13	
1102	Carrier Channel For Ceilings With Recessed Light Fixtures Add		0.30	
1103	For Vertical Application, Add		0.36	
1104	For Flamproofing Add Per SF		0.07	
0400	Suspension sys, 12" module, concealed Z bar suspension	SF	0.93	0.10
1101	For 1-1/2 Inch Carrier Channels 4 Ft (1.2M) O.C. Add Per SF		0.13	
1102	Carrier Channel For Ceilings With Recessed Light Fixtures Add		0.30	
1103	For Vertical Application, Add		0.45	
1104	For Flamproofing Add Per SF		0.07	
0500	Seismic Bracing 2.5" Compression Post With 4 Bracing Wires	EA	7.85	
09200 Lath, Plaster & Gypsum Board				
Note: All Plastering Excludes Lath, Furring Or Studs Except As Noted				
09200 Plaster Repairs				
09200 1000 Crack Repairs				
1001	Chip, Clean And Repair	LF	2.79	
09200 2000 Hble Repairs				
2001	Cut And Patch To Match Existing	SF	5.56	
09200 3000 Water Damage Repairs				
3001	Chip, Clean And Repair	SF	7.14	
09201 Furring & Lathing				
09202 0009 Accessories, plaster				
0010	Access plaster, galvanized, casing bead, expanded flange	LF	1.24	
1800	Access plaster, galv, 1 piece, exp joint, 3/4" grounds, ltd expsr	LF	1.44	0.27
2500	Access plaster, joist clips for lath, 2.5" flange	EA	0.20	
2800	Access plaster, 2.5" high, metal base, galvanized & painted	LF	1.44	0.24
2900	Access plaster, stud clips for gypsum lath, field clip	EA	0.18	
09203 0011 Furring				
09203 0011 Beams & columns				
0080	Furring, beams & columns, 25 ga, 16" OC, 7/8" channel	LF	2.01	0.81
0090	Furring, beams & columns, 25 ga, galv, 16" OC, 1-5/8" channel	LF	2.41	0.94
09203 0099 Ceilings				
0100	Furring, ceilings, 12" OC, on stl, 3/4" channels, 25 ga, galv	SF	1.25	0.49
0300	Furring, ceilings, 16" OC, on stl, 3/4" channels, 25 ga, galv	SF	0.93	0.35
0400	Furring, ceilings, 24" OC, on stl, 3/4" channels, 25 ga, galv	SF	0.64	0.24
0600	Furring, ceilings, 12" OC, on stl, 1.5" channels, 25 ga, galv	SF	1.45	0.27
0900	Furring, ceilings, 24" OC, on stl, 1.5" channels, 25 ga, galv	SF	0.74	0.27
09203 0999 Walls, galvanized				
1000	Furring, walls, 3/4" channels, 25 ga, galv, 12" OC	SF	1.14	0.49
1200	Furring, walls, 3/4" channels, 25 ga, galv, 16" OC	SF	1.00	0.35
1400	Furring, walls, 7/8" channels, 25 ga, galv, 16" OC	LF	2.01	0.68
1500	Furring, walls, 1.5" channels, 25 ga, galv, 12" OC	SF	1.34	0.49
1600	Furring, walls, 1.5" channels, 25 ga, galv, 16" OC	SF	1.18	0.35
2000	Furring, walls, 3-5/8" channels, 25 ga, galv, 16" OC	SF	1.07	0.35
09203 8450 Ceiling suspension system				
Note: All Suspension Systems Are Priced From 7 To 9 Ft (2.1M To 2.7M) Finished Ceiling Height And Area Where Rod Hangers Are Attached To Structure Or Metal Deck				
8500	Furring, 48" OC w/ 3/4" chan, 12" OC, 1.5" main carr, clg	SF	0.24	0.08
09204 0009 Gypsum lath				
0010	Gypsum lath, plain or perforated, nailed, 3/8" thick	SY	6.70	1.65
1700	Gypsum lath, for application to ceilings, add		1.02	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1710	Gypsum lath, for application to columns & beams, add		1.27	
1720	Gypsum lath, for galv metal lath, add		0.62	
0300	Gypsum lath, plain or perforated, 3/8" thick, clipped	SY	7.62	1.92
1700	Gypsum lath, for application to ceilings, add		1.15	
1710	Gypsum lath, for application to columns & beams, add		1.44	
1720	Gypsum lath, for galv metal lath, add		0.71	
09205 0011	Metal lath			
09205 3609	2.5 lb diamond mesh metal lath			
3610	Metal lath, 2.5 lb diamond mesh metal	SY	3.84	1.21
3620	Metal lath, 2.5 lb diamond mesh metal, on columns & beams	SY	5.62	2.00
09205 3709	2.5 lb self furring diamond mesh lath			
3710	Metal lath, 2.5 lb self furring diamond mesh, on solid surface	SY	4.26	1.35
3720	Metal lath, 2.5 lb self furring diamond mesh, on furring walls	SY	4.26	1.21
3730	Metal lath, 2.5 lb self furring diamond mesh, on columns & beams	SY	4.26	1.48
09205 4199	3.4 lb diamond painted, wired to steel framing			
4200	Metal lath, wired to steel framing, on walls, 3.4 lb	SY	5.45	
4300	Metal lath, wired to steel framing, on clg, 3.4 lb diamond	SY	6.17	1.86
4400	Metal lath, wired to steel fr, on furring wall, 3.4 lb diamond	SY	6.17	1.84
4500	Metal lath, wired to stl fr, on columns & beams, 3.4lb diamond	SY	7.97	2.84
09205 4709	3.4 lb self furring diamond mesh lath			
4710	Metal lath, on solid surface, 3.4 lb self furring diamond mesh	SY	6.53	1.97
4720	Metal lath, on furring walls, 3.4 lb self furring diamond mesh	SY	8.33	2.54
4730	Metal lath, on columns & beams, 3.4 lb self furring diamond mesh	SY	8.33	3.00
09210	Gypsum Plaster			
09211 0011	Gypsum plaster			
09211 0301	2 coats			
0302	Gypsum plaster, 2 coats, no lath incl, on walls	SF	2.15	0.64
1600	Gypsum plaster, for irregular or curved surfaces, add		0.51	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		0.85	
1800	Gypsum plaster, for columns & beams, add		0.85	
0310	Gypsum plaster, w/ sand aggregate, 2 coats, no lath	SF	2.43	1.27
1600	Gypsum plaster, for irregular or curved surfaces, add		0.57	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		0.95	
1800	Gypsum plaster, for columns & beams, add		0.95	
0320	Gypsum plaster, w/ perlite or verm 2 coats, no lath incl, on	SF	2.53	1.30
1600	Gypsum plaster, for irregular or curved surfaces, add		0.57	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		0.95	
1800	Gypsum plaster, for columns & beams, add		0.95	
09211 0902	3 coats			
0903	Gypsum plaster, 3 coats, no lath incl, on walls	SF	2.70	0.83
1600	Gypsum plaster, for irregular or curved surfaces, add		0.62	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		1.03	
1800	Gypsum plaster, for columns & beams, add		1.03	
0910	Gypsum plaster, w/ sand aggregate, 3 coats, no lath	SF	2.94	1.46
1600	Gypsum plaster, for irregular or curved surfaces, add		0.68	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		1.14	
1800	Gypsum plaster, for columns & beams, add		1.14	
0920	Gypsum plaster, w/ perlite or verm 3 coats, no lath incl, on	SF	3.07	1.53
1600	Gypsum plaster, for irregular or curved surfaces, add		0.68	
1700	Gypsum plaster, for chases, fascias, recesses & soffits, add		1.14	
1800	Gypsum plaster, for columns & beams, add		1.14	
09213 0011	Keenes cement			
0500	Keenes cement, plaster, 2 coats	SF	3.72	1.68
1600	Keenes cement, for irregular or curved surfaces, add		0.57	
1700	Keenes cement, for chases, fascias, recesses & soffits, add		0.96	
1800	Keenes cement, for columns & beams, add		0.96	
0550	Keenes cement, plaster, 3 coats	SF	4.33	1.91
1600	Keenes cement, for irregular or curved surfaces, add		0.67	
1700	Keenes cement, for chases, fascias, recesses & soffits, add		1.12	
1800	Keenes cement, for columns & beams, add		1.12	
09215 0010	Portland cement			
0050	Portland cement, plaster, 2 coats	SF	3.67	2.32
1600	Portland cement, for irregular or curved surfaces, add		0.57	
1700	Portland cement, for chases, fascias, recesses & soffits, add		0.96	
1800	Portland cement, for columns & beams, add		0.96	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0100	Portland cement, plaster, 3 coats	SF	4.31	1.66
1600	Portland cement, for irregular or curved surfaces, add		0.67	
1700	Portland cement, for chases, fascias, recesses & soffits, add		1.12	
1800	Portland cement, for columns & beams, add		1.12	

09230 Aggregate Coatings

09230 1009 Stucco

Note: Interior Or Exterior On Metal Lath, One Side Only

1010	Stucco, 3 coats, 1" thick, float finish, on metal lath	SF	6.36	2.33
1100	Stucco, 3 coats on metal lath, for color additives, add		0.15	
1110	Stucco, 3 coats on metal lath, for soffit work, add		2.78	
1120	Stucco, 3 coats on metal lath, for appl to masonry wall, deduct		-0.64	
1020	Stucco, 3 coats, 1" thick, trowel finish, on metal lath	SF	6.89	2.51
1100	Stucco, 3 coats on metal lath, for color additives, add		0.15	
1110	Stucco, 3 coats on metal lath, for soffit work, add		3.23	
1120	Stucco, 3 coats on metal lath, for appl to masonry wall, deduct		-0.69	
1030	Apply Synthetic Stucco Sys, Incl Antibacterial Fnsh Coat W/Color	SF	3.84	
1031	Synthetic Stucco Repair, 2 Coats	SF	1.88	
2001	Synthetic Stucco Repair	SF	4.18	

09232 4000 Synthetic Stucco System 2 In Thick Insulation

09232 4100 Synthetic Stucco

4101	Standard Finish Stucco	SF	14.79	
4102	Stucco (Dryvit), Painted	SF	7.75	

09260 Gypsum Board Systems

09263 0010 Drywall

09263 0149 3/8" thick, standard

0150	Gypsum plasterboard, no finish incl, on walls, std, 3/8" thk	SF	0.45	0.10
8530	Gypsum plasterboard, for fire resistant drywall, add		0.01	
8540	Gypsum plasterboard, for foil back board, add		0.05	
8550	Gypsum plasterboard, for water proof dry wall, add		0.05	
8570	Gypsum plasterboard, for installation on ceiling, add		0.03	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.18	
0260	Gypsum plasterboard, one face, on walls, two layers, 3/8" thk	SF	0.97	0.80
8530	Gypsum plasterboard, for fire resistant drywall, add		0.02	
8540	Gypsum plasterboard, for foil back board, add		0.11	
8550	Gypsum plasterboard, for water proof dry wall, add		0.09	
8570	Gypsum plasterboard, for installation on ceiling, add		0.06	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.40	

09263 0299 1/2" thick, standard

0300	Gypsum plasterboard, no finish incl, on walls, std, 1/2" thk	SF	0.45	0.10
8530	Gypsum plasterboard, for fire resistant drywall, add		0.01	
8540	Gypsum plasterboard, for foil back board, add		0.05	
8550	Gypsum plasterboard, for water proof dry wall, add		0.05	
8570	Gypsum plasterboard, for installation on ceiling, add		0.03	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.18	
0610	Gypsum plasterboard, one face, on walls, two layers, 1/2" thk	SF	0.97	0.56
8530	Gypsum plasterboard, for fire resistant drywall, add		0.02	
8540	Gypsum plasterboard, for foil back board, add		0.11	
8550	Gypsum plasterboard, for water proof dry wall, add		0.09	
8570	Gypsum plasterboard, for installation on ceiling, add		0.06	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.40	

1500	Gypsum plasterboard, no fin, on beams, columns, soffits, std,	SF	1.00	0.33
8530	Gypsum plasterboard, for fire resistant drywall, add		0.01	
8540	Gypsum plasterboard, for foil back board, add		0.06	
8550	Gypsum plasterboard, for water proof dry wall, add		0.05	
8570	Gypsum plasterboard, for installation on ceiling, add		0.08	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.51	

09263 1999 5/8" thick, standard

2000	Gypsum plasterboard, no finish incl, on walls, std, 5/8" thk	SF	0.51	0.10
8530	Gypsum plasterboard, for fire resistant drywall, add		0.01	
8540	Gypsum plasterboard, for foil back board, add		0.07	
8550	Gypsum plasterboard, for water proof dry wall, add		0.06	
8570	Gypsum plasterboard, for installation on ceiling, add		0.03	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.18	
2170	Gypsum plasterboard, one face, on walls, two layers, 5/8" thk	SF	1.10	0.36
8530	Gypsum plasterboard, for fire resistant drywall, add		0.02	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8540	Gypsum plasterboard, for foil back board, add		0.15	
8550	Gypsum plasterboard, for water proof dry wall, add		0.12	
8570	Gypsum plasterboard, for installation on ceiling, add		0.06	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.40	
09263 2309	3/8"-5/8" vinyl faced, drywall			
2310	Gypsum plasterboard, vinyl faced drywall, 3/8"-5/8" thk, on wall	SF	1.07	0.20
8530	Gypsum plasterboard, for fire resistant drywall, add		0.04	
8540	Gypsum plasterboard, for foil back board, add		0.24	
8550	Gypsum plasterboard, for water proof dry wall, add		0.20	
8570	Gypsum plasterboard, for installation on ceiling, add		0.03	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.18	
09263 2319	5/8" fire resistant vinyl faced drywall			
2320	Gypsum plasterboard, vinyl faced drywall, 5/8" FR on walls	SF	1.14	0.20
8530	Gypsum plasterboard, for fire resistant drywall, add		0.04	
8540	Gypsum plasterboard, for foil back board, add		0.26	
8550	Gypsum plasterboard, for water proof dry wall, add		0.22	
8570	Gypsum plasterboard, for installation on ceiling, add		0.03	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.18	
3500	Gypsum plasterboard, no fin, beams, columns, soffits, 5/8" FR	SF	1.07	0.37
8530	Gypsum plasterboard, for fire resistant drywall, add		0.01	
8540	Gypsum plasterboard, for foil back board, add		0.08	
8550	Gypsum plasterboard, for water proof dry wall, add		0.07	
8570	Gypsum plasterboard, for installation on ceiling, add		0.08	
8580	Gypsum plasterboard, for installation on ceiling over 8', add		0.51	
5150	Gypsum plasterboard, for thin coat plaster instead of taping,	SF	0.58	
5270	Gypsum plasterboard, for textured spray, add	SF	0.42	
5400	Gypsum plasterboard, for taping & finishing joints add	SF	0.39	
5450	Gypsum plasterboard, for resilient clips, add	M	223.49	
09263 5569	5/8", drywall, with 1/16" thick lead			
5570	Gypsum plasterboard, 5/8" w/1/16" thk lead	SF	9.47	
09263 5599	Sound deadening board			
5600	Gypsum plasterboard, sound deadening board, 1/4" thk	SF	0.48	0.13
09263 9000	Cementious			
9010	1/2" Cement Board	SF	1.29	0.30
09265 0010	Metal studs, drywall			
09265 1999	Non-load bearing			
2000	Metal studs drywall ptn, 25 ga 1-5/8" W, 16" OC, 10' H, galv,	SF	0.82	0.13
2200	Metal studs drywall ptn, 25 ga 2.5" W, 16" OC, 10' H, galv, NLB	SF	0.87	0.17
2300	Metal studs drywall ptn, 25 ga 3-5/8" W, 16" OC, 10' H, galv,	SF	0.92	0.33
2400	Metal studs drywall ptn, 25 ga 4" W, 16" OC, 10' H, galv, NLB	SF	0.95	0.36
2500	Metal studs drywall ptn, 25 ga 6" W, 16" OC, 10' H, galv, NLB	SF	1.06	0.40
09265 3999	LB studs, light gage structural			
09265 3999	18 gage studs			
4000	Metal studs drywall ptn, 16" OC, 10' H, 18 ga 2.5" W, galv, LB	SF	1.69	0.40
4200	Metal studs drywall ptn, 16" OC, 10' H, 18 ga 3-5/8" W, galv, LB	SF	1.84	0.43
4300	Metal studs drywall ptn, 16" OC, 10' H, 18 ga 4" W, galv, LB	SF	1.97	0.43
4400	Metal studs drywall ptn, 16" OC, 10' H, 18 ga 6" W, galv, LB	SF	2.22	0.46
09265 4599	16 gage studs			
4600	Metal studs drywall ptn, 16" OC, 10' H, 16 ga, 2.5" W, galv, LB	SF	1.85	0.40
4700	Metal studs drywall ptn, 16" OC, 10' H, 16 ga, 3-5/8" W, galv, L	SF	2.16	0.43
4800	Metal studs drywall ptn, 16" OC, 10' H, 16 ga, 4" W, galv, LB	SF	2.30	0.43
4900	Metal studs drywall ptn, 16" OC, 10' H, 16 ga, 6" W, galv, LB	SF	2.86	0.57
09280	Drywall Accessories			
09284 0010	Accessories, drywall			
09284 0010	Casing bead			
0011	Accessories, drywall, casing bead, galvanized steel	LF	1.11	
0200	Accessories, drywall, casing bead, zinc	LF	1.13	
09284 0299	Corner bead			
0300	Accessories, drywall, 1" x 1", corner bead, galv steel	LF	0.79	
0401	Accessories, drywall, 1.25" x 1.25", corner bead, galv steel	LF	0.90	
09284 0900	Furring channel			
0901	Accessories, drywall, 7/8" deep, std, furring channel, galv stee	LF	1.30	0.50
09300	Tile			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
09309 Sanitile For Interior Wall Systems				
09309 1000 Sanitile For Interior Wall Systems				
09309 1100 Sanitile 550 System For All Interior Wall Surface				
1101	7-9 Mls DFT-2 Coats Base, 1 Coat Finish	SF	1.73	
1102	5-7 Mls DFT-1 Coat Base, 1 Coat Finish	SF	1.46	
09309 1200 Sanitile System For All Interior Wall Surfaces				
1201	7-9 Mls DFT-2 Coats Base, 1 Coat Finish	SF	1.72	
1202	5-7 Mls DFT-1 Coat Base, 1 Coat Finish	SF	1.47	
09311 Porcelain Tile				
09311 1000 Porcelain Tile				
1001	Porcelain Tile, Various Shapes & Sizes	SF	10.68	
1002	3/4" Thk Countertop W Splash	LF	197.39	
09311 2000 4" To 12" Wide Window Sill				
2001	1/2" Thick W Front Molding	LF	46.12	
2002	3/4" Thick W Front Molding	LF	53.48	
09311 3000 1/4" Thick Veneer Panel				
3001	SF Panel, 1/4" Applied Vertically W Corner & End Molding	SF	22.54	
09312 Ceramic Tile				
09312 0011 Ceramic tile Floor Tile Includes Sealing				
09312 3109 Ceramic mosaic floor Cushion Edge Face Mounted				
3110	Ceramic tile, face mtd, 1" x 1", cem bed, cush edge, mosaic floor	SF	8.93	0.85
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.64	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		0.97	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3120	Ceramic tile, face mtd, 1" x 2", cem bed, cush edge, mosaic floor	SF	10.78	0.88
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.84	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		1.26	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3130	Ceramic tile, face mtd, 2" x 2", cem bed, cush edge, mosaic floor	SF	9.16	0.83
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.68	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		1.01	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3140	Ceramic tile, face mtd, 1" x 1", adh bed, cush edge, mosaic floor	SF	7.78	0.77
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.53	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		0.79	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3150	Ceramic tile, face mtd, 1" x 2", adh bed, cush edge, mosaic floor	SF	9.55	0.80
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.72	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		1.07	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3160	Ceramic tile, face mtd, 2" x 2", adh bed, cush edge, mosaic floor	SF	7.92	0.77
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.55	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		0.83	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3170	Ceramic tile, back mtd, 1" x 1", thin set, cush edge, mosaic	SF	8.25	0.80
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.58	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		0.86	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3180	Ceramic tile, back mtd, 1" x 2", thin set, cush edge, mosaic	SF	10.08	0.83
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.77	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		1.15	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
3190	Ceramic tile, back mtd, 2" x 2", thin set, cush edge, mosaic	SF	8.51	0.83
3230	Ceramic tile, mosaic floor, for Group 2 colors, add		0.61	
3240	Ceramic tile, mosaic floor, for Group 3 colors, add		0.92	
3250	Ceramic tile, mosaic floor, for abrasive surface, add		0.38	
09312 5899 Unglazed ceramic mosaic wall tile				
5900	Ceramic tile, thin set, 1" x 1", face mounted, unglz mosaic wall	SF	8.15	0.74
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.57	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		1.98	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		2.26	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.83	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.86	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		2.04	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5910	Ceramic tile, thin set, 1" x 2", face mounted, unglz mosaic wall	SF	9.95	0.88
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.76	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		2.64	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		3.02	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.91	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.93	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		2.49	
5920	Ceramic tile, thin set, 2" x 2", face mounted, unglz mosaic wall	SF	8.34	0.74
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.59	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		2.08	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		2.38	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.83	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.85	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		2.09	
5930	Ceramic tile, thin set, 1" x 1", back mounted, unglz mosaic wall	SF	7.57	0.68
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.51	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		1.78	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		2.03	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.80	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.83	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		1.89	
5940	Ceramic tile, thin set, 1" x 2", back mounted, unglz mosaic wall	SF	9.36	0.83
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.70	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		2.44	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		2.78	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.88	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.90	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		2.34	
5950	Ceramic tile, thin set, 2" x 2", back mounted, unglz mosaic wall	SF	7.75	0.68
5965	Ceramic tile, unglz mosaic wall, for glazed finish, add		0.54	
5970	Ceramic tile, unglz mosaic wall, for glazed mosaic, add		1.87	
5975	Ceramic tile, unglz mosaic wall, for metallic colors, add		2.14	
5980	Ceramic tile, unglz mosaic wall, for exterior wall use, add		0.80	
5985	Ceramic tile, unglz mosaic wall, for ext soffit - unglazed, add		0.82	
5990	Ceramic tile, unglz mosaic, for portland cem bed w/ wht grt, add		1.94	
09312 6119 Ceramic wall tile				
Note: Includes Trim				
6120	Ceramic tile, on PC bed, 4.25" x 4.25", unmtd cush edge, wall	SF	6.12	0.71
6130	Ceramic tile, organic adh, 4.25" x 4.25", unmtd cush edge, wall	SF	6.12	0.80
6140	Ceramic tile, on PC bed, 4.25" x 4.25", backmtd, wall tile	SF	6.17	0.83
6150	Ceramic tile, organic adh, 4.25" x 4.25", backmtd, wall tile	SF	6.17	0.86
09312 6159 Glazed ceramic base				
Note: Cost Of Base To Be Added To Floor Costs Only If Tile Wainscot Is Not Used				
6160	Ceramic tile, on PC bed, 4.25" x 4.25" w/white grout, glazed bas	LF	6.69	0.77
6170	Ceramic tile, organic adh, 4.25" x 4.25" w/white grout, glazed	LF	5.25	0.54
7200	Ceramic tile, walls, for tile set in dry mortar, add	SF	0.26	
09320 1500 Regrout Ceramic Tile				
1501	Regrout Existing Floor Tile	SF	2.32	
2401	Regrout Ceramic Wall Tile	SF	2.32	
09330 Quarry Tile				
09330 2000 Slate Tile				
2001	6"x6"x1/4", Slate Tile, Vermont, Thin Set	SF	9.35	0.94
2001	For Abrasive Surface Add Per SF		0.45	
09334 0010 Quarry tile				
Note: 3/4 In (19Mm) Portland Cement Bed - Red Colors - Flat Surfaces				
09334 0099 Base, cove or sanitary				
0100	Quarry tile, base, md set, 1/2" thick, 2" or 5" high, cove or	LF	8.17	0.60
2020	Quarry tile, for abrasive surface, add		0.38	
09334 0310 Trim bullnose, red, md set				
0605	Quarry tile, trim bullnose, red, md set, 6" x 6" x 3/4"	LF	7.46	0.48
2020	Quarry tile, for abrasive surface, add		0.38	
0620	Quarry tile, trim straight top, 5" x 6" x 1/2"	LF	7.82	0.48
2020	Quarry tile, for abrasive surface, add		0.38	
09334 0710 Floors, md set				
Note: 3/4 In (19Mm) Portland Cement Bed - Red Colors - Flat Surfaces				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	Quarry tile, fl, 4"x4"x1/2", 3/4" PC bed, 1000 SF lot, red	SF	6.48	0.46
2020	Quarry tile, for abrasive surface, add		0.38	
0900	Quarry tile, fl, 6"x6"x1/2", 3/4" PC bed, 1000 SF lot, red	SF	6.92	0.54
2020	Quarry tile, for abrasive surface, add		0.38	
0950	Quarry tile, fl, 6"x6"x3/4", 3/4" PC bed, 1000 SF lot, red	SF	7.83	0.43
2020	Quarry tile, for abrasive surface, add		0.38	
09334 1999 Walls Portland Cement Bed - Red Colors - Flat Surfaces				
2000	Quarry tile, walls, 3/4" PC bed, 4" x 4" x 1/2" thick	SF	6.82	0.54
2020	Quarry tile, for abrasive surface, add		0.38	
2010	Quarry tile, walls, 3/4" PC bed, 6" x 6" x 3/4" thick	SF	7.83	0.48
2020	Quarry tile, for abrasive surface, add		0.38	
09334 2709 Stair tread				
2710	Quarry tile, stair tread, 6" x 6" x 3/4", plain	LF	13.81	0.66
09334 3309 Window sill				
3310	Quarry tile, window sill, 6" wide, 3/4" thick	LF	9.75	0.60
09340 Marble Tile				
09340 1000 Marble Countertops, Mulded, With Splash Stock Sizes				
1001	1/2" Thick Countertop W/ Splash	LF	74.70	4.80
1002	3/4" Thick Countertop W/ Splash	LF	154.47	4.80
09380 Conductive				
09380 1000 Conductive				
1101	1"x1"x1/4", Conductive Floor Tile Unglazed Sq Edges, PC Bed	SF	9.85	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.83	
1402	For Abrasive Surface Add Per SF		0.35	
1102	1-9/16x1-9/16x1/4", Condv Fl Tile Unglazed Sq Edges, PC Bed	SF	8.91	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.82	
1402	For Abrasive Surface Add Per SF		0.35	
1201	1"x1"x1/4", Cond Dry Set Fl Tile Unglazed Sq Edges, Non-Cond Jts	SF	9.85	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.83	
1402	For Abrasive Surface Add Per SF		0.35	
1202	1-9/16x1-9/16x1/4", Condv Fl Tile Unglazed Sq Edges, Non-Cond Jts	SF	8.91	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.82	
1402	For Abrasive Surface Add Per SF		0.35	
1301	1"x1"x1/4", Cond, Epoxy Flr Tile Unglazed Sq Edges, Epoxy Bed	SF	9.85	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.83	
1402	For Abrasive Surface Add Per SF		0.35	
1302	1-9/16x1-9/16x1/4", Condv Fl Tile Unglazed Sq Edges, Epoxy Bed	SF	8.91	0.62
1401	For 2 X 2 - 16/16 Wwf In Bed Add		0.82	
1402	For Abrasive Surface Add Per SF		0.35	
09400 Terrazzo				
09410 Portland Cement Terrazzo				
09414 0010 Terrazzo, cast in place				
09414 0010 Cove base				
0011	Terrazzo CIP, cove base, 6" high	SF	20.19	0.89
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		10.10	
09414 0100 Curb				
0101	Terrazzo CIP, curb, 6" high & 6" wide	LF	47.74	7.16
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		23.87	
0300	Terrazzo, divider strip for floors, 14 ga, 1-1/4" deep, zinc	LF	1.69	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		0.85	
0400	Terrazzo, divider strip for floors, 14 ga, 1-1/4" deep,	LF	2.59	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		1.30	
0600	Terrazzo, div strp for flrs, hvy top strp 1/4" thick, 1-1/4" D,	LF	2.56	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		1.28	
0700	Terrazzo, div strp flrs, hvy top strp 1/4" thk, 1-1/4" D, galv	LF	2.56	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		1.28	
0900	Terrazzo, div strp flrs, hvy top strp 1/4" thk, 1-1/4" D, galv	LF	3.78	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		1.89	
1000	Terrazzo, div strp for flrs, vinyl plastic	LF	2.56	
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		1.28	
09414 1510 Floor				
09414 1549 Bonded to concrete				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1550	Terrazzo CIP, fl, 5/8" top, 1.75" thk, gray cem bonded to	SF	7.09	0.48
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		3.55	
1650	Terrazzo CIP, fl, 5/8" top, 1.75" thk, white cem bonded to	SF	7.41	0.51
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		3.71	
09414 1810 Not bonded				
1850	Terrazzo CIP, fl, 1/4" sand cush, 3" thk, gray cem 5/8" top, not	SF	8.16	0.45
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		4.08	
1950	Terrazzo CIP, fl, 1/4" sand cush, 3" T, wht cem, mud set, 5/8" top,	SF	8.48	0.48
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		4.24	
09414 2700 Monolithic terrazzo				
2750	Terrazzo CIP, 4' - 5' sq pnl, 1/2" thk, 3.5" base, 5/8" top,	SF	6.59	0.58
2100	Terrazzo, CIP, for Venetian terrazzo, 1" topping, add		3.30	
09414 2999 Stairs, cast in place				
3000	Terrazzo CIP, stairs, pan filled treads	LF	19.54	2.59
3300	Terrazzo, CIP, stairs, for stair landings, add to floor prices		8.52	
3100	Terrazzo CIP, stairs, treads & risers	LF	42.31	8.05
3300	Terrazzo, CIP, stairs, for stair landings, add to floor prices		18.27	
09414 3399 Stair stringers and fascia				
3400	Terrazzo CIP, stair stringers & fascia	SF	21.08	2.72
3300	Terrazzo, CIP, stairs, for stair landings, add to floor prices		8.52	
3600	Terrazzo, stair stringers & fascia, for abrasive met noses on	LF	10.34	
3700	Terrazzo, stair stringers and fascia, for abrasive surface	SF	1.68	
3900	Terrazzo, stair stringers and fascia, for raised abrasive	LF	4.21	
09414 3999 Wainscot, bonded				
4000	Terrazzo CIP, wainscot, bonded, 1.5" thk	SF	20.19	1.73
09420 Precast Terrazzo				
09421 0010 Terrazzo, precast				
09421 0010 Base and cove				
0011	Terrazzo precast, base, 6" high, straight	LF	13.81	1.55
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
0101	Terrazzo precast, base, 6" high, cove	LF	16.97	1.64
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
0301	Terrazzo precast, base, 8" high, straight	LF	15.68	1.49
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
0401	Terrazzo precast, base, 8" high, cove	LF	19.08	1.67
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
09421 0949 Curb				
0950	Terrazzo precast, curb, 6" x 6" high	LF	44.10	4.15
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
1001	Terrazzo precast, curb, 8" x 8" high	LF	52.46	4.68
1050	Terrazzo, precast base/curb, for white cement, add		0.30	
1060	Terrazzo, precast base/curb, for zinc toe strip, add		0.90	
09421 1079 Floor tiles				
1080	Terrazzo precast, 1/4" - 1/2" chips, 12" x 12", 3/16" thk,	SF	15.10	0.57
1100	Terrazzo prcst, 3/8"-1" chip, tiles, 12"x12", 3/16" T, thin set	SF	18.61	1.54
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
1150	Terrazzo precast, 9" x 9", non-slip, 1" thk, floor tiles	SF	28.56	1.57
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
1250	Terrazzo precast, 12" x 12", non-slip, 1" thk, floor tiles	SF	33.69	1.74
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
1700	Terrazzo precast, 12" x 12", non-slip, 1.5" thk, floor tiles	SF	34.97	1.54
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
1710	Terrazzo precast, 18" x 18", non-slip, 1.5" thk, floor tiles	SF	40.36	1.57
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
1720	Terrazzo precast, 24" x 24", non-slip, 1.5" thk, floor tiles	SF	37.42	1.34

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2370	Terrazzo, precast floor tiles, for white cement, add		0.42	
2380	Terrazzo, precast floor tiles, for Venetian type terrazzo, add		4.50	
09421 2410	Stair treads			
2600	Terrazzo precast, 12" wide, 1.5" thk, diamond pattern, stair	LF	45.59	1.18
2620	Terrazzo precast, 12" wide, 1.5" thk, non-slip surface, stair	LF	45.59	1.39
2701	Terrazzo precast, 12" wide, 2" thick, straight, stair treads	LF	49.34	1.77
2801	Terrazzo precast, 12" wide, 2" thick, curved, stair treads	LF	63.82	1.92
09421 3000	Stair risers			
3001	Terrazzo precast, to 6" high, vert, 1" thk, stair risers	LF	19.81	0.90
3101	Terrazzo precast, to 6" high, cove, straight sect, 1" thk,	LF	24.03	0.90
3301	Terrazzo precast, to 6" high, vertical, curved, 1" thk, stair	LF	35.36	1.02
3402	Terrazzo precast, to 6" high, cove, curved, 1" thk, stair	LF	46.41	1.24
09421 3799	Stair tread and riser			
3800	Terrazzo precast, 3/4" riser, stair tread & riser, 1.5" tread	LF	53.19	1.49
3820	Terrazzo precast, 3" tread, 1" riser, stair tread & riser	LF	66.30	1.52
4100	Terrazzo precast, 2" tread, 1" riser, curved, stair tread &	LF	67.67	1.49
4120	Terrazzo precast, 3" tread, 1" riser, curved, stair tread &	LF	82.99	1.39
09421 4200	Stair stringers			
4201	Terrazzo precast, stair stringers, notched, 1" thk	LF	48.07	2.29
4301	Terrazzo precast, stair stringers, notched, 2" thk	LF	55.90	2.20
09421 4500	Stair landings			
4501	Terrazzo precast, 1.5" thk, stair landings, structural, non-slip	SF	36.64	1.18
4601	Terrazzo precast, 3" thk, stair landings, structural, non-slip	SF	79.05	2.04
09421 4800	Wainscot			
4801	Terrazzo precast, wainscot, 1" thk, 12" x 12" tiles	SF	20.60	1.67
4905	Terrazzo precast, wainscot, 1" thk, 18" x 18" tiles	SF	31.05	2.26

09500 Acoustical Treatment & Wood Flooring

09510 Acoustical Ceilings

Note: Suspension System Is Not Included. See Section 09130 For Suspension System

09510 1000 High Impaction Ceiling Systems

1001	Polyvinyl Chloride Face Panels	SF	4.37	
1002	T - Bar System 2 Ft X 4 Ft	SF	2.21	
1003	High Impact Clips	SF	1.41	

09510 7600 Suspended Ceilings, Complete

7601	compl spnsn sys, NO carr chan, fbg l bd, 2' x4' x5/8", pl fcd	SF	1.38	
7602	compl spnsn sys, NO carr chan, fbg l bd, offices, 2' x4' x3/4"	SF	1.54	
7603	NO carr chan, mrl fiber, 15/16" Tb ar susp, 2' x2' x3/4" lay-in	SF	2.17	
7604	NO carr chan, mrl fiber, 15/16" T bar susp, 2' x4' x5/8" lay-in	SF	1.90	
7605	Suspended clg, NO carr chan, mrl fiber, 9/16" Tbar susp, 2' x2' x5/8"	SF	2.57	
7606	Suspended clg, NO carr chan, mrl fiber, 9/16" Tbar susp, 2' x4' x3/4"	SF	2.69	
7607	compl spnsn sys, NO carr chans, lu m pns, prismatic, acryl	SF	3.39	
7608	compl spnsn sys, NO carr chans, me t pan Wacst pad, st	SF	4.67	
7609	compl spnsn sys, NO carr chan, met pan Wacst pad, ptd alum	SF	7.96	
7610	compl spnsn, NO carr chan, met pan Wacst pad, alum dgrsd fin	SF	5.32	
7611	compl spnsn sys, NO carr chans, me t pan Wacst pad, SS	SF	9.37	
7612	NO carr chans, tile, z bar spnsn, 5 /8" mrl fiber tile	SF	2.11	
7613	NO carr chans, tile, z bar spnsn, 3 /4" mrl fiber tile	SF	2.24	

09511 5000 Removal & Reinstallation Of Acoustical Ceiling

Note: Panels, 2' x2' OR 2' x4'. Includes Storage And Cleaning

5001	Remove & Reinstall Acoustical Ceiling Tile & Grid, 2x2 Or 2x4	SF	0.49	
5002	Remove & Reinstall Acoustical Panels Only	SF	0.18	
5003	Remove & Reinstall Grid System Only	SF	0.30	

09512 0010 Ceiling tile

09512 0199 Fiberglass

0200	Clg tile, stpld/spnsn, fbgls, 12" x 12" x 5/8" thk	SF	0.90	0.10
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
0220	Clg tile, stpld/spnsn, fbgls, 12" x 12" x 3/4" thk	SF	2.18	0.30
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
09512 0300 Wood Fiber Acoustical Ceiling Panels				
0302	2'x2'x1/2"Wd Fib Acous Ceil Pnls	SF	1.60	0.23
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0304	2'x4'x1/2"Wd Fib Acous Ceil Pnls	SF	1.54	0.20
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0306	2'x2'x5/8"Wd Fib Acous Ceil Pnls	SF	2.05	0.23
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0308	2'x4'x5/8"Wd Fib Acous Ceil Pnls	SF	1.99	0.20
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0310	2'x2'x3/4"Wd Fib Acous Ceil Pnls	SF	2.48	0.23
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0312	2'x4'x3/4"Wd Fib Acous Ceil Pnls	SF	2.42	0.20
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0314	2'x2'x1"Wood Fib Acous Ceil Pnls	SF	1.86	0.23
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0316	2'x4'x1"Wood Fib Acous Ceil Pnls	SF	1.80	0.20
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0318	12x12"x1/2"Wood Fiber Acous Tile Ceiling Tile	SF	1.91	0.30
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0320	12x12"x3/4"Wood Fiber Acous Tile Ceiling Tile	SF	2.38	0.30
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
09512 0599 Mineral fiber				
09512 0599 Vinyl coated				
0600	Clg tile, stpld/spnsn, vinyl ctd, 5/8"thk, 12"x12"-12"x24", mml fbr	SF	1.39	0.24
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
0700	Clg tile, stpld/spnsn, vinyl ctd, 3/4"thk, 12"x12"-12"x24", mml fbr	SF	1.69	0.20
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
09512 0899 Fire rated				
0900	Clg tile, stpld/spnsn, 3/4" T, pl f, 12"x12"-12"x24", mml fbr, FR	SF	1.23	0.17
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
1000	Clg tile, stpld/spnsn, 3/4"T, plstc ctd, 12"x12"-12"x24", mml fbr, FR	SF	1.39	0.10
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	
1002	2'x2' Mn Fib Acous Ceil Pnl, W Exposed Edge Fire Rated	SF	1.75	0.20
4001	<i>For</i>		0.25	
4002	<i>For</i>		1.60	
4004	<i>For</i>		0.50	
4005	<i>For</i>		0.17	
4020	<i>Ceiling tile, stapled, for flame proofing, add</i>		0.08	
4025	<i>Ceiling tile, stapled, for sculptured 3 dimensional, add</i>		0.21	
4040	<i>Ceiling tile, stapled, for cemented, add</i>		0.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1004	2' x4' Min Fib Acous Ceil Pnl, With Exposed Edge Fire Rated	SF	1.73	0.20
4001	For		0.25	
4002	For		1.60	
4004	For		0.50	
4005	For		0.17	
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
1006	2' x2' Min Fib Acous Ceil Pnl, Dbl Exp Edge, Cross Sect Design	SF	2.51	0.20
4001	For		0.25	
4002	For		1.60	
4004	For		0.50	
4005	For		0.17	
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
09512 1199 Aluminum faced				
1200	Clg tile, stpld/spnsn, al fcd, 5/8"T, pl, 12"x12"-12"x24", mrl	SF	1.50	0.10
4001	For		0.25	
4002	For		1.60	
4004	For		0.50	
4005	For		0.17	
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
1250	Clg tile, stpld/spnsn, al fcd, 3/4"T, pl, 12"x12"-12"x24", mrl	SF	1.64	0.10
4001	For		0.25	
4002	For		1.60	
4004	For		0.50	
4005	For		0.17	
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
09512 1299 Plain faced				
1300	Clg tile, stpld/spnsn, plain fcd, 5/8" thk, 12"x12"-12"x24", mrl	SF	1.22	0.17
4001	For		0.25	
4002	For		1.60	
4004	For		0.50	
4005	For		0.17	
4020	Ceiling tile, stapled, for flame proofing, add		0.08	
4025	Ceiling tile, stapled, for sculptured 3 dimensional, add		0.21	
4040	Ceiling tile, stapled, for cemented, add		0.15	
09514 0010 Suspended acoustic ceiling boards				
09514 0199 Air distribution panels				
0200	Susp acst ceiling boards, 3/4" thk, no spnsn sys, air dist	SF	2.36	0.30
0280	Susp acst clg dist panels, no susp sys, for air control slides, add		0.12	
0290	Susp acst clg dist panels, no susp sys, for rooms under 495 SF, add		0.17	
0220	Susp acst ceiling boards, 5/8" thk, no spnsn sys, air dist	SF	1.99	0.34
0280	Susp acst clg dist panels, no susp sys, for air control slides, add		0.12	
0290	Susp acst clg dist panels, no susp sys, for rooms under 495 SF, add		0.17	
09514 0299 Fiberglass boards, film faced				
0300	Susp acst clg bds, 2' x2'-2' x4', 5/8"T, no spnsn sys, film fcd,	SF	1.01	0.17
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		0.78	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		0.32	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.23	
0400	Susp acst clg bds, 2' x2'-2' x4', 3/4"T, no spnsn sys, film fcd,	SF	1.65	0.20
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		1.63	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		0.67	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.48	
0402	2' x 2' x 3" Fbgs Acous Ceil Pnl	SF	3.16	0.20
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		2.92	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		1.19	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.86	
0404	2' x 4' x 3" Fbgs Acous Ceil Pnl	SF	3.16	0.20
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		2.92	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		1.19	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.86	
09514 0599 Fiberglass boards, glass cloth faced				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0600	Susp acst clg bds, 2' x2' -2' x4', 3/4" T, no spnsn sys, gl cloth	SF	2.40	0.20
0860	Susp acst clg bds, no susp sys, for flameproofing, add		0.08	
0865	Susp acst clg bds, no susp sys, for sculptured 3 dimensional, add		0.21	
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		2.52	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		1.03	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.75	
0700	Susp acst clg bds, 2' x2' -2' x4', 1" T, no spnsn sys, gl cloth fcd,	SF	2.66	0.20
0860	Susp acst clg bds, no susp sys, for flameproofing, add		0.08	
0865	Susp acst clg bds, no susp sys, for sculptured 3 dimensional, add		0.21	
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		2.85	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		1.16	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.84	
09514 0899 Mineral fiber boards				
0900	Susp acst clg bds, 24" x 24", 5/8" T, no spnsn sys, al fcd,	SF	6.60	1.26
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		8.32	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		3.39	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		2.46	
0930	Susp acst clg bds, 24" x 48", 5/8" T, no spnsn sys, al fcd,	SF	7.06	1.37
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		8.98	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		3.66	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		2.66	
1100	Susp acst clg bds, 24" x 48", 3/4" T, no spnsn sys, std face,	SF	1.17	0.13
1270	Susp acst clg bds, no susp sys, for aluminum faced panels, add		1.05	
1280	Susp acst clg bds, no susp sys, for vinyl faced panels, add		0.43	
1290	Susp acst clg bds, no susp sys, for fire rated panels, add		0.31	
09519 0010 Metal ceiling panels				
0100	Metal ceiling panels, (10', 12' & 16' lengths), .020" thick	SF	3.79	0.37
0300	Metal ceiling panels, for carriers, black only, add		0.49	
0310	Metal ceiling panels, for recess filler strip, add		0.19	
0320	Metal ceiling panels, for recess filler strip, custom length, add		0.31	
0150	Metal ceiling panels, custom lengths 3' -20', .020 thick	SF	3.79	0.70
0300	Metal ceiling panels, for carriers, black only, add		0.49	
0310	Metal ceiling panels, for recess filler strip, add		0.19	
0320	Metal ceiling panels, for recess filler strip, custom length, add		0.31	
0200	Metal ceiling panels, (32', 38' & 52' lengths), .025" thick	SF	4.22	0.43
0300	Metal ceiling panels, for carriers, black only, add		0.58	
0310	Metal ceiling panels, for recess filler strip, add		0.21	
0320	Metal ceiling panels, for recess filler strip, custom length, add		0.36	
0250	Metal ceiling panels, .025" thick, custom 10 SF - 65 SF	SF	4.22	0.76
0300	Metal ceiling panels, for carriers, black only, add		0.58	
0310	Metal ceiling panels, for recess filler strip, add		0.21	
0320	Metal ceiling panels, for recess filler strip, custom length, add		0.36	
09519 5000 Metal Pan Units, 24 Ga Steel				
Note: Not Including Pads				
5001	12"x12"-24Ga, Acous Mtl Pan Units	SF	3.96	0.07
5003	12"x12"- .025"Tk, Acous Alum Pan	SF	6.40	0.34
5004	12"x24"-24Ga, Acous Mtl Pan Units	SF	6.96	0.34
5005	12"x12"- .025"Tk, Acous Anod Alum Pan Units	SF	9.69	0.34
5006	12"x24"- .025"Tk, Acous Anod Alum Pan Units	SF	6.82	0.34
5007	12"x12"-24Ga, Stainless Stl Acous Pan Units	SF	16.87	0.34
5008	12"x24"-24Ga, Stainless Stl Acous Pan Units	SF	9.43	0.34
09525 Acoustical Space Units				
09526 0010 Sound absorbing panels				
0200	Snd absorb pnl, 2.25" T, mod, perf stl face, ptd, fbgls/mrnl fill, no	SF	11.32	2.46
0600	Snd absorb pnl, walls, cem fbgls, 4' x8' x1" T, w/ glass cloth face	SF	6.65	0.80
09526 1000 Acoustical Wall Panels				
1001	3/4"x30"x9' or 10' Fabrick (11 oz Per LF) Cvr'd Mn Fbr Fire Rated	SF	6.51	
09530 Acoustical Insulation				
09534 0010 Barriers				
0600	Barriers plenum prl w/joists, al foil, fbgls reinf, 1" thk	SF	1.86	0.70
0700	Barriers plenum perp to joists, al foil, fbgls reinf, 1" thk	SF	2.37	0.70
1000	Barriers plenum perp to joists, sheet lead, 1 lb, 1/64" thick	SF	3.64	
1100	Asbestos Sheet Plenum Barrier 3/ 16" Thick		4.35	0.73
1200	Sheet Lead Barrier for Plenum 1 #/SF 1/64" Thick		4.02	0.73
09538 0009 Sound attenuation				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0010	Sound attenuation, blanket, 1" thick	SF	0.53	0.13
0500	Sound attenuation, blanket, 1.5" thick	SF	0.59	0.13
1000	Sound attenuation, blanket, 2" thick	SF	0.65	0.13
1500	Sound attenuation, blanket, 3" thick	SF	0.83	0.16

09560 Wood Strip Flooring

09564 0011 Wbod

09564 0909 Resil wood gym floor

Note: All Wood Strip Flooring Is Unfinished, T&G, Laid Over Felt Underlayment Note: All Wood Parquet Floor Is Prefinished At Factory

09564 0909 Mple

0910	Wood, resil wood gym fl, 25/32" thk maple, 1 ply sub fl	SF	13.60	0.43
0920	Wood, resil wood gym fl, 25/32" thk maple, 2 ply sub fl	SF	13.91	0.30
0930	Wood, resil wd gym fl, 2 ply sub fl & stl spring sys, 25/32"thk	SF	21.20	0.57
0932	Maple, First Grade Wood Floor 25/32" x 2-1/4" Wood Strip Floor	SF	6.14	0.27
0934	Maple, Second Grade or Better 25/32" x 2-1/4" Wood Strip Floor	SF	5.51	0.27
0936	First Grade Wood Strip Floor 33/32" x 3-1/4" Wood Strip Floor	SF	7.63	0.27
0938	Second Grde Or Better Wood Floor 33/32" x 3-1/4" Wood Strip Floo	SF	7.63	0.27
0940	Resil Wood Gym Fl, 22/32"Tk Maple	SF	6.33	0.27

09564 1399 Beech or birch

1400	Wood flooring, beech/birch, second grade	SF	5.13	0.13
5100	Wood flooring, for factory finish, add		0.10	
5110	Wood flooring, for random width floor, add		0.85	
5120	Wood flooring, for simulated pegged application, add		0.18	

09564 4600 Oak, white or red

4900	Wood flooring, oak, 2.25" wide, white or red, select quartered	SF	5.19	0.27
5100	Wood flooring, for factory finish, add		0.10	
5110	Wood flooring, for random width floor, add		0.86	
5120	Wood flooring, for simulated pegged application, add		0.18	
4902	Oak, Clear Quartered Wood Floor 25/32" x 2-1/4" Wood Strip Floor	SF	6.14	0.27
5100	Wood flooring, for factory finish, add		0.10	
5110	Wood flooring, for random width floor, add		1.02	
5120	Wood flooring, for simulated pegged application, add		0.21	
4904	Oak, # 1 Common Wood Strip Floor 25/32" x 2-1/4" Wood Strip Floo	SF	4.08	0.27
5100	Wood flooring, for factory finish, add		0.10	
5110	Wood flooring, for random width floor, add		0.71	
5120	Wood flooring, for simulated pegged application, add		0.11	
4906	Oak, Prefin Prime Grade Wd Floor 25/32" x 2-1/4" Wood Strip Floo	SF	6.92	0.27
5100	Wood flooring, for factory finish, add		0.10	
5110	Wood flooring, for random width floor, add		1.14	
5120	Wood flooring, for simulated pegged application, add		0.25	

09564 5399 Parquetry, standard, oak, teak or walnut

5400	Wood flooring, parquetry, std, 5/16" thk, prefinished, oak	SF	7.83	0.33
5770	Wood flooring, parquetry, for eliminating factory finish, deduct		-0.10	
5625	Wood flooring, parquetry, std, 5/16" thk, prefinished, teak	SF	9.49	0.27
5770	Wood flooring, parquetry, for eliminating factory finish, deduct		-0.10	
5750	Wood flooring, parquetry, std, 5/16" thk, prefinished, walnut	SF	10.62	0.33
5770	Wood flooring, parquetry, for eliminating factory finish, deduct		-0.10	

09564 6000 Refinishing Wood Floors

6002	Wax and Polish Wood Floor	SF	0.75	
6004	Refinishing Wood Floors	SF	1.63	
6006	Refinishing Wood Gym Floors	SF	2.70	

09565 Wood Block Flooring

09565 0011 Wbod block flooring

0700	Wood block flooring, natural finish, 2" thick, pine	SF	5.54	0.23
0800	Wood block flooring, creosoted, industrial floor, 2" thick	SF	4.27	0.37
0850	Wood block flooring, creosoted, industrial floor, 2.5" thk	SF	5.03	0.37
0900	Wood block flooring, creosoted, industrial floor, 3" thick	SF	5.46	0.30
0904	2-1/2" Wd Block Indus Fl	SF	3.20	0.30
0906	3" Wood Block Indus Flr	SF	4.00	0.30

09600 Flooring & Carpet

09633 Cupricoxychloride Cement Flooring

09633 1000 Cupricoxychloride Cement Flooring Chemical And S

1001	Trowel Applied Seamless Flooring , 3/8" Thick	SF	8.29	
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MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
09634 Brick Flooring				
09634 0011 Flooring				
09634 0149 Clay brick floor				
0150	Flooring, clay brick floor, 8" x3.75" x 2.25"	SF	7.32	2.39
0850	Flooring, clay brick, for basketweave pattern, add		1.09	
0860	Flooring, clay brick, for herringbone pattern, add		1.09	
0250	Flooring, clay brick floor, 9" x 4.5" x 3"	SF	10.58	2.14
0850	Flooring, clay brick, for basketweave pattern, add		1.25	
0860	Flooring, clay brick, for herringbone pattern, add		1.25	
09634 0349 Unglazed clay brick floor				
0350	Flooring, unglazed clay brick floor, 8" x 4" x 3/4"	SF	12.76	5.70
0850	Flooring, clay brick, for basketweave pattern, add		1.36	
0860	Flooring, clay brick, for herringbone pattern, add		1.36	
09635 Soapstone				
09635 1000 Soapstone (Sf)				
1001	1 In-Sopastone	SF	150.34	
1002	1 1/4 In-Soapstone	SF	154.16	
1003	1 1/2 In-Soapstone	SF	168.47	
1004	1 3/4 In-Soapstone	SF	182.78	
1005	2 In-Soapstone	SF	197.12	
09635 2000 Soapstone (Ea)				
2001	2 Ft X 1 Ft 6 In Sink	EA	1,577.12	
2002	Add: For Backsplash	EA	160.27	
2003	Add: For Drainboard	EA	444.75	
2004	"Potters" Sink	EA	1,968.38	
2005	Double Bowl - "Traditional"	EA	3,572.58	
09660 Resilient Tile Flooring				
09661 0011 Resilient				
09661 0699 Vinyl plastic base				
Note: Straight And Covered Base Same Price. Includes Prefab Corners.				
09661 0699 Group 1				
0700	Resilient,1/8" vinyl plstc base, 4" H,black,russet & unber, grou	LF	1.50	0.22
0710	Resilient,1/8" vinyl plstc base, 6" H,black,russet & unber, grou	LF	1.69	0.19
09661 0719 Group 2				
0720	Resilient,1/8" vinyl plstc base, 4" H, all (except white), group	LF	1.41	0.19
0730	Resilient,1/8" vinyl plstc base, 6" H, all (except white), group	LF	1.73	0.16
09661 0739 Group 3				
0740	Resilient,1/8" vinyl plstc base, 4" H, white only, group 3	LF	1.34	0.19
0742	1/8"Vinyl Plastic Base,Gp 3, 6"H Only	LF	2.88	0.44
09661 7005 Vinyl composition tile				
7200	Resilient, vinyl composition tile, 3/32" thick, embossed	SF	1.54	0.03
7350	Resilient, vinyl composition tile, 1/8" thick, marbleized	SF	1.62	0.34
7360	Resilient, vinyl composition tile, 1/8" thick, travertine	SF	2.00	0.22
7400	Resilient, vinyl composition tile, 1/8" thick, solid	SF	2.84	0.44
7450	Resilient, vinyl tile, 1/8" thick, conductive	SF	4.81	0.28
09661 7510 Vinyl tile				
7650	Resilient, vinyl tile, 1/8" thick, solid colors	SF	6.12	0.47
7720	Resilient, vinyl tile, 1/8" thick, marbleized	SF	4.21	0.38
7730	Resilient, vinyl tile, 1/8" thick, travertine	SF	4.26	0.38
7732	Wax and Polish Tile Floor	SF	0.60	
7733	Skid Resistant Surface, 12"x12", Vinyl Floor Tile, 1/8" Thick	SF	2.96	
09661 8010 Vinyl sheet goods				
8060	Resilient, vinyl sheet goods, .070" thick	SF	4.42	0.25
8160	Resilient, vinyl sheet goods, .093" thick	SF	6.09	0.28
8180	Resilient, vinyl sheet goods, .125" thick	SF	6.33	0.37
8182	.250"Thk Vinyl Sht Goods, Backed	SF	2.17	0.09
8183	.085"Ga, Commercial Grade Sheet Vinyl Flooring, Assorted Colors	SF	1.47	0.28
8184	.188"Thk Vinyl Sht Goods, Backed	SF	1.86	0.50
8186	.085"Ga, Sheet Vinyl Flr, Vinyl Chip Pattern,No-Wax Wear Surface	SF	1.78	0.25
8188	.085"Ga, Sheet Vinyl Flooring, Inlaid, No-Wax Wear Surface	SF	2.47	0.25

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8190	Flash Cove Vinyl Sheet Flooring, Continued 6" Up Wall Surface	LF	1.45	0.12
09664 3599	Latex underlayment			
3600	Latex underlayment 1/8" thk, cementitious for resilient	SF	3.15	0.37
3602	Latex Underlay 1/4"Thk Resil Fl Cementitious Resilient Flooring	SF	2.62	0.75
09668	Seamless Resilient Flooring			
09668 1000	Seamless Resilient Flooring			
1001	1/8" Epoxy/Quartz Chips Floor	SF	7.90	
1002	1/8" Epoxy/Vinyl Chips Floor	SF	5.41	
1003	3/16" Solid Epoxy Floor	SF	6.16	
1004	3/16" Mastic/Urethane Sealer Floor	SF	4.57	
09669	Fluid Applied Resilient Flooring			
09669 1000	Fluid			
1002	Polyurethane Pour in Place, Gym Flr 1/2" Thick	SF	7.60	1.25
1003	Polyurethane Pour in Place, Outdoor for Tennis, 1/4" Thick	SF	6.14	0.62
1004	Polyurethane Pour in Place, Outdoor for Track, 3/8" Thick	SF	7.60	0.62
1005	Polyurethane Pour in Place, With Finish, 1/4" Thick	SF	6.77	0.62
1006	Polyurethane Pour in Place, With Finish, 3/8" Thick	SF	8.85	0.62
1007	Polyurethane Pour in Place, With Finish, 1/2" Thick	SF	10.10	0.62
09670	Resilient Accessories			
09671 0011	Stair treads and risers			
09671 0301	Rubber, molded tread			
09671 0899	Grip strip safety tread			
0900	Stair treads & risers, colors, 5/16", rubber, grip strip safety	LF	14.20	0.43
1000	Stair treads & risers, colors, 3/16", rubber, grip strip safety	LF	13.65	0.37
09671 1499	Nosings			
1500	Stair treads & risers, 3/16" T, 3" wide, black, rubber, nosings	LF	4.93	0.22
1600	Stair treads & risers, 3/16" T, 3" wide, colors, rubber, nosings	LF	4.88	0.15
1700	Stair treads & risers, 3/16" T, 6" wide, black, rubber, nosings	LF	5.54	0.28
1750	Stair treads & risers, 3/16" T, 6" wide, colors, rubber, nosings	LF	5.59	0.28
09671 1799	Risers			
1800	Stair treads & risers, flat, rubber, 7" high, 1/8" thk,	LF	5.00	0.22
1900	Stair treads & risers, coved, rubber, 7" high, 1/8" thk,	LF	3.78	0.15
1902	Vinyl Transition Strip, Brown Or Black	LF	1.39	0.16
1904	Rubber Safety Flooring, 3/16"Thk	SF	5.81	0.94
09672	Rubber Floor			
09672 1000	Rubber Floor			
1106	Rubber Flr Tile, 17-13/16" x 17- 13/16" x 1/8" Circular Pattern		8.82	
1107	Base, Topset Rubber, 1/8" Thk, 2 -1/2" High		1.85	
1108	Base, Topset Rubber, 1/8" Thk, 4 " High		2.13	
1109	Base, Topset Rubber, 1/8" Thk, 6 " High		2.59	
1111	Base Corner, Top Set Rubber, 1/8 " Thk, 2"-4" High		2.95	
1112	Base Corner, Top Set Rubber, 1/8 " Thk, 6" high		3.51	
09680	Carpeting Support Functions			
09680 1000	Carpeting Support Functions			
1001	Moving Furniture	SF	0.85	
1002	Moving Safes (1000 # Max)	EA	60.25	
1003	Cut Wood Doors	EA	45.19	
1004	Cut Metal Doors	EA	75.88	
09680 2000	Relocate Partitions, Modular Work Stations, Incl			
2001	Relocate Modular Work Station	EA	191.82	
09682	Sheet Carpet			
Note: Weights Shown Are Face Weight And Do Not Including Backing Or Padding				
09682 3399	Carpet			
Note: Following Tasks Are For Typical Installations And Grades Match With Project Requirements				
09682 3399	Residential			
3400	Carpet, residential, nylon 15 oz light traffic	SY	15.11	0.62
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.22	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.32	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.54	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-0.65	
5400	For Rooms of 150 Sf or Less, ADD		1.31	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.44	
3410	Carpet, residential, nylon 20 oz medium traffic	SY	15.83	0.77
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.23	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.34	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.57	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-0.69	
5400	For Rooms of 150 Sf or Less, ADD		1.31	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.44	
09682 3419	Commercial For Either Loop Or Cut Carpet.			
3420	Carpet, commercial, nylon 28 oz medium traffic	SY	22.49	0.87
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.36	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.54	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.91	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.09	
5400	For Rooms of 150 Sf or Less, ADD		1.31	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.44	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3422	Nylon 32 Oz Med Traf Comm Carpet	SY	23.39	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.33	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.49	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.81	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-0.98	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3424	Nylon 34 Oz Med Traf Comm Carpet	SY	24.32	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.34	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.52	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.86	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.03	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3430	Carpet, commercial, nylon 35 oz heavy traffic	SY	25.95	0.87
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.43	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.65	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-1.08	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.30	
5400	For Rooms of 150 Sf or Less, ADD		1.31	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.44	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3432	Nylon 36 Oz Hvy Traf Comm Carpet	SY	26.26	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.38	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.57	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-0.96	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.15	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3434	Nylon 38 Oz Hvy Traf Comm Carpet	SY	27.38	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.41	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.61	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-1.01	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.22	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3436	Nylon 40 Oz Hvy Traf Comm Carpet	SY	28.62	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.43	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.65	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-1.08	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.29	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3438	Nylon 42 Oz Hvy Traf Comm Carpet	SY	30.04	0.80
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-0.46	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-0.69	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-1.15	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-1.38	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
5600	For Manufacturer Attached Pading (Enhancer/Duraloc), Add		2.30	
3440	Wool 36 Oz Med Traf Comm Carpet	SY	72.21	0.91
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-1.30	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-1.95	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-3.26	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-3.91	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
3450	Wool 42 Oz Hvy Traf Comm Carpet	SY	96.39	0.88
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-1.79	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-2.68	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-4.46	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-5.36	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
3452	Wool 60 Oz Hvy Traf Comm Carpet VIP	SY	135.46	0.88
5000	Quantity Discount For Carpet Purchases of 2000 Sf to 4000 Sf		-2.57	
5100	Quantity Discount For Carpet Purchases of 4001 Sf to 6000 Sf		-3.85	
5200	Quantity Discount For Carpet Purchases of 6001 Sf To 9000 Sf		-6.42	
5300	Quantity Discount For Carpet Purchases Over 9000 Sf		-7.70	
5400	For Rooms of 150 Sf or Less, ADD		2.13	
5500	For Rooms Of 151 Sf to 500 Sf, ADD		0.71	
09682 3700	Carpet Base			
3710	4" Base Carpet	LF	1.36	0.28
3720	6" Base Carpet	LF	1.63	0.28
09682 4000	Removal & Reinstallation Of Carpet & Pad			
	Note: Including Storage, Cleaning And Misc. Supply Materials			
4001	Removel & Reinstall Carpet & Pad	SY	10.70	
09682 8999	Pad			
9000	Carpet, tackless, sponge rubber pad, min, stretched instl,add to	SY	4.82	0.25
9120	Carpet, tackless, foam rubber pad, 3/8"T, stretched instl,add	SY	6.27	0.31
9550	Carpet, tackless,urethane carp cush,3/8"T, stretched instl,add	SY	4.38	0.28
09691	Carpet Tile			
09691 0010	Carpet tile, tufted			
	NOTE: Includes Installtion Ny Velcro, Mastic, Tack Glue, Or Self Stick.			
1100	Carpet tile, tufted, 12"x12", 18"x18", Or 24"x24" 24 oz nylon	SY	34.05	18.87
1180	Carpet tile, tufted, 12"x12", 18"x18", or 24"x24" 35 oz nylon	SY	48.98	11.83
09699	Two Coat Epoxy System			
09699 1000	Two Coat Epoxy System			
	Note: Does Not Include Floor Prep			
1001	Under 1000 Sf		2.12	
1002	1000 Sf And Over		1.99	
09700	Special Flooring & Floor Treatment			
09720	Epoxy-Marble Flooring			
	Note: For Standard Industrial Epoxy Flooring And Chemical Resistant Epoxy Flooring, Trowel Applied.			
09721 0009	Composition flooring			
09721 0009	Acrylic			
0010	Composition flooring, acrylic, 1/4" thk	SF	4.16	1.28
0458	Resinous Flooring	SF	5.02	0.62
09721 4509	Terrazzo floor, sparkproof, conductive			
09721 4509	Epoxy system			
4510	Composition fl, epoxy sys, sparkproof, conductive, indl,	SF	6.26	0.57
4520	Composition fl, epoxy base, sparkproof, conductive, indl,	SF	7.63	0.35
4522	Epoxy Flooring Trowel Applied Mrtar Cmpd, 1/4" Heavy Duty	SF	5.04	
4524	Epoxy Flooring Trowel Applied Mrtar Cmpd,1/4", Chem Resistant	SF	7.69	
09721 4529	Polyacrylate system			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4530	Composition fl, polyacrylate sys, sparkproof, cndct, indl,	SF	4.51	0.55
4540	Composition fl, polyacrylate base, sparkproof, cndct, indl,	SF	6.45	0.37
09721 4549	Polyester system			
4550	Composition fl, polyester sys, sparkproof, conductive, indl,	SF	4.73	0.67
4560	Composition fl, polyester base, sparkproof, conductive, indl,	SF	5.75	0.43
09721 4569	Synthetic latex mastic system			
4570	Composition fl, synth latex mastic sys, spkprf, cndct, indl,	SF	5.73	0.46
4580	Composition fl, synth latex mastic base, spkprf, cndct,	SF	7.22	0.52
09721 4589	Epoxy marble floor			
4590	Composition flooring, colored quartz chips in 1/4" base, epoxy	SF	6.08	0.89
09721 4609	Chemical resistant epoxy terrazzo			
4610	Composition flooring, 1/4" thk, chemical resistant epoxy	SF	7.86	0.67
4620	Composition flooring, 3/16" thick, heavy duty, epoxy marble	SF	5.44	0.73
09721 4629	Polyurethane, pour in place			
4630	Composition flooring, gym floor, 3/8" thk, polyurethane, pour in	SF	9.06	1.01
09721 4709	Acid etching and neutralizing			
4710	Composition flooring, application only, acid etching &	SF	0.16	
09721 4719	Epoxy floor system			
09721 4719	Base coat			
4720	Composition flooring, epoxy floor sys, appl only, base coat	SF	0.16	
09721 4729	First flood coat			
4730	Composition flooring, first flood coat, epoxy floor sys,	SF	0.16	
09721 4739	Second flood coat			
4740	Composition flooring, second flood coat, epoxy floor sys,	SF	0.05	
09721 4749	First finish glaze			
4750	Composition flooring, first finish glaze, epoxy floor sys,	SF	0.04	
09721 4759	Second finish glaze			
4760	Composition flooring, second finish glaze, epoxy floor sys,	SF	0.04	
09721 4769	Third finish glaze			
4770	Composition flooring, third finish glaze, epoxy floor sys,	SF	0.04	
09721 4779	Chip coat by hand			
4780	Composition flooring, chip coat by hand, epoxy floor sys, appl	SF	0.08	
09721 4789	Sanding and wiping by machine			
4790	Composition flooring, sanding & wiping by machine, epoxy floor	SF	0.08	

09800 Special Coatings

09815 Glazed Coatings

09816 0010 Wall coatings, application only

09816 0019 Coal tar epoxy

0020	Wall ctg, appl only, brush(based on 8-10 mil) 1 coat, coal tar	SF	0.41	
0030	Wall ctg, appl only, roll (based on 8-10 mil) 1 coat, coal tar	SF	0.16	
0040	Wall ctg, appl only, spray(based on 8-10 mil) 1 coat, coal tar	SF	0.09	

09816 0049 Coal tar mastic

0050	Wall ctg, appl only, brush (based on 8-10 mil) 1 coat, coal	SF	0.51	
0060	Wall ctg, appl only, roll (based on 8-10 mil) 1 coat, coal tar	SF	0.22	
0070	Wall ctg, appl only, spray (based on 8-10 mil) 1 coat, coal	SF	0.13	

09816 0079 Elastomers & mastics

0080	Wall ctg, appl only, brush (8-10 mil) 1 coat, elastomers/mstcs	SF	0.51	
0090	Wall ctg, appl only, roll (8-10 mil) 1 coat, elastomers/mstcs	SF	0.22	
0100	Wall ctg, appl only, spray (8-10 mil)1 coat, elastomers/mstcs	SF	0.13	

09816 0109 Epoxy & other catalyzed material

0110	Wall ctg, appl only, brush (8-10 mil) 1 coat, epoxy & catalyzed	SF	0.36	
0120	Wall ctg, appl only, roll (8-10 mil) 1 coat, epoxy & catalyzed	SF	0.18	
0130	Wall ctg, appl only, spray (8-10 mil) 1 coat, epoxy & catalyzed	SF	0.13	

09850 Sprayed Seal Coating

09850 1000 Stain Sealer, Sprayed Measured By Surface Area Of Wall Or Ceiling.

1001	Areas To Receive A Final Finish	SF	0.31	
1002	Areas Of Wood Framing	SF	0.58	

09850 2000 Two Part Epoxy Paint On Floors, Walls Or Ceiling

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2001	One Full Coat, Roller Applied	SF	1.09	
2101	For Non-Skid Finish, Add		0.02	
2002	Two Full Coat, Roller Applied	SF	1.93	
2101	For Non-Skid Finish, Add		0.05	
2003	One Full Coat, Brush Applied	SF	1.09	
2101	For Non-Skid Finish, Add		0.02	
2004	Two Full Coat, Brush Applied	SF	1.93	
2101	For Non-Skid Finish, Add		0.05	
2005	One Full Coat, Spray Applied	SF	1.09	
2101	For Non-Skid Finish, Add		0.02	
2006	Two Full Coat, Spray Applied	SF	1.93	
2101	For Non-Skid Finish, Add		0.05	

09900 Painting & Wall Coverings

09901 Exterior Painting

09902 2200 Fence Painting

2201	Paint Chain Link Fence, One Coat	SF	0.77	
2202	Paint Wrought Iron Fence, One Coat	SF	0.77	

09903 0010 Structural steel, application only

0020	Structural steel, 1 ct, paint, brush, mfm & mchry, light, appl	SF	0.44	
0030	Structural steel, 1 coat, paint, brush work, heavy, appl only	SF	0.35	
0040	Structural steel, 1 coat, paint, roll, mitt/glove, appl only	SF	0.32	
0050	Structural steel, 1 coat, paint, roll, heavy size, appl only	SF	0.28	
0060	Structural steel, 1 coat, paint, spray, light size, appl only	SF	0.16	
0070	Structural steel, 1 coat, paint, spray, medium size, appl only	SF	0.18	
0080	Structural steel, 1 coat, paint, spray, mchry & eqpt, appl only	SF	0.18	
0090	Structural steel, 1 coat, paint, spray, heavy size, appl only	SF	0.18	

09903 1000 Paint Exterior Steel Pipes

1010	Paint Ext Steel Pipes Up To 4" Dia 1 Coat Primer 1 Coat Paint	LF	0.60	
1020	Paint Ext Steel Pipes 6"-8" Dia One Coat Primer One Coat Paint	LF	0.84	
1030	Paint Ext Steel Pipes 10"-12" Dia One Coat Primer One Coat Paint	LF	1.07	

09903 2000 Sandblasting

2010	Sandblasting-Brush Off Blast	SF	0.51	
2020	Sandblasting-Commercial Blast	SF	0.95	
2030	Sandblast'g-Near White Ml Blast	SF	1.87	
2040	Sandblasting-White Ml Blast	SF	2.17	

09905 0010 Vertical surfaces, application only

09905 0019 Metal siding

0020	Vert surfaces, metal siding, brush, one coat, appl only	SF	0.19	
0030	Vert surfaces, metal siding, roll, one coat, appl only	SF	0.16	
0040	Vert surfaces, metal siding, spray, one coat, appl only	SF	0.09	

09905 0044 Metal trim

0045	Vert surfaces, metal trim brush, one coat, appl only	SF	0.33	
0048	Paint Ext Msc Exposed Metal 1 Coat Primer, Brush/Roller Work	SF	0.13	

09905 0049 Concrete block

0050	Vert surfaces, conc block, brush, one coat, appl only	SF	0.33	
0060	Vert surfaces, conc block, roll, one coat, appl only	SF	0.15	
0062	Paint Ext CMU's 1 Filler, 1 Coat Paint, Brush/Roller Work	SF	0.58	
0064	Paint Ext CMU's 1 Filler, 2 Coat Paint, Brush/Roller Work	SF	0.58	
0066	Paint Ext CMU's 1 Filler, 2 Epoxy Brush/Roller Work	SF	0.58	
0070	Vert surfaces, conc block, spray, one coat, appl only	SF	0.11	

09905 0071 Pipe Rail And Ladders

0072	Paint Ext Stair Pipe Rail, 2 Rails	LF	1.31	
0073	Paint Ext Stair Hand Rail, 1 Rail	LF	0.72	
0074	Paint Ext Stair Incl Rail (To 4' W)	RSR	12.80	
0075	Paint Exterior Gratings & Frames	SF	2.69	
0076	Paint Exterior Ladders	LF	2.44	

09905 0079 Fluted masonry

0080	Vert surfaces, fluted masonry, spray, one coat, appl only	SF	0.22	
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09905 0089 Scored block & brick

0090	Vert surfaces, scored block & brick, roll, one coat, appl only	SF	0.33	
0100	Vert surfaces, scored block & brick, spray, one coat, appl	SF	0.13	

09905 0109 Block filler

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0110	Vert surfaces, block filler, brush, one coat, appl only	SF	0.51	
0120	Vert surfaces, block filler, roll, one coat, appl only	SF	0.22	
0130	Vert surfaces, block filler, spray, one coat, appl only	SF	0.13	
09905 0139	Shingles & rough siding			
0140	Vert surfaces, shingles & rough siding, brush, one coat, appl	SF	0.33	
0150	Vert surfaces, shingles & rough siding, roll, one coat, appl	SF	0.22	
0160	Vert surfaces, shingles & rough siding, spray, one coat, appl	SF	0.11	
09905 0169	Mineral fiber shingle			
0170	Vert surfaces, mineral fiber shingle, brush, one coat, appl	SF	0.28	
0180	Vert surfaces, mineral fiber shingle, roll, one coat, appl	SF	0.26	
0190	Vert surfaces, mineral fiber shingle, spray, one coat, appl	SF	0.11	
09905 0199	Shake siding			
0200	Vert surfaces, shake siding, brush, one coat, appl only	SF	0.41	
0210	Vert surfaces, shake siding, spray, one coat, appl only	SF	0.19	
09905 0219	Rustic siding and shiplap			
0220	Vert surfaces, rustic siding & shiplap, brush, one coat, appl	SF	0.26	
0230	Vert surfaces, rustic siding & shiplap, roll, one coat, appl	SF	0.22	
0240	Vert surfaces, rustic siding & shiplap, spray, one coat, appl	SF	0.11	
09905 0249	Board & batten, texture 1-11			
0250	Vert surfaces, board & batten (T 1-11), roll, one coat, appl only	SF	0.19	
0260	Vert surfaces, board & batten (T 1-11), applicator, one coat,	SF	0.16	
0270	Vert surfaces, board & batten (T 1-11), spray, one coat, appl	SF	0.09	
09905 0279	Smooth fiberwood siding			
0280	Vert surfaces, smooth fiberwood siding, roll, one coat, appl	SF	0.10	
0290	Vert surfaces, smooth fiberwood siding, spray, one coat, appl	SF	0.09	
09905 0299	Wood trim			
0300	Vert surfaces, wood trim brush, one coat, appl only	SF	0.33	
09905 0399	Tilt up/plaster walls			
0400	Vert surfaces, tilt up/plaster walls, roll, one coat, appl only	SF	0.13	
0500	Vert surfaces, tilt up/plaster walls, spray, one coat, appl	SF	0.08	
09905 0599	Stucco walls			
0600	Vert surfaces, stucco walls, roll, one coat, appl only	SF	0.15	
0700	Vert surfaces, stucco walls, spray, one coat, appl only	SF	0.09	
09905 0799	Form poured concrete wall			
0800	Vert surfaces, form poured conc wall, roll, one coat, appl only	SF	0.13	
0900	Vert surfaces, form poured conc wall, spray, one coat, appl only	SF	0.08	
0905	Paint Ext Conc 1 Filler, 1 Coat Primer, Brush/Roller	SF	0.57	
0910	Paint Ext Conc 1 Filler, 2 Coat Primer, Brush/Roller	SF	0.67	
0915	Paint Ext CMU's & Conc 1 Filler 1 Coat Primer, Brush/Roller	SF	0.58	
0920	Paint Ext CMU's & Conc 1 Filler 2 Coat Primer, Brush/Roller	SF	0.67	
09906 2000	Surface Preparation And Protective Coatings For			
09906 2100	Surface Preparation, Spsc Sp2 Or 3			
2111	Surface Prep, Type1 Str	SF	0.69	
2112	Surface Prep, Type2 Str	SF	0.67	
2113	Surface Prep, Type3 Str	SF	0.67	
2114	Surface Prep, Sm Vssl/Tank, Sp2/3	SF	0.67	
2115	Surface Prep, Lg Vssl/Tank, Sp2/3	SF	0.56	
2116	Surface Prep, Piping To 14"	SF	0.92	
09906 2200	Surface Preparation, Spsc Sp7			
2211	Surface Prep, Type1 Str Stl, Sp7	SF	0.47	
2212	Surface Prep, Type2 Str Stl, Sp7	SF	0.45	
2213	Surface Prep, Type3 Str Stl, Sp7	SF	0.41	
2214	Surface Prep, Sm Vessel/Tank, Sp7	SF	0.41	
2215	Surface Prep, Lg Vessel/Tank, Sp7	SF	0.29	
2216	Surface Prep, Piping To 14", Sp7	SF	0.55	
2217	Surface Prep, Sm Tank Int, Sp7	SF	0.55	
2218	Surface Prep, Lg Tank Int, Sp7	SF	0.43	
09906 2300	Surface Preparation, Spsc Sp6			
2311	Surface Prep, Type1 Str Stl, Sp6	SF	0.78	
2312	Surface Prep, Type2 Str Stl, Sp6	SF	0.69	
2313	Surface Prep, Type3 Str Stl, Sp6	SF	0.64	
2314	Surface Prep, Sm Vessel/Tank, Sp6	SF	0.64	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2315	Surface Prep, Lg Vessel/Tank, Sp6	SF	0.60	
2316	Surface Prep, Piping To 14", Sp6	SF	0.95	
2317	Surface Prep, Sm Tank Int, Sp6	SF	0.89	
2318	Surface Prep, Lg Tank Int, Sp6	SF	0.82	
09906 2400	Surface Preparation, Sspc Sp5			
2411	Surface Prep, Type1 Str Stl, Sp5	SF	1.49	
2412	Surface Prep, Type2 Str Stl, Sp5	SF	1.29	
2413	Surface Prep, Type3 Str Stl, Sp5	SF	1.19	
2414	Surface Prep, Sm Vessel/Tank, Sp5	SF	1.15	
2415	Surface Prep, Lg Vessel/Tank, Sp5	SF	1.09	
2416	Surface Prep, Piping To 14", Sp5	SF	1.77	
2417	Surface Prep, Sm Tank Int, Sp5	SF	1.60	
2418	Surface Prep, Lg Tank Int, Sp5	SF	1.53	
09906 2500	Surface Preparation, Sspc Sp10			
2511	Surface Prep, Type1 Str Stl, Sp10	SF	1.12	
2512	Surface Prep, Type2 Str Stl, Sp10	SF	0.96	
2513	Surface Prep, Type3 Str Stl, Sp10	SF	0.91	
2514	Surface Prep, Sm	SF	0.91	
2515	Surface Prep, Lg	SF	0.91	
2516	Surface Prep, Piping To 14", Sp10	SF	0.86	
2517	Surface Prep, Sm Tank Int, Sp10	SF	1.28	
2518	Surface Prep, Lg Tank Int, Sp10	SF	1.28	
09906 3100	Protective Coatings, Sovalex Metal Primer, Prime			
3111	Primer, Ml, Type 1 Str Stl, Spray	SF	0.34	
3112	Primer, Ml, Type 2 Str Stl, Spray	SF	0.26	
3113	Primer, Ml, Type 3 Str Stl, Spray	SF	0.23	
3114	Primer, Ml, Sm Vessel/Tank, Spray	SF	0.21	
3115	Primer, Ml, Lg Vessel/Tank, Spray	SF	0.18	
3116	Primer, Ml, Piping To 14", Spray	SF	0.41	
3117	Primer, Ml, Type 1 Str Stl, Brush	SF	0.50	
3118	Primer, Ml, Type 2 Str Stl, Brush	SF	0.38	
3119	Primer, Ml, Type 3 Str Stl, Brush	SF	0.34	
3121	Primer, Ml, Sm Vessel/Tank, Brush	SF	0.31	
3122	Primer, Ml, Lg Vessel/Tank, Brush	SF	0.27	
3123	Primer, Ml, Piping To 14", Brush	SF	0.60	
09906 3200	Protective Coatings, Alkyd Ststem Prime And Two			
3211	Paint, 2 Coat, Type 1 Str Stl, Spray	SF	1.02	
3212	Paint, 2 Coat, Type 2 Str Stl, Spray	SF	0.77	
3213	Paint, 2 Coat, Type 3 Str Stl, Spray	SF	0.71	
3214	Paint, 2 Coat, Sm Vessel/Tank, Spray	SF	0.64	
3215	Paint, 2 Coat, Lg Vessel/Tank, Spray	SF	0.52	
3216	Paint, 2 Coat, Piping To	SF	1.22	
3217	Paint, 1 Coat, Type 1 Str Stl, Spray	SF	0.77	
3218	Paint, 1 Coat, Type 2 Str Stl, Spray	SF	0.57	
3219	Paint, 1 Coat, Type 3 Str Stl, Spray	SF	0.54	
3221	Paint, 1 Coat, Sm Vessel/Tank, Spray	SF	0.48	
3222	Paint, 1 Coat, Lg Vessel/Tank, Spray	SF	0.40	
3223	Paint, 1 Coat, Piping To	SF	0.91	
3224	Paint, 2 Coat, Alum Type1 S Stl, Spray	SF	0.94	
3225	Paint, 2 Coat, Alum Type2 S Stl, Spray	SF	0.69	
3226	Paint, 2 Coat, Alum Type3 S Stl, Spray	SF	0.65	
3227	Paint, 2 Coat, Alum Sm Vsl/Tank, Spray	SF	0.58	
3228	Paint, 2 Coat, Alum Lg Vsl/Tank, Spray	SF	0.48	
3229	Paint, 2 Coat, Alum Pipe To 14", Spray	SF	1.12	
3231	Paint, 1 Coat, Alum Type1 S Stl, Spray	SF	0.71	
3232	Paint, 1 Coat, Alum Type2 S Stl, Spray	SF	0.52	
3233	Paint, 1 Coat, Alum Type3 S Stl, Spray	SF	0.50	
3234	Paint, 1 Coat, Alum Sm Vsl/Tank, Spray	SF	0.44	
3235	Paint, 1 Coat, Alum Lg Vsl/Tank, Spray	SF	0.37	
3236	Paint, 1 Coat, Alum Pipe To 14", Spray	SF	0.84	
3237	Paint, 2 Coat, Type 1 Str Stl, Brush	SF	1.63	
3238	Paint, 2 Coat, Type 2 Str Stl, Brush	SF	1.22	
3239	Paint, 2 Coat, Type 3 Str Stl, Brush	SF	1.13	
3241	Paint, 2 Coat, Sm Vessel/Tank, Brush	SF	1.02	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3242	Paint, 2 Coat, Lg Vessel/Tank, Brus h	SF	0.85	
3243	Paint, 2 Coat, Piping To	SF	1.94	
3244	Paint, 1 Coat, Type 1 Str Stl, Brus h	SF	1.22	
3245	Paint, 1 Coat, Type 2 Str Stl, Brus h	SF	0.92	
3246	Paint, 1 Coat, Type 3 Str Stl, Brus h	SF	0.85	
3247	Paint, 1 Coat, Sm Vessel/Tank, Brus h	SF	0.77	
3248	Paint, 1 Coat, Lg Vessel/Tank, Brus h	SF	0.64	
3249	Paint, 1 Coat, Piping To	SF	1.46	
3251	Paint, 2 Coat, Alum Type 1 S Stl, B rush	SF	1.50	
3252	Paint, 2 Coat, Alum Type 2 S Stl, B rush	SF	1.12	
3253	Paint, 2 Coat, Alum Type 3 S Stl, B rush	SF	1.05	
3254	Paint, 2 Coat, Alum Sm Vsl/Tank, Br ush	SF	0.94	
3255	Paint, 2 Coat, Alum Lg Vsl/Tank, Br ush	SF	0.78	
3256	Paint, 2 Coat, Alum Pipe To 14", Br ush	SF	1.79	
3257	Paint, 1 Coat, Alum Type 1 S Stl, B rush	SF	1.12	
3258	Paint, 1 Coat, Alum Type 2 S Stl, B rush	SF	0.84	
3259	Paint, 1 Coat, Alum Type 3 S Stl, B rush	SF	0.78	
3261	Paint, 1 Coat, Alum Sm Vsl/Tank, Br ush	SF	0.71	
3262	Paint, 1 Coat, Alum Lg Vsl/Tank, Br ush	SF	0.58	
3263	Paint, 1 Coat, Alum Pipe To 14", Br ush	SF	1.35	
09906 3300 Protective Coatings, Alkyd Ststem Touch-Up And				
3311	Paint, 2 Coat, Type 1 Str Stl, Spra y	SF	0.78	
3312	Paint, 2 Coat, Type 2 Str Stl, Spra y	SF	0.65	
3313	Paint, 2 Coat, Type 3 Str Stl, Spra y	SF	0.60	
3314	Paint, 2 Coat, Sm Vessel/Tank, Spra y	SF	0.55	
3315	Paint, 2 Coat, Lg Vessel/Tank, Spra y	SF	0.48	
3316	Paint, 2 Coat, Piping To	SF	0.95	
3317	Paint, 1 Coat, Type 1 Str Stl, Spra y	SF	0.51	
3318	Paint, 1 Coat, Type 2 Str Stl, Spra y	SF	0.41	
3319	Paint, 1 Coat, Type 3 Str Stl, Spra y	SF	0.38	
3321	Paint, 1 Coat, Sm Vessel/Tank, Spra y	SF	0.35	
3322	Paint, 1 Coat, Lg Vessel/Tank, Spra y	SF	0.31	
3323	Paint, 1 Coat, Piping To	SF	0.61	
3324	Paint, 2 Coat, Type 1 Str Stl, Brus h	SF	1.15	
3325	Paint, 2 Coat, Type 2 Str Stl, Brus h	SF	0.95	
3326	Paint, 2 Coat, Type 3 Str Stl, Brus h	SF	0.88	
3327	Paint, 2 Coat, Sm Vessel/Tank, Brus h	SF	0.81	
3328	Paint, 2 Coat, Lg Vessel/Tank, Brus h	SF	0.69	
3329	Paint, 2 Coat, Piping To	SF	1.37	
3331	Paint, 1 Coat, Type 1 Str Stl, Brus h	SF	0.74	
3332	Paint, 1 Coat, Type 2 Str Stl, Brus h	SF	0.61	
3333	Paint, 1 Coat, Type 3 Str Stl, Brus h	SF	0.57	
3334	Paint, 1 Coat, Sm Vessel/Tank, Brus h	SF	0.51	
3335	Paint, 1 Coat, Lg Vessel/Tank, Brus h	SF	0.45	
3336	Paint, 1 Coat, Piping To	SF	0.88	
09906 3400 Protective Coatings, Epoxy Polyamide Cured Resi				
3411	Epoxy, 6 Ml, Type 1 Str	SF	1.42	
3412	Epoxy, 6 Ml, Type 2 Str	SF	1.08	
3413	Epoxy, 6 Ml, Type 3 Str	SF	0.99	
3414	Epoxy, 6 Ml, Sm	SF	0.94	
3415	Epoxy, 6 Ml, Lg	SF	0.84	
3416	Epoxy, 6 Ml, Piping To 14", Spray	SF	1.57	
3417	Epoxy, 4 Ml, Type 1 Str	SF	0.99	
3418	Epoxy, 4 Ml, Type 2 Str	SF	0.75	
3419	Epoxy, 4 Ml, Type 3 Str	SF	0.69	
3421	Epoxy, 4 Ml, Sm	SF	0.65	
3422	Epoxy, 4 Ml, Lg	SF	0.58	
3423	Epoxy, 4 Ml, Piping To 14", Spray	SF	1.11	
09906 3500 Protective Coatings, High Build Epoxy System P				
3511	Epoxy, 14 Ml, Type 1 Str Stl, Spra y	SF	1.77	
3512	Epoxy, 14 Ml, Type 2 Str Stl, Spra y	SF	1.33	
3513	Epoxy, 14 Ml, Type 3 Str Stl, Spra y	SF	1.23	
3514	Epoxy, 14 Ml, Sm Vessel/Tank, Spra y	SF	1.16	
3515	Epoxy, 14 Ml, Lg Vessel/Tank, Spra y	SF	1.06	
3516	Epoxy, 14 Ml, Piping To	SF	1.98	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3517	Epoxy, 12 Ml, Type 1 Str Stl, Spra y	SF	1.45	
3518	Epoxy, 12 Ml, Type 2 Str Stl, Spra y	SF	1.09	
3519	Epoxy, 12 Ml, Type 3 Str Stl, Spra y	SF	1.01	
3521	Epoxy, 12 Ml, Sm Vessel/Tank, Spra y	SF	0.96	
3522	Epoxy, 12 Ml, Lg Vessel/Tank, Spra y	SF	0.88	
3523	Epoxy, 12 Ml, Piping To	SF	1.62	
09906 3600 Protective Coatings, Vinyl System Prime, Two F				
3611	Paint, 5 Coat, Type 1 Str Stl, Spra y	SF	3.24	
3612	Paint, 5 Coat, Type 2 Str Stl, Spra y	SF	2.55	
3613	Paint, 5 Coat, Type 3 Str Stl, Spra y	SF	2.48	
3614	Paint, 5 Coat, Sm Vessel/Tank, Spra y	SF	2.39	
3615	Paint, 5 Coat, Lg Vessel/Tank, Spra y	SF	2.27	
3616	Paint, 5 Coat, Piping To	SF	3.66	
3617	Paint, 5 Coat, Sm Tank Int, Spray	SF	3.60	
3618	Paint, 5 Coat, Lg Tank Int, Spray	SF	3.39	
09906 3700 Protective Coatings, High Build Vinyl System P				
3711	Paint, 9.5 Ml, Type 1 Str Stl, Spr ay	SF	1.77	
3712	Paint, 9.5 Ml, Type 2 Str Stl, Spr ay	SF	1.42	
3713	Paint, 9.5 Ml, Type 3 Str Stl, Spr ay	SF	1.36	
3714	Paint, 9.5 Ml, Sm	SF	1.33	
3715	Paint, 9.5 Ml, Lg	SF	1.22	
3716	Paint, 9.5 Ml, Piping To 14", Spra y	SF	1.97	
3717	Paint, 9.5 Ml, Sm Tank Int, Spray	SF	1.98	
3718	Paint, 9.5 Ml, Lg Tank Int, Spray	SF	1.83	
3719	Paint, 8 Ml, Type 1 Str	SF	1.40	
3721	Paint, 8 Ml, Type 2 Str	SF	1.12	
3722	Paint, 8 Ml, Type 3 Str	SF	1.08	
3723	Paint, 8 Ml, Sm	SF	1.05	
3724	Paint, 8 Ml, Lg	SF	0.96	
3725	Paint, 8 Ml, Piping To 14", Spray	SF	1.56	
3726	Paint, 8 Ml, Sm Tank Int, Spray	SF	1.57	
3727	Paint, 8 Ml, Lg Tank Int, Spray	SF	1.45	
09906 3800 Protective Coatings, Coal Tar Epoxy System Two				
3811	Epoxy, 16 Ml, Type 1 Str Stl, Spra y	SF	1.37	
3812	Epoxy, 16 Ml, Type 2 Str Stl, Spra y	SF	1.15	
3813	Epoxy, 16 Ml, Type 3 Str Stl, Spra y	SF	1.06	
3814	Epoxy, 16 Ml, Sm Vessel/Tank, Spra y	SF	1.06	
3815	Epoxy, 16 Ml, Lg Vessel/Tank, Spra y	SF	0.92	
3816	Epoxy, 16 Ml, Piping To	SF	1.64	
3817	Epoxy, 16 Ml, Sm Tank Int, Spray	SF	1.47	
3818	Epoxy, 16 Ml, Lg Tank Int, Spray	SF	1.29	
09906 3900 Protective Coatings, Chorinated Rubber System				
3911	Rubber, 5 Ml, Type 1 Str Stl, Spra y	SF	1.28	
3912	Rubber, 5 Ml, Type 2 Str Stl, Spra y	SF	0.95	
3913	Rubber, 5 Ml, Type 3 Str Stl, Spra y	SF	0.84	
3914	Rubber, 5 Ml, Sm Vessel/Tank, Spra y	SF	0.75	
3915	Rubber, 5 Ml, Lg Vessel/Tank, Spra y	SF	0.69	
3916	Rubber, 5 Ml, Piping To	SF	1.43	
09906 4100 Protective Coatings, High Build Epoxy, 2 Coats				
4111	Epoxy, 12 Ml, Type 1 Str Stl, Spra y	SF	1.60	
4112	Epoxy, 12 Ml, Type 2 Str Stl, Spra y	SF	1.06	
4113	Epoxy, 12 Ml, Type 3 Str Stl, Spra y	SF	1.06	
4114	Epoxy, 12 Ml, Sm Tank Int, Spray	SF	1.60	
4115	Epoxy, 12 Ml, Lg Tank Int, Spray	SF	1.60	
4116	Epoxy, 12 Ml, Piping To	SF	2.00	
09906 4200 Protective Coatings, Zinc Silicate, Prime Coat				
4211	Zinc, 3 Ml, Type 1 Str Stl, Spray	SF	0.78	
4212	Zinc, 3 Ml, Type 2 Str Stl, Spray	SF	0.60	
4213	Zinc, 3 Ml, Type 3 Str Stl, Spray	SF	0.58	
4214	Zinc, 3 Ml, Sm Tank Int, Spray	SF	0.55	
4215	Zinc, 3 Ml, Lg Tank Int, Spray	SF	0.54	
4216	Zinc, 3 Ml, Piping To 14", Spray	SF	0.82	
09906 4300 Protective Coatings, Vinyl Enamel, 2 Coats				
4311	Vyl Enl, 3 Ml, Ty 1 Str	SF	1.13	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4312	Vyl Enl, 3 Ml, Ty 2 Str	SF	0.95	
4313	Vyl Enl, 3 Ml, Ty 3 Str	SF	0.85	
4314	Vyl Enl, 3 Ml, Sm Tank Int, Spray	SF	0.81	
4315	Vyl Enl, 3 Ml, Lg Tank Int, Spray	SF	0.74	
4316	Vyl Enl, 3 Ml, Pip To 14', Spray	SF	1.28	
09906 4400	Protective Coatings, Coal Tar			
4411	Coal Tar, 3/32", Lg Vessel/Tank	SF	2.62	
09907 0010	Horizontal surfaces, application only			
09907 0019	Metal decking & roofing			
0020	Horiz surf, metal decking & roofing, spray, one coat, appl	SF	0.08	
09907 0029	Concrete deck			
0030	Horiz surf, conc deck, spray, one coat, appl only	SF	0.09	
09907 0039	Concrete floor & steps			
0040	Horiz surf, conc fl & steps, small area, brush, one coat,	SF	0.19	
0050	Horiz surf, conc fl & steps, small area, roll, one coat, appl	SF	0.15	
09907 0059	Wood porch floor			
0060	Horiz surf, wood porch fl, brush, one coat, appl only	SF	0.19	
0070	Horiz surf, wood porch fl, spray/roll, one coat, appl only	SF	0.15	
09907 0079	Wood steps, risers & stringers			
0080	Horiz surf, wood steps (risers/ stringers), brush, one coat,	SF	0.33	
09907 0089	T & G wood floor			
0090	Horiz surf, stain/fill shellac/ varnish, T&G wd fl, brush, appl	SF	0.09	
0100	Horiz surf, stain/fill shellac/ varnish, T&G wd fl, applicator,	SF	0.08	
0110	Horiz surf, stain/fill shellac/ varnish, T&G wd fl, mop, appl	SF	0.05	
0120	Horiz surf, stain/fill shellac/ varnish, T&G wd fl, mach buff, appl	SF	0.07	
09907 0129	Shingle roof			
0130	Horiz surf, shingle roof, brush, one coat, appl only	SF	0.33	
0140	Horiz surf, shingle roof, roll, one coat, appl only	SF	0.22	
0150	Horiz surf, shingle roof, spray, one coat, appl only	SF	0.11	
09909 0010	Site work, application only			
09909 0014	Chain link fencing			
0015	Site work, chain link fencing, spray, one coat, appl only	SF	0.09	
09909 0019	Wood fencing & benches			
0020	Site work, wood fencing & benches, brush, one coat, appl	SF	0.33	
0030	Site work, wood fencing & benches, spray, one coat, appl	SF	0.09	
09910 0010	Miscellaneous, application only			
09910 0014	Tanks & spheres			
0015	Msc, tanks & spheres, ext shell, roll, one coat, appl only	SF	0.15	
0020	Msc, tanks & spheres, ext shell, spray, one coat, appl	SF	0.11	
0030	Msc, tanks & spheres, roof, roll, one coat, appl only	SF	0.11	
0040	Msc, tanks & spheres, roof, spray, one coat, appl only	SF	0.08	
0050	Msc, large post & beam brush, one coat, appl only	SF	0.41	
09910 0059	Swimming pool, Marking And Lettering			
0060	Msc, swimming pool, elastomerics, brush, one coat, appl only	SF	0.22	
0070	Msc, swimming pool, elastomerics, roll, one coat, appl only	SF	0.13	
0080	Msc, swimming pool, elastomerics, cvntl spray, one coat, appl onl	SF	0.07	
0090	Msc, swimming pool, elastomerics, airless spray, one coat, appl	SF	0.06	
09915 Interior Painting				
09917 0010	Walls and ceilings, application only			
09917 0019	Concrete block			
0020	Walls & ceilings, conc block, roll, one coat, appl only	SF	0.15	
0030	Walls & ceilings, conc block, spray, one coat, appl only	SF	0.11	
09917 0039	Scored block & brick			
0040	Walls & ceilings, scored block & brick, roll, one coat, appl onl	SF	0.33	
0050	Walls & ceilings, scored block & brick, spray, one coat, appl	SF	0.13	
09917 0059	Block filler			
0060	Walls & ceilings, block filler, brush, one coat, appl only	SF	0.50	
0070	Walls & ceilings, block filler, roll, one coat, appl only	SF	0.22	
0080	Walls & ceilings, block filler, spray, one coat, appl only	SF	0.13	
09917 0089	Drywall and smooth plaster			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0090	Walls & ceilings, drywall & smooth plas, brush, one coat,	SF	0.19	
0100	Walls & ceilings, drywall & smooth plas, roll, one coat,	SF	0.11	
0110	Walls & ceilings, drywall & smooth plas, spray, one coat,	SF	0.07	
09917 0119	Cenent/sand finish plaster			
0120	Walls & ceilings, cement/sand fin plas, roll, one coat, appl	SF	0.13	
0130	Walls & ceilings, cement/sand fin plas, spray, one coat, appl	SF	0.08	
09917 0139	Rough sand finish plaster			
0140	Walls & ceilings, rough sand fin plas, roll, one coat, appl only	SF	0.15	
0150	Walls & ceilings, rough sand fin plas, spray, one coat, appl onl	SF	0.09	
09917 0159	Plywood paneling and veneer			
0160	Walls & ceilings, plywood pnl & veneer, brush, one coat, appl	SF	0.22	
0170	Walls & ceilings, plywood pnl & veneer, spray, one coat, appl	SF	0.11	
0172	Paint Int Wood Surfaces,1 Primer er, 1 Coat Paint, Brush/Roller	SF	0.27	
0174	Paint Int Wood Surfaces,1 Primer er, 2 Coat Paint, Brush/Roller	SF	0.46	
09917 0179	Acoustical ceiling			
0180	Walls & ceilings, acoust ceiling, roll, one coat, appl	SF	0.33	
0190	Walls & ceilings, acoust ceiling, spray, one coat, appl	SF	0.11	
09917 0199	Acoustical metal pan ceiling			
0200	Walls & ceilings, acoust metal pan clg, roll, one coat, appl	SF	0.16	
0210	Walls & ceilings, acoust metal pan clg, spray, one coat, appl	SF	0.09	
0212	Paint Int Msc Exposed Metal, 1 Coat Primer, Brush/Roller	SF	0.13	
0214	Paint Int Ceiling Tile Grid 2 Coat Primer, Brush/Roller	SF	0.55	
09917 0239	Wood open construction ceiling			
0240	Walls & ceilings, wood open constr, clg, spray, one coat,	SF	0.11	
09917 0249	Wood T & G ceiling			
0250	Walls & ceilings, wood T & G ceiling, roll, one coat, appl	SF	0.19	
0260	Walls & ceilings, wood T & G ceiling, spray, one coat, appl	SF	0.09	
09917 0269	Concrete ceiling			
0270	Walls & ceilings, conc ceiling, roll, one coat, appl only	SF	0.19	
0280	Walls & ceilings, conc ceiling, spray, one coat, appl only	SF	0.09	
09917 0289	Concrete wall			
0290	Walls & ceilings, conc wall, roll, one coat, appl only	SF	0.11	
0300	Walls & ceilings, conc wall, spray, one coat, appl only	SF	0.07	
0332	Paint Int CMU's/Concrete, 1 Fill er, 1 Coat Paint, Brush/Roller	SF	0.26	
0333	Paint Int CMU's/Concrete, 1 Fill er, 2 Coat Paint, Brush/Roller	SF	0.44	
09917 0400	Wood Floors			
0410	Refinish Wood Floor	SF	2.17	
0420	Refinish Wood Gym Floor Including Marking Of Court	SF	4.47	
0430	Screenback Wood Gym Floors	SF	0.63	
0440	Paint Interior Wood Floor With Non-Slip Floor Coating	SF	0.47	
09920 0010	Mscellaneous, application only			
09920 0019	Pipe/ductwork			
0020	Msc, no insulation, pipe/duct work, brush, 1 coat, appl only	SF	0.33	
0030	Msc, w/ insulation, pipe/duct work, brush, 1 coat, appl only	SF	0.36	
0040	Msc, mitt/glove, no insul, pipe/duct work, roll, appl only	SF	0.26	
0050	Msc, mitt/glove, w/ insul, pipe/duct work, roll, appl only	SF	0.28	
09920 0059	Pipe			
0060	Msc, pipe, spray, one coat, appl only	SF	0.19	
09920 0064	Ductwork			
0065	Msc, ductwork, spray, one coat, appl only	SF	0.13	
09920 0069	Concrete floor and steps			
0070	Msc, conc floor & steps, brush, one coat, appl only	SF	0.20	
0075	Msc, conc floor & steps, spray, one coat, appl only	SF	0.07	
09920 0079	Conduit, hanger, fastener			
0080	Msc, conduit, hanger, fastener, brush, one coat, appl only	SF	0.41	
0090	Msc, conduit, hanger, fastener, mitt/glove, 1 coat, appl only	SF	0.33	
0100	Msc, conduit, hanger, fastener, spray, one coat, appl only	SF	0.19	
09920 0109	Joists & decking			
0110	Msc, joists & decking, spray, one coat, appl only	SF	0.11	
09920 0119	Mscellaneous and hollow metal itens			
0120	Msc, misc & hollow metal itens, brush, one coat, appl only	SF	0.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0130	Misc, misc & hollow metal items, roll, one coat, appl only	SF	0.22	
0140	Misc, misc & hollow metal items, spray, one coat, appl only	SF	0.19	
0142	Paint Int Wood Door & HM Frame Natural Fin Door-Paint Fin Frame	EA	67.18	
0144	Paint Int Metal Door & HM Frame	EA	53.74	
0145	Paint Int Double Door & HM Frame	EA	80.60	
0146	Paint Int Windows Including Trim	SF	0.81	
09920 0149	Millwork, casework and shelving			
0150	Misc, millwork, casework & shelving, brush, 1 coat, appl	SF	0.33	
0160	Misc, millwork, casework & shelving, spray, 1 coat, appl	SF	0.19	
0162	Paint Int Wd Dr & Frm Nat Fin	EA	53.74	
0164	Paint Int Wd Dr & Frm Paint Fin	EA	53.74	
09920 0189	TT-E-506 or TT-E-505			
0190	Misc, conc, TT-E-506 or TT-E-505, brush, one coat, appl	SF	0.19	
09920 0199	Paint Application on Misc. Items			
0200	Paint Int Stair Pipe Rail, 2 Rails Two Coats Alkyd Enamel	LF	1.31	
0210	Paint Int Stair Hand Rail, 1 Rail Two Coats Alkyd Enamel	LF	0.72	
0220	Paint Int Stair Incl Rail (To 4' W) Two Coats Alkyd Enamel	RSR	12.80	
0230	Paint Int Gratings & Frames Two Coats Alkyd Enamel	SF	2.69	
0240	Paint Int Ladders Two Coats Alkyd Enamel	LF	2.44	
0250	Paint Int Misc Exposed Metal Two Coats Alkyd Enamel	SF	0.49	
0260	Paint Int Misc Exposed Metal, 1 Coat Primer, Brush/Roller	SF	0.13	
0270	Paint Int Ceiling Tile Grid, 2 Coats Paint, Brush/Roller	SF	0.55	
09920 0500	Stencil Painting Letters/Numbers On Walls Or Floors, Includes Stencil Cutout And Paint.			
0510	1" High, Per Letter/Number	EA	0.22	
0520	2" High, Per Letter/Number	EA	0.27	
0530	3" High, Per Letter/Number	EA	0.45	
0540	4" High, Per Letter/Number	EA	0.56	
0550	4" To 6" High, Per Letter/Number	EA	1.55	
0560	6" To 12" High, Per Letter/Number	EA	2.07	
0570	Over 12" High, Per Letter/Number	EA	2.44	
09920 0600	Logo Painting			
0610	Paint Logo (Simple Design)	SF	9.28	
0620	Paint Logo (Complex Design)	SF	10.92	
09921	Paint On Existing Paint			
09921 1000	Paint On Paint, Per Coat			
1001	Smooth Surface (Gypsum Board Or Plaster)		0.41	0.03
1002	Medium Surface (Stucco, Brick) (75% Coverage)		0.46	0.06
1003	Rough Surface (Skim Coat) (65% Coverage)		0.79	0.06
09922	Coating & Painting Materials			
09922 0010	Coating & painting, material only			
09922 0019	Vinyl paint			
0020	Ctg & paints, V-102E, aluminum vinyl paint	SF	0.17	
0040	Ctg & paints, V-106D, dark red oxide, vinyl paint	SF	0.14	
0050	Ctg & paints, V-106D, dark red oxide, w/ added abrsv, vinyl	SF	0.17	
0070	Ctg & paints, V-106D, light red oxide, vinyl paint	SF	0.14	
0080	Ctg & paints, V-106D, light red oxide, w/ added abrsv, vinyl	SF	0.17	
0100	Ctg & paints, VZ-108D, white, zinc rich, vinyl paint	SF	0.23	
0110	Ctg & paints, V-766E, gray, vinyl paint	SF	0.14	
0120	Ctg & paints, V-766E, w/ added abrsv, gray, vinyl paint	SF	0.15	
0130	Ctg & paints, V-766E, white, vinyl paint	SF	0.14	
0140	Ctg & paints, V-766E, white, w/ added abrsv, vinyl paint	SF	0.15	
09922 0149	Structural paint			
0150	Structural Paint, TT-P-86, Type I Red Lead Base Ready Mix	SF	0.04	
0160	Structural Paint TT-P-615 Type II Primer Lead Silico Chromate RM	SF	0.09	
0170	Ctg & paints, black, structural paint, TT-P-496, Type II	SF	0.09	
0180	Ctg & paints, structural paint, TT-P-1046	SF	0.12	
09922 0189	Aluminum Paint, Red Lead Base Ready Mx			
0190	Ctg & paints, Aluminum Paint, TT-P-38 Red Lead Base Ready Mix	SF	0.06	
0200	Ctg & paints, aluminum paint, heat resistant, TT-P-28	SF	0.12	
09922 0209	Type I Paint, TT-P-615 Primer Coating Basic Lead Silico Chromate Ready Mx			
0210	Ctg & paints, Type I paint, TT-P-615	SF	0.06	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
09922 0219	Type II paint TT-P-86 Red Lead Base Ready Mx			
0220	Ctg & paints, Type II paint, TT-P-86	SF	0.06	
09922 0229	Class A paint, TT-E-489 Enamel Alkyd Gloss			
	Note: For Interior and Exterior Surfaces			
0230	Class A paint TT-E-489 Enamel Alkyd Gloss For Ext & Int Surf	SF	0.10	
09922 0239	Coal tar epoxy, C-200a			
0240	Ctg & paints, coal tar epoxy, C-200A	SF	0.21	
09922 0249	Zinc rich epoxy, E-303b			
0250	Ctg & paints, zinc rich epoxy, E-303B	SF	0.13	
09922 0259	Coal tar base, ML-C-18480			
0260	Ctg & paints, coal tar base, ML-C-18480	SF	0.14	
09922 0269	SSPC Paint 25 system			
0270	Ctg & paints, SSPC paint 25 system	SF	0.10	
09922 0279	Concrete and masonry paint			
0280	TT-E-506 or 505 Int Enamel Alkyd Gloss Tints & White Orderless	SF	0.09	
0290	TT-E-508 or 509 Int Enamel Alkyd SemiGloss White&Tints Orderles	SF	0.09	
0300	TT-E-545 or 543 Int Primer Alkyd Enamel Flat Tints&White Odorles	SF	0.06	
0310	TT-P-29, Interior Laytex Base Flat White & Tints	SF	0.06	
0320	TT-P-30, Interior Alkyd Orderless Flat White and Tints	SF	0.08	
0330	TT-P-91 Interior Rubber Base, Concrete and Masonry Floors	SF	0.10	
0340	Ctg & paints, conc & msrny, E-303D, zinc rich	SF	0.12	
0350	Ctg & paints, conc & msrny, ML-P-2444, Epoxy Paint	SF	0.22	
0370	TT-P-95 Rubber Paint Swiming Pool, Other Conc & Masonry Surf	SF	0.15	
09922 0400	Paint Additives			
0410	Anti Bacterial/Odor Killing Pain t Additive Per Oz Of Additive	OZ	3.47	
09930	Transparent Finishes And Stains			
	Includes Material.			
09930 1000	Transparent Finishes			
09930 1100	Varnish Finish - Wood Trim			
	Note: Sanding Not Included			
1101	Varnish, Wood Trim One Coat Sealer-One Coat Varnish	SF	0.43	
1102	Polyurethane - One Coat	SF	0.28	
1103	Varnish Wood Door & Frame	EA	16.02	
1104	Varnish Wood Window & Frame	EA	10.16	
09930 3000	Stains			
09930 3100	Stain Wood Floors			
3101	Stain Wood Floors, Brush	SF	0.19	
3102	Stain Wood Floors, Roller	SF	0.16	
3103	Stain Wood Floors, Spray	SF	0.13	
09930 3200	Stain Wood Trim			
3201	Stain Wood Trim Brush, Wipe Off	LF	0.43	
09930 3300	Stain Wood Doors And Windows			
3301	Stain Wood Door & Frame, Brush	EA	16.02	
3302	Stain Wood Window & Frame, Brush	EA	10.17	
09930 9000	Sanding Surfaces			
9001	Sanding, New Surfaces, Mmimal	SF	0.13	
9002	Sanding, W/ Machine	SF	0.12	
09956	Steel			
09956 3000	Steel Corner Guards			
	Note: Includes Anchors			
3001	1"x1"x1/4" Steel Corner Guards	LF	6.99	1.99
3011	For Galvanized Steel, Add		1.18	
3002	2"x2"x1/4" Steel Corner Guards	LF	9.46	2.17
3011	For Galvanized Steel, Add		1.96	
3003	3"x3"x5/16" Steel Corner Guards	LF	10.56	2.17
3011	For Galvanized Steel, Add		2.29	
3004	4"x4"x5/16" Steel Corner Guards	LF	13.32	2.56
3011	For Galvanized Steel, Add		2.96	
09956 4000	Stainless Steel Corner Guards			
	Note: Includes Anchors			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4001	1"x1"x1/4" S.S. Corner Guards	LF	9.97	1.99
4002	2"x2"x1/4" S.S. Corner Guards	LF	14.40	2.17
4003	3"x3"x5/16" S.S. Corner Guards	LF	16.33	2.17
4004	4"x4"x5/16" S.S. Corner Guards	LF	20.81	2.56
09956 5000	Stainless Steel Corner Protection			
5001	16 Ga, 3-1/2" Adhesive Munt Corner Protection	LF	19.77	1.84
5002	12 Ga, 3-1/2" Adhesive Munt Corner Protection	LF	24.88	1.84
09960	Flexible Wood Sheets			
09960 1000	Basic Materials			
1101	Walnut 1/84 In Thick	SF	6.15	1.48
1201	Exotic Wood 1/84 Thick	SF	10.47	0.30
09965	Wall Protection System			
09965 1000	Acrylic, Modifion, Semi-Rigid PVC Sheets			
Note: Includes Adhesive And Joint Strips, Plain And Patterned. Demolition Includes removing Acrylci Sheets, Strips And Adhesive.				
1001	.028 In Thick Acrylic PVC Sheets	SF	5.71	0.24
1002	.040 In Thick Acrylic PVC Sheets	SF	5.97	0.24
09966	Plastic Wall Covering			
09966 1000	Plastic Wall Covering			
1001	Plastic Wallcovering Sys,StdClr,Compl, For Commercial Use	SF	2.46	0.73
1002	Plastic Corner Guards Sys, Std Colors,Complete,Commercial Use	LF	11.95	2.53
1003	Plastic Chairrail Sys,Std Color, Comp, For Commercial Use	LF	15.90	1.48
09970	Wallpaper			
09970 0010	Wall covering			
09970 0499	Cork wall tiles			
0500	Wall covering, w/sizing,1'x 3' sq,1/4"T, add 10% waste,cork	SF	7.30	0.21
1000	Wall covering,cork,lt or dark, 12"x12"x1/2",non-directional	SF	8.30	0.21
1100	Wall covering, cork, natural, 12x12x1/2, non directional	SF	9.79	0.21
09970 2400	Gypsum based, fabric-backed, fire resistant			
2500	Wall covering, 21 oz/SY, msnry walls, min, gypsum-based,	SF	1.05	0.08
09970 2999	Vinyl wall covering Includes Wall Preparation And Or Sizing Compound.			
3000	Wall covering, lightweight, (12-15 oz/SY), fabric-backed,	SF	0.96	0.16
3300	Wall covering, mdm weight, type 2, (20-24oz/SY), fabric-backed,	SF	1.24	0.13
3400	Wall covering, hvy weight, type 3, (28 oz/SY), fabric-backed,	SF	1.91	0.13
09970 4189	Grass cloth Sisal Wall Covering and Adhesive are Fire Rated.			
4190	Wall covering, grass cloth, natural fabric	SF	1.63	
4192	Sisal Wall Covering - 54 Oz/Sy WAdhesive (4',8',12' Widths)	SY	17.25	
09990	Surface Preparation			
09993 0009	Paint preparation			
0010	Paint preparation, basic drop cloth	CSF	2.46	
0020	Paint preparation, masking w/paper	LF	0.36	
0030	Paint preparation, volume cover up w/plastic	CSF	0.83	
0040	Paint preparation, volume cover up w/paper	CSF	1.08	
0050	Paint preparation, hand scraping & sanding 280 - 800 SF/day	SF	0.40	
0060	Paint preparation,280 - 800 SF/day, metal prep work, hand	SF	0.40	
0070	Paint preparation, power tool cleaning (SSPC-3), metal prep	SF	0.22	
0080	Paint preparation, sanding trim	SF	0.27	
0090	Paint preparation, sanding paneling, 75 - 200 SF/hr	SF	0.19	
0100	Paint preparation, light hand washing, 200 - 500 SF/hr	SF	0.08	
0110	Paint preparation, 100 - 200 SF/hr, calcimine removal washing	SF	0.18	
09994	Painted Surface Preparation			
09994 1000	Cleaning And Preparation Of Previously Painted Surfaces. JOC			
NOTE: For Lead Paint See Section 02114-1700 and 02114-1800				
09994 1100	Concrete And Masonary Surfaces			
1101	Water Blast	CSF	60.83	
1102	Steam Clean	CSF	84.95	
1103	Chemical Clean, Brush And Wash	CSF	62.17	
1104	Hand Scrape Surface	CSF	113.68	
09994 1200	Wood Surfaces			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1201	Water Blast	CSF	67.60	
1202	Steam Clean	CSF	92.90	
1203	Chemical Clean, Brush And Wash	CSF	62.17	
1204	Hand Scrape Surface	CSF	142.10	
09994 1300	Metal Surfaces			
1301	Sand Blast	CSF	66.78	
1302	Chemical Clean, Brush And Wash	CSF	50.80	
09994 1600	Paint Removal, Strip To Bare Wood,			
1601	Paint Removal, Siding And Flat Surfaces	SF	3.02	
1602	Paint Removal, For Cornices And Decorative Trim To 12" Wide	SF	3.47	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
10050 Compartments				
10050 Hospital				
10050 1000 Hospital Track (WCurtain Hooks)				
1001	Cubicle Track, (w/Curtain Hooks) Ceiling Hung - Hospital	LF	5.50	
1002	Cubicle Track, (w/Curtain Hooks) Suspended - Hospital	LF	7.73	
10050 2000 Hospital				
10050 2100 Hospital				
Note: Galvanized Steel With Easy Clean Surfaces, No molding And Rounded Edges				
2111	Steel Divider, 54"(1.4M) High Incl 10"(25cm) Glass Light	LF	100.70	4.52
2112	Steel Divider, 54"(1.4M) High Incl 14"(36cm) Glass Light	LF	103.02	4.52
2113	Steel Divider, 54"(1.4M) High Incl 24"(61cm) Glass Light	LF	100.56	4.52
2114	Steel Divider, 60"(1.5M) High Incl 10"(25cm) Glass Light	LF	109.70	4.75
2115	Steel Divider, 60"(1.5M) High Incl 14"(36cm) Glass Light	LF	110.77	4.75
2116	Steel Divider, 60"(1.5M) High Incl 24"(61cm) Glass Light	LF	106.39	4.79
10050 2200 Stainless Steel				
2201	SST Divider, 54"(1.4M) High Incl 10"(25cm) Glass Light	LF	155.68	4.65
2202	SST Divider, 54"(1.4M) High Incl 14"(36cm) Glass Light	LF	165.02	4.65
2203	SST Divider, 54"(1.4M) High Incl 24"(61cm) Glass Light	LF	183.12	4.62
2204	SST Divider, 60"(1.5M) High Incl 10"(25cm) Glass Light	LF	168.71	4.92
2205	SST Divider, 60"(1.5M) High Incl 14"(36cm) Glass Light	LF	168.71	4.92
2206	SST Divider, 60"(1.4M) High Incl 24"(61cm) Glass Light	LF	194.12	4.89
10050 2300 Bed Stops				
2310	Bed Stops 2"x2" Alum Angle, Beve led Corners 3'-0" Length	EA	15.98	
10100 Visual Display Boards, Compartments & Cubicles				
10110 Chalkboards				
10110 1000 Chalkboards				
1001	Porcelain Enamel With Aluminum T rim	SF	32.92	
1002	Slate With Aluminum Frame	SF	28.28	
1003	Coated Hardboard Up To 1/4" Thk	SF	6.26	
1004	Tackboard (Cork W/Out Frame) Up To 1/4" Thick	SF	7.13	
1005	Dry Erase Board W/ Frame & Tray	SF	15.66	
1006	Remove & Reinstall Chalkboard	SF	2.26	
10110 2000 Sliding Chalkboards				
10110 2100 Vertical, Wall Munted, One Sliding Board				
10110 2110 One Sliding Board				
2111	8'x4' Vert. Sliding Chalkboards	EA	1,277.77	
2112	8'x8' Vert. Sliding Chalkboards	EA	1,677.48	
2113	8'x12' Vert. Sliding Chalkboards	EA	2,177.05	
10110 2120 Two Sliding Board				
2121	8'x4' Vert. Sliding Chalkboards	EA	1,920.24	
2122	8'x8' Vert. Sliding Chalkboards	EA	2,567.06	
2123	8'x12' Vert. Sliding Chalkboards	EA	3,363.14	
10110 2200 Horizontal				
10110 2210 Two Tracks				
2211	4'x8' Horiz. Sliding Ckbrd	EA	1,277.77	
2212	4'x12' Horiz. Sliding Ckbrd	EA	1,578.64	
2213	4'x16' Horiz. Sliding Ckbrd	EA	3,140.75	
10110 2220 Four Tracks				
2221	4'x8' Horiz. Sliding Ckbrd	EA	2,043.79	
2222	4'x12' Horiz. Sliding Ckbrd	EA	2,517.63	
2223	4'x16' Horiz. Sliding Ckbrd	EA	3,140.75	
10110 2300 Vertical, Motorized				
10110 2310 One Sliding Panel				
2311	10'x4' Vert. Sliding Chkbrd	EA	5,125.42	
2312	10'x10' Vert. Sliding Chkbrd	EA	5,702.78	
2313	10'x16' Vert. Sliding Chkbrd	EA	6,356.30	
10110 2320 Two Sliding Panel				
2321	10'x4' Vert. Sliding Chkbrd	EA	8,090.66	
2322	10'x10' Vert. Sliding Chkbrd	EA	8,964.56	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2323	10'x16' Vert. Sliding Chkbrd	EA	9,987.74	
10110 2330	Three Sliding Panel			
2331	10'x4' Vert. Sliding Chkbrd	EA	10,611.11	
2332	10'x10' Vert. Sliding Chkbrd	EA	12,003.93	
2333	10'x16' Vert. Sliding Chkbrd	EA	13,298.94	
10160 Toilet Compartments				
10162 0010	Partitions, toilet			
10162 0110	Cubicles			
10162 0110	Ceiling hung			
0300	Partitions toilet, plstc lam on prt bd, cubicles, ceiling hung	EA	674.81	25.36
3500	Partitions, toilet, for overhead braced, add		93.64	
3510	Partitions, toilet, for oversized (handicapped) stall, add		243.76	
10162 1610	Floor mounted			
1700	Partitions toilet, cubicles, fl mounted, painted metal	EA	443.88	19.40
3500	Partitions, toilet, for overhead braced, add		56.43	
3510	Partitions, toilet, for oversized (handicapped) stall, add		165.51	
1800	Partitions toilet, plstc lam on prt bd, cubicles, fl mounted	EA	617.76	20.10
3500	Partitions, toilet, for overhead braced, add		65.12	
3510	Partitions, toilet, for oversized (handicapped) stall, add		243.76	
1900	Partitions toilet, cubicles, fl mounted, porcelain enamel	EA	486.80	24.46
1012	For Ceiling Hung Add		173.77	
1013	For Wall Hung Add		276.12	
1014	For Single Toilet Paper Holder Add Per Each		9.00	
1015	For Double Toilet Paper Holder Add Per Each		14.00	
1016	For Coat Hook Add Per Each		4.60	
3500	Partitions, toilet, for overhead braced, add		58.57	
3510	Partitions, toilet, for oversized (handicapped) stall, add		184.83	
2000	Partitions toilet, cubicles, fl mounted, sst	EA	1,190.65	31.48
1012	For Ceiling Hung Add		234.30	
1013	For Wall Hung Add		416.89	
1014	For Single Toilet Paper Holder Add Per Each		9.00	
1015	For Double Toilet Paper Holder Add Per Each		14.00	
1016	For Coat Hook Add Per Each		4.60	
3500	Partitions, toilet, for overhead braced, add		93.76	
3510	Partitions, toilet, for oversized (handicapped) stall, add		501.56	
10162 3099	Wall hung			
3100	Partitions toilet, cubicles, wall hung, plstc lam	EA	617.76	61.90
3500	Partitions, toilet, for overhead braced, add		65.12	
3510	Partitions, toilet, for oversized (handicapped) stall, add		243.76	
10162 4000	Screens, entrance			
4520	Partitions toilet, painted metal, fl mounted, screens,	LF	53.44	3.26
4530	Partitions toilet, sst, fl mounted, screens, entrance	LF	164.34	10.78
4550	Partitions toilet, porcelain enam 7' H, fl mtd, screens,	LF	118.07	
10162 5150	Urinal screen			
10162 5150	Floor mounted			
5300	Partitions toilet, painted metal, urinal screen, fl mounted	EA	242.66	25.96
8200	Partitions, urinal screen, for overhead post support, add		91.38	
8250	Partitions, urinal screen, for wall mounted, deduct		-58.52	
8300	Partitions, urinal screen, for wall mounted, govt type, deduct		-45.20	
8350	Partitions, urinal screen, for wall mounted, wedge type, deduct		-41.88	
5400	Partitions toilet, plstc lam on prt bd, urinal screen, fl	EA	312.09	10.02
8200	Partitions, urinal screen, for overhead post support, add		126.09	
8250	Partitions, urinal screen, for wall mounted, deduct		-72.40	
8300	Partitions, urinal screen, for wall mounted, govt type, deduct		-59.09	
8350	Partitions, urinal screen, for wall mounted, wedge type, deduct		-55.76	
5500	Partitions toilet, porcelain enamel, urinal screen, fl	EA	400.93	34.91
8200	Partitions, urinal screen, for overhead post support, add		170.51	
8250	Partitions, urinal screen, for wall mounted, deduct		-90.17	
8300	Partitions, urinal screen, for wall mounted, govt type, deduct		-76.86	
8350	Partitions, urinal screen, for wall mounted, wedge type, deduct		-73.53	
5600	Partitions toilet, sst, urinal screen, fl mounted	EA	577.04	28.02
8200	Partitions, urinal screen, for overhead post support, add		258.57	
8250	Partitions, urinal screen, for wall mounted, deduct		-125.39	
8300	Partitions, urinal screen, for wall mounted, govt type, deduct		-112.08	
8350	Partitions, urinal screen, for wall mounted, wedge type, deduct		-108.75	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
10162 5900 Msc Divider				
5910	Porcelain Enameled Steel Panel F floor Mtd, 7' (2.1M) High	LF	45.71	
5920	7' (2.1M) Painted Metal Panel Flo or Mtd	LF	32.13	
5930	7' (2.1M) Stainless Steel Panel F floor Mtd	LF	30.80	
10162 6700 Wall hung				
6900	Partitions toilet, plstc lam on prt bd, urinal screen, wall hung	EA	169.55	7.26
10162 7000 Removal & Reinstallation Of Bathroom Partitions				
Note: Including Storage, Cleaning And Msc. Supply Materials				
7010	Remove & Reinstall Urinal Partition, Floor Munted	EA	86.04	
7020	Remove & Reinstall Toilet Partition, Floor Munted	EA	169.61	
7030	Remove & Reinstall Urinal Partition, Wall Munted	EA	104.34	
7040	Remove & Reinstall Toilet Partition, Ceiling Or Wall Mtd	EA	204.36	
10163 Solid Plastic Toilet And Urinal Partitions				
10163 1000 Solid Plastic Toilet Partitions				
1001	Solid Plastic Toilet Partition, W/Door & Side Divider, Flr Mtd	EA	1,126.66	21.76
1011	For Overhead Braced, Add		54.52	
1012	For Single Toilet Paper Holder, Add Per Each		15.00	
1013	For Double Toilet Paper Holder, Add Per Each		15.00	
1014	For Coat Hook, Add Per Each		12.40	
1015	For Oversized (Wheel Chair) Unit, Includes 52" Grab Bars, Add		170.12	
1002	Solid Plastic Toilet Partition, W/Door & Side Divider, Wall Mtd	EA	1,669.02	21.76
1011	For Overhead Braced, Add		54.52	
1012	For Single Toilet Paper Holder, Add Per Each		15.00	
1013	For Double Toilet Paper Holder, Add Per Each		15.00	
1014	For Coat Hook, Add Per Each		12.40	
1015	For Oversized (Wheel Chair) Unit, Includes 52" Grab Bars, Add		170.12	
1003	Solid Plastic Toilet Partition, W/Door & Side Divider, Clng Mtd	EA	1,250.61	21.76
1012	For Single Toilet Paper Holder, Add Per Each		15.00	
1013	For Double Toilet Paper Holder, Add Per Each		15.00	
1014	For Coat Hook, Add Per Each		12.40	
1015	For Oversized (Wheel Chair) Unit, Includes 52" Grab Bars, Add		170.12	
10163 2000 Solid Plastic Urinal Partitions				
2001	Urinal Screen, Floor Munted	EA	252.98	10.71
2011	For Overhead Post Support, Add		61.25	
2012	For Wall Munt, Add		55.78	
2002	Urinal Screen, Wall Munted	EA	211.46	
10164 Laminated Plastic Toilet Partitions And Urinal				
10164 1000 Toilet Partitions - Front Door And Side Divider				
1001	Laminated Toilet Partition w/Door & Side Divider, Floor Mtd	EA	586.79	
1002	Laminated Toilet Partition Ceiling Mtd Incl Concealed Steel	EA	604.49	
1003	Laminated Toilet Partition Wall Mtd Incl Concealed Steel	EA	217.86	
10183 Keyboxes				
10183 1000 Keyboxes Wall Munted On Any Type Wall, W/Anchors				
1001	Keybox, Metal, 30 Key Hooks, Key Lock Door 3"Dx10"Wx12"H	EA	75.29	4.35
1002	Keybox, Metal, 60 Key Hooks, Key Lock Door, 3"Dx10"Wx12"H	EA	85.24	4.35
1003	Remove & Reinstall Key Box, Includes Storage & Cleaning	EA	17.07	
10185 Shower Compartments				
10186 0010 Partitions, shower				
10186 0010 Floor mounted				
0800	Partitions shower, enameled steel, stall, 1" thk, no base,	EA	730.78	36.35
2350	Partitions, shower, for overhead bracing, add		311.53	
2360	Partitions, shower, for ceiling hung types, add		158.76	
1150	Partitions shower, baked enamel, stall, 1" thk, no base, fl mtd	EA	730.78	36.35
2350	Partitions, shower, for overhead bracing, add		311.53	
2360	Partitions, shower, for ceiling hung types, add		158.76	
1200	Partitions shower, sst, stall, 1" thk, no base, fl mtd	EA	1,228.88	45.67
2350	Partitions, shower, for overhead bracing, add		560.58	
2360	Partitions, shower, for ceiling hung types, add		283.28	
1420	Partitions shower, dbl entry, bkd enam stall, 1" thk, no base, f	EA	1,348.56	26.22
2350	Partitions, shower, for overhead bracing, add		566.57	
2360	Partitions, shower, for ceiling hung types, add		289.27	
1430	Partitions shower, dbl entry, sst, stall, 1" thk, no base, fl	EA	2,457.75	33.62

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2350	Partitions, shower, for overhead bracing, add		1,121.16	
2360	Partitions, shower, for ceiling hung types, add		566.57	
1810	Partitions shower, 32" x 32" shower w/receptor & door, stall,	EA	1,066.74	52.79
1820	Partitions shower, 36" x 36" shower w/receptor & door, stall,	EA	1,177.66	56.29
1830	Partitions shower, 40" x 40" shower w/receptor & door, stall,	EA	1,383.92	67.54
10186 3199 Receptors				
10186 3199 Precast terrazzo				
3200	Partitions shower, receptors, precast terrazzo, 32" x 32"	EA	340.44	11.22
3250	Partitions shower, receptors, precast terrazzo, 32" x 48"	EA	412.67	11.25
3300	Partitions shower, receptors, precast terrazzo, 48" x 34"	EA	435.20	21.56
10186 3510 Plastic, simulated terrazzo				
3600	Partitions shower, 32" x 48", receptors, plastic, simulated	EA	163.53	12.95
10186 3799 Precast concrete, colors				
3800	Partitions shower, 32" x 32", receptors, precast conc, colors	EA	187.27	5.76
3900	Partitions shower, 48" x 48", receptors, precast conc, colors	EA	248.51	7.03
10186 4150 Shower doors				
10186 4199 Tempered glass door, economy				
4200	Partitions shower, doors, 24" wide, tempered glass, economy	EA	211.08	40.09
4420	Partitions shower, baked enamel steel, doors, 24" wide, tempered	EA	142.77	8.30
4510	Partitions shower, sliding, doors, 48" al fr, tempered glass	EA	372.45	13.84
10186 4699 Deluxe, tempered glass				
4700	Partitions shower, chrome on brass fr, min, doors, dlx,	EA	259.24	6.36
10186 5149 Shower unit				
5150	Partitions shower, w/al fr & tempered door, unit, 48" molded	EA	617.58	21.28
10186 5199 Shower surround, 3 wall, polypropylene				
5200	Partitions shower, 32" x 32", surround, 3 wall, polypropylene	EA	259.54	11.95
7200	Partitions shower, for steam unit, add	EA	1,102.87	

10190 Miscellaneous Steel Items

10190 Unistrut

10190 1000 Unistrut

10190 1100 Unistrut Channel 1-5/8"

1111	Unistrut Channel 1-5/8", P1000	LF	3.11	
1112	Unistrut Channel 1-5/8", P1100	LF	2.77	
1113	Unistrut Channel 1-5/8", P2000	LF	2.53	
1114	Unistrut Channel 1-5/8", P4000	LF	2.01	
1115	Unistrut Channel 1-5/8",	LF	2.45	
1116	Installation 1St	EA	27.05	
1117	Addnl Piece Same Location, Conc. W. F.	EA	5.41	
1118	Installation Per Piece, Deck	EA	18.04	
1119	Addnl Piece Same Location, Deck F orm	EA	4.51	
1121	For Galvanizing, Add	LF	0.14	

10190 1200 Unistrut With Closure Strips

1211	Unistrut W Closure Strips, P118 4	LF	1.26	
1212	Unistrut W Closure Strips, P318 4	LF	1.53	
1213	Installation Per Piece	EA	3.61	

10190 1300 Unistrut Nuts With Springs

1311	Unistrut Nut W/Spring, 1-5/8"Chan nel 1/4"	EA	0.89	
1312	Unistrut Nut W/Spring, 1-5/8"Chan nel 3/8"	EA	0.96	
1313	Unistrut Nut W/Spring, 1-5/8"Chan nel 1/2"	EA	1.05	
1314	Unistrut Nut W/Spring, 13/16"Chan nel 1/4"	EA	0.83	
1315	Unistrut Nut W/Spring, 13/16"Chan nel 3/8"	EA	0.89	
1316	Unistrut Nut W/Spring, 13/16"Chan nel 1/2"	EA	0.96	

10190 1400 Unistrut Nuts Without Springs

1411	Unistrut Nut Wb/Spring, 1-5/8"Cha nnel 1/4"	EA	0.70	
1412	Unistrut Nut Wb/Spring, 1-5/8"Cha nnel 3/8"	EA	0.77	
1413	Unistrut Nut Wb/Spring, 1-5/8"Cha nnel 1/2"	EA	0.87	
1414	Unistrut Nut Wb/Spring, 13/16"Cha nnel 1/4"	EA	0.70	
1415	Unistrut Nut Wb/Spring, 13/16"Cha nnel 3/8"	EA	0.77	
1416	Unistrut Nut Wb/Spring, 13/16"Cha nnel 1/2"	EA	0.87	

10190 1500 Unistrut Beam Clamps

1511	Unistrut Beam Clamp, 1-5/8"Channe l P2675	EA	7.36	
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MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1512	Uni strut Beam Clamp, 1-5/8" Channe l P2676	EA	9.18	
1513	Add For Uni strut Swivel Nut, P26 76	EA	0.99	
10190 1600	Uni strut Clevis Hangers			
1611	Uni strut Clevis Hngr, 1-5/8" Chann el P2674	EA	7.99	
1612	Uni strut Clevis Hngr, 1-5/8" Chann el P2677	EA	9.44	
1613	Add For Uni strut Swivel Nut	EA	0.99	
10200	Louvers, Corner Protection & Access Flooring			
10210	Metal Wall Louvers			
10214 0009	Louvers			
0010	Louvers, aluminum w/screen, residential, 8" x 8"	EA	13.72	0.13
0100	Louvers, aluminum w/screen, residential, 12" x 12"	EA	15.46	0.13
0200	Louvers, aluminum w/screen, residential, 12" x 18"	EA	19.24	0.23
0250	Louvers, aluminum w/screen, residential, 14" x 24"	EA	24.68	0.33
0300	Louvers, aluminum w/screen, residential, 18" x 24"	EA	27.23	0.40
0500	Louvers, aluminum w/screen, residential, 24" x 30"	EA	41.35	0.60
10260	Wall & Corner Guards			
10264 0009	Corner guards			
0010	Corner guards, 1.5PLF, 1" x 1" x 1/4", steel angle w/anchors	LF	6.99	0.87
0400	Corner guards, for galvanized angles, add		1.28	
0050	Corner guards, 3PLF, 2" x 2" x 3/16", steel angle w/anchors	LF	9.37	0.87
0400	Corner guards, for galvanized angles, add		2.04	
0150	Corner guards, 4.5PLF, 2" x 3" x 1/4", steel angle w/anchors	LF	9.92	1.16
0400	Corner guards, for galvanized angles, add		2.19	
0200	Corner guards, 6.1PLF, 3" x 3" x 5/16", steel angle w/anchors	LF	10.91	0.83
0400	Corner guards, for galvanized angles, add		2.49	
0250	Corner guards, 7.2PLF, 3" x 4" x 5/16", steel angle w/anchors	LF	11.64	0.93
0400	Corner guards, for galvanized angles, add		2.64	
0300	Corner guards, 8.2PLF, 4" x 4" x 5/16", steel angle w/anchors	LF	13.59	0.80
0400	Corner guards, for galvanized angles, add		3.20	
10266 0010	Corner protection			
0500	Corner protection, 3" leg, vinyl acrylic, adhesive mount	LF	8.16	0.40
0625	Corner protection, 2.75" leg, vinyl acrylic, adhesive mount	LF	6.77	0.40
0670	Corner protection, 3/4" leg, vinyl acrylic, adhesive mount	LF	3.63	0.30
10270	Access Flooring			
10275 0010	Pedestal access floors			
0020	Pedestal access fl, no covering, <6000 SF, prt bd or stl panels	SF	7.31	0.17
0500	Pedestal access flr panels, for carpet covering, add		5.00	
0510	Pedestal access flr panels, for vinyl flr covering, add		4.50	
0300	Pedestal access fl, >6000 SF, met/prt bd/stl pnl, met coved	SF	7.21	0.17
0500	Pedestal access flr panels, for carpet covering, add		5.00	
0510	Pedestal access flr panels, for vinyl flr covering, add		4.50	
0350	Pedestal access fl, no covering, perf, 24", prt bd or stl panels	SF	19.38	0.20
0500	Pedestal access flr panels, for carpet covering, add		5.00	
0510	Pedestal access flr panels, for vinyl flr covering, add		4.50	
1050	Pedestal access fl, pedestals, 6" to 12"	EA	11.59	1.06
1210	Pedestal access fl, approach ramps	SF	23.40	0.93
1400	Pedestal access fl, stringers, 2' long	LF	3.93	0.67
1450	Pedestal access fl, stringers, 6' long	LF	3.75	0.93
1475	Pedestal access fl, elevated floor assembly	SF	6.71	0.13
1500	Pedestal access fl, handrail, 2 rail, aluminum	LF	97.18	4.23
1600	Pedestal access fl, fascia plate	LF	18.87	2.73
10300	Fireplaces, Exterior Specialties & Flagpoles			
10350	Ground Set Flagpoles			
Note: All are installed in a 2CY concrete base and fully rigged. Base not included in cost.				
10352 0010	Flagpole			
10352 0099	Aluminum tapered, ground set			
0100	Flagpole, al, tapered, ground set 20' high, no base or fdn	EA	973.27	96.34
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		155.07	
3930	Flagpole, al tapered, ground set, for stainless steel, add		4,522.91	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3940	Flagpole, al tapered, ground set, for finished bronze, add		807.66	
0200	Flagpole, al, tapered, ground set 25' high, no base or fdn	EA	1,050.75	96.34
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		159.81	
3930	Flagpole, al tapered, ground set, for stainless steel, add		4,661.09	
3940	Flagpole, al tapered, ground set, for finished bronze, add		832.34	
0300	Flagpole, al, tapered, ground set 30' high, no base or fdn	EA	1,274.01	103.34
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		201.08	
3930	Flagpole, al tapered, ground set, for stainless steel, add		5,864.74	
3940	Flagpole, al tapered, ground set, for finished bronze, add		1,047.28	
0500	Flagpole, al, tapered, ground set 40' high, no base or fdn	EA	2,212.62	123.91
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		400.17	
3930	Flagpole, al tapered, ground set, for stainless steel, add		11,671.66	
3940	Flagpole, al tapered, ground set, for finished bronze, add		2,084.23	
0600	Flagpole, al, tapered, ground set 50' high, no base or fdn	EA	2,922.94	152.61
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		544.48	
3930	Flagpole, al tapered, ground set, for stainless steel, add		15,880.55	
3940	Flagpole, al tapered, ground set, for finished bronze, add		2,835.81	
0700	Flagpole, al, tapered, ground set 60' high, no base or fdn	EA	4,793.32	158.01
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		975.92	
3930	Flagpole, al tapered, ground set, for stainless steel, add		28,464.38	
3940	Flagpole, al tapered, ground set, for finished bronze, add		5,082.93	
10352 3010 Fiberglass, tapered, ground set				
3050	Flagpole, fiberglass, no base or fdn, tapered, ground set, 25'	EA	1,238.85	100.68
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		204.95	
3930	Flagpole, al tapered, ground set, for stainless steel, add		5,977.79	
3940	Flagpole, al tapered, ground set, for finished bronze, add		1,067.46	
3450	Flagpole, fiberglass, no base or fdn, tapered, ground set, 50'	EA	4,069.11	165.90
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		819.56	
3930	Flagpole, al tapered, ground set, for stainless steel, add		23,903.74	
3940	Flagpole, al tapered, ground set, for finished bronze, add		4,268.53	
10352 3599 Bonderized steel, tapered				
3600	Flagpole, bonderized steel, no base or fdn, tapered, 25' high	EA	1,031.01	72.26
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		155.07	
3930	Flagpole, al tapered, ground set, for stainless steel, add		4,522.91	
3940	Flagpole, al tapered, ground set, for finished bronze, add		807.66	
3700	Flagpole, bonderized steel, no base or fdn, tapered, 50' high	EA	2,054.25	73.16
3900	Flagpole, al tapered, ground set, for top eagle, add		100.00	
3910	Flagpole, al tapered, ground set, for rope lock box, add		150.00	
3920	Flagpole, al tapered, ground set, for steel tapered, add		335.99	
3930	Flagpole, al tapered, ground set, for stainless steel, add		9,799.72	
3940	Flagpole, al tapered, ground set, for finished bronze, add		1,749.95	
10354 Wall-Mounted Flagpoles				
10355 0010 Flagpole				
10355 0999 Aluminum				
1000	Flagpole, structure mtd, al, 15' high	EA	945.89	73.49
2800	Flagpole, structure mounted, for top eagle, add		100.00	
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		156.28	
2830	Flagpole, structure mounted, for stainless steel, add		4,558.12	
2840	Flagpole, structure mounted, for finished bronze, add		813.95	
1100	Flagpole, structure mtd, al, 18' high	EA	1,256.20	101.37
2800	Flagpole, structure mounted, for top eagle, add		100.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		220.98	
2830	Flagpole, structure mounted, for stainless steel, add		6,445.18	
2840	Flagpole, structure mounted, for finished bronze, add		1,150.93	
10355 1299 Aluminum vertical wall set, tapered, with base				
1300	Flagpole, structure mtd, w/ base, 20' H, al, vert wall set,	EA	1,283.63	105.34
2800	Flagpole, structure mounted, for top eagle, add		100.00	
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		177.21	
2830	Flagpole, structure mounted, for stainless steel, add		5,168.73	
2840	Flagpole, structure mounted, for finished bronze, add		922.99	
1350	Flagpole, structure mtd, w/ base, 24' H, al, vert wall set,	EA	1,626.37	115.40
2800	Flagpole, structure mounted, for top eagle, add		100.00	
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		233.30	
2830	Flagpole, structure mounted, for stainless steel, add		6,804.56	
2840	Flagpole, structure mounted, for finished bronze, add		1,215.10	
2300	Flagpole, structure mtd, 10' long, al, outrigger poles w/base	EA	1,090.45	72.67
2800	Flagpole, structure mounted, for top eagle, add		100.00	
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		157.74	
2830	Flagpole, structure mounted, for stainless steel, add		4,600.82	
2840	Flagpole, structure mounted, for finished bronze, add		821.58	
2600	Flagpole, structure mtd, 20' long, al, outrigger poles w/base	EA	1,491.31	104.81
2800	Flagpole, structure mounted, for top eagle, add		100.00	
2810	Flagpole, structure mounted, for rope lock box, add		150.00	
2820	Flagpole, structure mounted, for steel tapered, add		221.32	
2830	Flagpole, structure mounted, for stainless steel, add		6,455.19	
2840	Flagpole, structure mounted, for finished bronze, add		1,152.71	

10400 Identifying & Pedestrian Control Devices

10410 Directories

10414 3599 Open face directory

3600	Directory boards, hardwood framed, w/letters on felt, open	SF	36.41	3.46
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		9.10	
4320	Directory boards, for exterior construction water-proof, add		2.09	
4330	Directory boards, for free standing type incl foundation, add		9.10	
3610	Directory boards, chrome plated steel fr, w/letters on felt,	SF	47.35	4.36
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		11.84	
4320	Directory boards, for exterior construction water-proof, add		3.40	
4330	Directory boards, for free standing type incl foundation, add		11.84	
3620	Directory boards, aluminum framed, w/letters on felt, open	SF	32.65	3.76
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		8.16	
4320	Directory boards, for exterior construction water-proof, add		1.64	
4330	Directory boards, for free standing type incl foundation, add		8.16	
3630	Directory boards, bronze framed, w/letters on felt, open face	SF	46.93	4.23
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		11.73	
4320	Directory boards, for exterior construction water-proof, add		3.35	
4330	Directory boards, for free standing type incl foundation, add		11.73	
3640	Directory boards, glass encl, chalkboard, al fr	SF	29.77	4.86
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		7.44	
4320	Directory boards, for exterior construction water-proof, add		1.29	
4330	Directory boards, for free standing type incl foundation, add		7.44	
3650	Directory boards, glass encl, tackboard, al fr	SF	48.94	8.26
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		12.24	
4320	Directory boards, for exterior construction water-proof, add		3.59	
4330	Directory boards, for free standing type incl foundation, add		12.24	
3660	Directory boards, glass encl, visual aid board, al fr	SF	48.00	4.53
4300	Directory boards, for attaching to gypsum board walls, add		1.90	
4310	Directory boards, for illumination, add		12.00	
4320	Directory boards, for exterior construction water-proof, add		3.48	
4330	Directory boards, for free standing type incl foundation, add		12.00	
3670	Remove & Relocate Frmd Chkless BD, Includes Storage & Cleaning	EA	53.68	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4300	Directory boards, for attaching to gypsum board walls, add		5.37	
4310	Directory boards, for illumination, add		13.42	
4320	Directory boards, for exterior construction water-proof, add		0.00	
4330	Directory boards, for free standing type incl foundation, add		13.42	
3680	Alum Framed Chalkless Dry Erase Board	SF	11.93	2.78
4300	Directory boards, for attaching to gypsum board walls, add		0.50	
4310	Directory boards, for illumination, add		2.98	
4320	Directory boards, for exterior construction water-proof, add		0.83	
4330	Directory boards, for free standing type incl foundation, add		2.98	
3690	Chalkboard Wood/Alum Frame, Horz Slide, 4 Panels, Wall Hung	SF	21.84	2.78
4300	Directory boards, for attaching to gypsum board walls, add		1.87	
4310	Directory boards, for illumination, add		5.46	
4320	Directory boards, for exterior construction water-proof, add		0.38	
4330	Directory boards, for free standing type incl foundation, add		5.46	
10414 3999 Glass encased directory				
4000	Directory boards, al fr, w/letters on felt, glass encl	SF	100.31	14.08
4300	Directory boards, for attaching to gypsum board walls, add		5.33	
4310	Directory boards, for illumination, add		25.08	
4320	Directory boards, for exterior construction water-proof, add		5.65	
4330	Directory boards, for free standing type incl foundation, add		25.08	
4010	Directory boards, bronze fr, w/letters on felt, glass encl	SF	113.28	14.21
4300	Directory boards, for attaching to gypsum board walls, add		5.33	
4310	Directory boards, for illumination, add		28.32	
4320	Directory boards, for exterior construction water-proof, add		7.20	
4330	Directory boards, for free standing type incl foundation, add		28.32	
4020	Directory boards, sst fr, w/letters on felt, glass encl	SF	145.86	12.01
4300	Directory boards, for attaching to gypsum board walls, add		5.33	
4310	Directory boards, for illumination, add		36.47	
4320	Directory boards, for exterior construction water-proof, add		11.11	
4330	Directory boards, for free standing type incl foundation, add		36.47	
4030	Directory boards, chrome fr, w/letters on felt, glass encl	SF	115.16	10.65
4300	Directory boards, for attaching to gypsum board walls, add		5.33	
4310	Directory boards, for illumination, add		28.79	
4320	Directory boards, for exterior construction water-proof, add		7.43	
4330	Directory boards, for free standing type incl foundation, add		28.79	
10430 Signs				
10430 0010 Signs Plaques				
10430 4599 Cast plaque				
4600	Signs, cast plaque, w/lettering incl emblem 1-4 SF, bronze	SF	383.27	5.49
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-41.83	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-73.50	
4610	Signs, cast plaque, aluminum w/lettering incl emblem 1-4 SF	SF	275.58	5.56
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-29.98	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-50.88	
10430 4619 Engraved plaque				
4620	Signs, engraved plaque, incl emblem 1-4 SF, brass	SF	383.27	12.68
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-41.83	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-73.50	
4640	Signs, engraved plaque, incl emblem 1-4 SF, sst	SF	733.26	14.54
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-80.33	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-147.00	
4650	Signs, engraved plaque, incl emblem 1-4 SF, aluminum	SF	302.50	10.48
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-32.94	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-56.54	
10430 4659 Built-up plaque				
4660	Signs, built-up plaque, incl emblem 1-4 SF, bronze	SF	383.27	10.12
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-41.83	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-73.50	
4670	Signs, built-up plaque, copper & bronze, incl emblem 1-4 SF	SF	230.79	5.86
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-25.05	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-41.48	
4680	Signs, built-up plaque, copper & aluminum, incl emblem 1-4 SF	SF	163.09	3.69
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-17.61	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-27.26	
10430 4699 Nameplate plaque				
4700	Signs, nameplate plaque, bronze, including emblem 1-4 SF, cast	SF	295.50	8.39
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-32.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4910	Signs, plaques, for sizes over 10 SF each, deduct		-55.07	
4710	Signs, nameplate plaque, incl emblem, 1-4 SF, aluminum	SF	247.58	4.16
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-26.90	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-45.00	
4720	Signs, nameplate plaque, engraved, 1-4 SF, bronze	EA	109.31	4.69
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-11.69	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-15.97	
4730	Signs, nameplate plaque, engraved, 1-4 SF, aluminum	EA	97.73	4.16
4900	Signs, plaques, for sizes from 5 to 10 SF each, deduct		-10.42	
4910	Signs, plaques, for sizes over 10 SF each, deduct		-13.53	
10434 0009	Signs Letters Separate Letters-Raised			
10434 0009	Letters Mounted on Masonry Or Concrete			
0010	Signs, letters, 2" high, 3/8" deep, cast bronze	EA	25.44	2.00
2900	Signs, letters, for polished aluminum add		1.72	
2910	Signs, letters, for clear anodized aluminum add		2.87	
2920	Signs, letters, for colored anodized aluminum add		4.31	
2930	Signs, letters, for profiled & color enameled letters, add		7.18	
2940	Signs, letters, for polished bronze, add		0.72	
2950	Signs, letters, for oxidized bronze, add		3.16	
2960	Signs, letters, for flush wall mounting, deduct		-2.38	
0050	Signs, letters, 2" high, 1/2" deep, cast aluminum	EA	23.25	2.40
2900	Signs, letters, for polished aluminum add		1.46	
2910	Signs, letters, for clear anodized aluminum add		2.43	
2920	Signs, letters, for colored anodized aluminum add		3.65	
2930	Signs, letters, for profiled & color enameled letters, add		6.08	
2940	Signs, letters, for polished bronze, add		0.61	
2950	Signs, letters, for oxidized bronze, add		2.68	
2960	Signs, letters, for flush wall mounting, deduct		-2.27	
0100	Signs, letters, 4" high, 3/8" deep, cast bronze	EA	38.73	2.76
2900	Signs, letters, for polished aluminum add		2.87	
2910	Signs, letters, for clear anodized aluminum add		4.79	
2920	Signs, letters, for colored anodized aluminum add		7.18	
2930	Signs, letters, for profiled & color enameled letters, add		11.97	
2940	Signs, letters, for polished bronze, add		1.20	
2950	Signs, letters, for oxidized bronze, add		5.27	
2960	Signs, letters, for flush wall mounting, deduct		-3.42	
0140	Signs, letters, 4" high, 1/2" deep, cast aluminum	EA	29.14	2.76
2900	Signs, letters, for polished aluminum add		1.72	
2910	Signs, letters, for clear anodized aluminum add		2.87	
2920	Signs, letters, for colored anodized aluminum add		4.31	
2930	Signs, letters, for profiled & color enameled letters, add		7.18	
2940	Signs, letters, for polished bronze, add		0.72	
2950	Signs, letters, for oxidized bronze, add		3.16	
2960	Signs, letters, for flush wall mounting, deduct		-2.94	
0200	Signs, letters, 6" high x 1/2" deep, cast aluminum	EA	41.19	3.36
2900	Signs, letters, for polished aluminum add		2.66	
2910	Signs, letters, for clear anodized aluminum add		4.43	
2920	Signs, letters, for colored anodized aluminum add		6.65	
2930	Signs, letters, for profiled & color enameled letters, add		11.09	
2940	Signs, letters, for polished bronze, add		1.11	
2950	Signs, letters, for oxidized bronze, add		4.88	
2960	Signs, letters, for flush wall mounting, deduct		-3.96	
0250	Signs, letters, 6" high x 1/2" deep, cast bronze	EA	49.29	2.50
2900	Signs, letters, for polished aluminum add		3.63	
2910	Signs, letters, for clear anodized aluminum add		6.05	
2920	Signs, letters, for colored anodized aluminum add		9.08	
2930	Signs, letters, for profiled & color enameled letters, add		15.14	
2940	Signs, letters, for polished bronze, add		1.51	
2950	Signs, letters, for oxidized bronze, add		6.66	
2960	Signs, letters, for flush wall mounting, deduct		-4.37	
0600	Signs, letters, 8" high, 3/4" deep, cast aluminum	EA	46.63	3.30
2900	Signs, letters, for polished aluminum add		3.31	
2910	Signs, letters, for clear anodized aluminum add		5.52	
2920	Signs, letters, for colored anodized aluminum add		8.28	
2930	Signs, letters, for profiled & color enameled letters, add		13.81	
2940	Signs, letters, for polished bronze, add		1.38	
2950	Signs, letters, for oxidized bronze, add		6.07	
2960	Signs, letters, for flush wall mounting, deduct		-4.23	
0750	Signs, letters, 8" high, 5/8" deep, cast bronze	EA	70.09	3.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2900	Signs, letters, for polished aluminum add		5.95	
2910	Signs, letters, for clear anodized aluminum add		9.92	
2920	Signs, letters, for colored anodized aluminum add		14.88	
2930	Signs, letters, for profiled & color enameled letters, add		24.81	
2940	Signs, letters, for polished bronze, add		2.48	
2950	Signs, letters, for oxidized bronze, add		10.91	
2960	Signs, letters, for flush wall mounting, deduct		-5.55	
0800	Signs, letters, 10" high x 3/4" deep, cast aluminum	EA	56.06	3.96
2900	Signs, letters, for polished aluminum add		4.27	
2910	Signs, letters, for clear anodized aluminum add		7.12	
2920	Signs, letters, for colored anodized aluminum add		10.67	
2930	Signs, letters, for profiled & color enameled letters, add		17.79	
2940	Signs, letters, for polished bronze, add		1.78	
2950	Signs, letters, for oxidized bronze, add		7.83	
2960	Signs, letters, for flush wall mounting, deduct		-4.85	
1010	Signs, letters, 10" high x 1" deep, cast bronze	EA	99.79	3.69
2900	Signs, letters, for polished aluminum add		9.07	
2910	Signs, letters, for clear anodized aluminum add		15.12	
2920	Signs, letters, for colored anodized aluminum add		22.68	
2930	Signs, letters, for profiled & color enameled letters, add		37.80	
2940	Signs, letters, for polished bronze, add		3.78	
2950	Signs, letters, for oxidized bronze, add		16.63	
2960	Signs, letters, for flush wall mounting, deduct		-7.41	
1100	Signs, letters, 12" high x 1" deep, cast aluminum	EA	75.03	5.29
2900	Signs, letters, for polished aluminum add		5.64	
2910	Signs, letters, for clear anodized aluminum add		9.40	
2920	Signs, letters, for colored anodized aluminum add		14.10	
2930	Signs, letters, for profiled & color enameled letters, add		23.50	
2940	Signs, letters, for polished bronze, add		2.35	
2950	Signs, letters, for oxidized bronze, add		10.34	
2960	Signs, letters, for flush wall mounting, deduct		-6.55	
1150	Signs, letters, 12" high x 1" deep, cast bronze	EA	115.08	4.16
2900	Signs, letters, for polished aluminum add		10.45	
2910	Signs, letters, for clear anodized aluminum add		17.41	
2920	Signs, letters, for colored anodized aluminum add		26.12	
2930	Signs, letters, for profiled & color enameled letters, add		43.53	
2940	Signs, letters, for polished bronze, add		4.35	
2950	Signs, letters, for oxidized bronze, add		19.15	
2960	Signs, letters, for flush wall mounting, deduct		-8.56	
1550	Signs, letters, 14" high x 1" deep, cast aluminum	EA	87.98	37.14
2900	Signs, letters, for polished aluminum add		6.56	
2910	Signs, letters, for clear anodized aluminum add		10.94	
2920	Signs, letters, for colored anodized aluminum add		16.41	
2930	Signs, letters, for profiled & color enameled letters, add		27.35	
2940	Signs, letters, for polished bronze, add		2.74	
2950	Signs, letters, for oxidized bronze, add		12.03	
2960	Signs, letters, for flush wall mounting, deduct		-7.73	
1560	Signs, letters, 14" high x 1" deep, cast bronze	EA	146.55	5.82
2900	Signs, letters, for polished aluminum add		13.59	
2910	Signs, letters, for clear anodized aluminum add		22.65	
2920	Signs, letters, for colored anodized aluminum add		33.98	
2930	Signs, letters, for profiled & color enameled letters, add		56.64	
2940	Signs, letters, for polished bronze, add		5.66	
2950	Signs, letters, for oxidized bronze, add		24.92	
2960	Signs, letters, for flush wall mounting, deduct		-10.66	
1700	Signs, letters, 16" high x 1" deep, cast aluminum	EA	130.57	10.88
2900	Signs, letters, for polished aluminum add		10.75	
2910	Signs, letters, for clear anodized aluminum add		17.92	
2920	Signs, letters, for colored anodized aluminum add		26.88	
2930	Signs, letters, for profiled & color enameled letters, add		44.81	
2940	Signs, letters, for polished bronze, add		4.48	
2950	Signs, letters, for oxidized bronze, add		19.71	
2960	Signs, letters, for flush wall mounting, deduct		-10.62	
1750	Signs, letters, 16" high x 1" deep, cast bronze	EA	171.23	6.26
2900	Signs, letters, for polished aluminum add		15.63	
2910	Signs, letters, for clear anodized aluminum add		26.05	
2920	Signs, letters, for colored anodized aluminum add		39.08	
2930	Signs, letters, for profiled & color enameled letters, add		65.14	
2940	Signs, letters, for polished bronze, add		6.51	
2950	Signs, letters, for oxidized bronze, add		28.66	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2960	Signs, letters, for flush wall mounting, deduct		-12.66	
10434 4000	Building Signage			
4600	Signs, 3' dia federal medallion	EA	2,320.18	124.43
4610	Signs, 4 SF custom die medallion	EA	5,561.94	262.61
4620	Signs, sculptured symbology medallion, die cast	SF	1,363.86	1.83
10434 6499	Flexible door sign, adhesive back			
6500	Signs, flexible door sign, adhesive back, 2" x 8"	EA	11.29	1.24
6510	Signs, flexible door sign, adhesive back, 4" x 4"	EA	11.77	1.30
6520	Signs, flexible door sign, adhesive back, 6" x 7"	EA	17.23	1.72
6530	Signs, flexible door sign, adhesive back, 6" x 9"	EA	19.75	1.86
6540	Signs, flexible door sign, adhesive back, 10" x 9"	EA	26.77	1.95
6550	Signs, flexible door sign, adhesive back, 10" x 12"	EA	33.61	2.26
10434 6559	Hard plastic door sign, adhesive back			
6560	Signs, hard plastic dr sign, w/o frame, adhesive back, 3" x 8"	EA	15.64	1.61
6570	Signs, hard plastic dr sign, w/o frame, adhesive back, 4" x 4"	EA	13.23	1.33
6580	Signs, hard plastic dr sign, w/o frame, adhesive back, 4" x 12"	EA	22.88	1.84
6590	Signs, hard plastic dr sign, 3" x 8" w/frame, adhesive back	EA	22.32	1.52
6600	Signs, hard plastic dr sign, 4" x 4" w/frame, adhesive back	EA	16.15	1.04
6610	Signs, hard plastic dr sign, 4" x 12" w/frame, adhesive back	EA	28.49	1.50
10434 6700	Sign Blanks, Mounted With Screws Or Adhesive			
	Note: Foam Tape, Wo Frame, Assorted Custom Colors, Rounded Corners.			
6710	Sign Blank, Wo Frame, Assorted Colors, W Rounded Corners	SF	10.13	2.28
10434 6800	Sign			
6810	Remove & Reinstall Interior Door Sign	EA	22.19	
10440 6000	Letters, Vinyl, Adhesive Backed, Mounted On			
	Note: Aluminum Or Plastic, Any Font Or Color, Capital, Lower Case, Number, Symbol, Punctuation Mark, includes Mounting On Sign.			
6001	1/2" High Vinyl Letter	EA	0.79	
6002	3/4" High Vinyl Letter	EA	0.89	
6003	1" High Vinyl Letter	EA	0.98	
6004	1-1/2" High Vinyl Letter	EA	1.48	
6005	2" High Vinyl Letter	EA	1.67	
6006	3" High Vinyl Letter	EA	2.35	
6007	4" High Vinyl Letter	EA	2.74	
6008	6" High Vinyl Letter	EA	3.82	
6009	8" High Vinyl Letter	EA	4.61	
6011	10" High Vinyl Letter	EA	6.47	
10440 7000	LOGO, Multi-color, Silk Screwed On Adhesive Backed Vinyl, Includes Mounting On Sign.			
7001	4" Wide x 6" High Logo	EA	95.27	
7002	8" Wide x 10" High Logo	EA	131.38	
7003	12" Wide x 15" High Logo	EA	167.47	
7004	18" Wide x 22" High Logo	EA	203.60	
10450	Turnstiles			
10451 0011	Turnstiles (ONE Way) Impenetrability			
1400	Turnstiles, type "B", free turn 1 dir, 7' scy turnstile w/auto	EA	3,366.63	140.98
1420	Turnstiles, type "B", free turn 2 dir, 7' scy turnstile w/auto	EA	3,357.48	163.91
1440	Turnstiles, type "AA", free turn 1 dir, 7' scy turnstile w/auto	EA	3,763.82	129.76
1460	Turnstiles, type "AA", free turn 2 dir, 7' scy turnstile w/auto	EA	3,859.93	149.16
10460	Metal Detectors			
10460 3000	Metal Detector			
3001	Metal Detector - Solid State With Interchangeable Functions	EA	6,951.29	
10500	Lockers, Protective Covers & Postal Specialties			
10504	Metal Lockers			
10505 0011	Lockers			
10505 0109	Single tier box locker			
0110	Lockers, steel, 12" x 15" x 72", baked enamel, single tier box	EA	150.72	7.18
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		11.33	
1220	Lockers, steel, baked enam for stl mesh door, add		28.33	
1230	Lockers, steel, baked enam for perforated door, add		5.67	
1240	Lockers, steel, baked enam for full louvered door, add		11.33	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1250	Lockers, steel, baked enam for integrated bench/seat, add		11.33	
1260	Lockers, steel, baked enam for security box, add		22.66	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		169.98	
0120	Lockers, steel, 18" x 15" x 72", baked enamel, single tier box	EA	171.71	6.69
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		13.43	
1220	Lockers, steel, baked enam for stl mesh door, add		33.58	
1230	Lockers, steel, baked enam for perforated door, add		6.72	
1240	Lockers, steel, baked enam for full louvered door, add		13.43	
1250	Lockers, steel, baked enam for integrated bench/seat, add		13.43	
1260	Lockers, steel, baked enam for security box, add		26.86	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		201.47	
0130	Lockers, steel, 12" x 18" x 72", baked enamel, single tier box	EA	156.67	7.07
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		11.93	
1220	Lockers, steel, baked enam for stl mesh door, add		29.82	
1230	Lockers, steel, baked enam for perforated door, add		5.96	
1240	Lockers, steel, baked enam for full louvered door, add		11.93	
1250	Lockers, steel, baked enam for integrated bench/seat, add		11.93	
1260	Lockers, steel, baked enam for security box, add		23.85	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		178.91	
0140	Lockers, steel, 18" x 18" x 72", baked enamel, single tier box	EA	181.70	8.45
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		14.43	
1220	Lockers, steel, baked enam for stl mesh door, add		36.08	
1230	Lockers, steel, baked enam for perforated door, add		7.22	
1240	Lockers, steel, baked enam for full louvered door, add		14.43	
1250	Lockers, steel, baked enam for integrated bench/seat, add		14.43	
1260	Lockers, steel, baked enam for security box, add		28.86	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		216.45	
10505 0409 Double tier				
0410	Lockers, steel, baked enamel, double tier, 12" x 15" x 36"	EA	114.53	3.96
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		10.03	
1220	Lockers, steel, baked enam for stl mesh door, add		25.07	
1230	Lockers, steel, baked enam for perforated door, add		5.01	
1240	Lockers, steel, baked enam for full louvered door, add		10.03	
1250	Lockers, steel, baked enam for integrated bench/seat, add		10.03	
1260	Lockers, steel, baked enam for security box, add		20.06	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		150.42	
0420	Lockers, steel, baked enamel, double tier, 18" x 15" x 36"	EA	128.81	3.93
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		11.46	
1220	Lockers, steel, baked enam for stl mesh door, add		28.64	
1230	Lockers, steel, baked enam for perforated door, add		5.73	
1240	Lockers, steel, baked enam for full louvered door, add		11.46	
1250	Lockers, steel, baked enam for integrated bench/seat, add		11.46	
1260	Lockers, steel, baked enam for security box, add		22.91	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		171.84	
0430	Lockers, steel, baked enamel, double tier, 12" x 18" x 36"	EA	120.13	4.11
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		10.59	
1220	Lockers, steel, baked enam for stl mesh door, add		26.47	
1230	Lockers, steel, baked enam for perforated door, add		5.29	
1240	Lockers, steel, baked enam for full louvered door, add		10.59	
1250	Lockers, steel, baked enam for integrated bench/seat, add		10.59	
1260	Lockers, steel, baked enam for security box, add		21.18	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		158.82	
0440	Lockers, steel, baked enamel, double tier, 18" x 18" x 36"	EA	132.08	3.25
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		11.78	
1220	Lockers, steel, baked enam for stl mesh door, add		29.46	
1230	Lockers, steel, baked enam for perforated door, add		5.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1240	Lockers, steel, baked enam for full louvered door, add		11.78	
1250	Lockers, steel, baked enam for integrated bench/seat, add		11.78	
1260	Lockers, steel, baked enam for security box, add		23.57	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		176.75	
10505 0499 Two person				
0500	Lockers, steel, baked enamel, two person, 18" x 15" x 72"	EA	239.51	10.14
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		20.21	
1220	Lockers, steel, baked enam for stl mesh door, add		50.53	
1230	Lockers, steel, baked enam for perforated door, add		10.11	
1240	Lockers, steel, baked enam for full louvered door, add		20.21	
1250	Lockers, steel, baked enam for integrated bench/seat, add		20.21	
1260	Lockers, steel, baked enam for security box, add		40.42	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		303.17	
0510	Lockers, steel, baked enamel, two person, 18" x 18" x 72"	EA	267.56	11.93
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		23.02	
1220	Lockers, steel, baked enam for stl mesh door, add		57.54	
1230	Lockers, steel, baked enam for perforated door, add		11.51	
1240	Lockers, steel, baked enam for full louvered door, add		23.02	
1250	Lockers, steel, baked enam for integrated bench/seat, add		23.02	
1260	Lockers, steel, baked enam for security box, add		46.03	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		345.24	
10505 0519 Duplex				
0520	Lockers, steel, baked enamel, duplex, 15" x 15" x 72"	EA	232.42	7.18
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		19.50	
1220	Lockers, steel, baked enam for stl mesh door, add		48.76	
1230	Lockers, steel, baked enam for perforated door, add		9.75	
1240	Lockers, steel, baked enam for full louvered door, add		19.50	
1250	Lockers, steel, baked enam for integrated bench/seat, add		19.50	
1260	Lockers, steel, baked enam for security box, add		39.00	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		292.53	
0530	Lockers, steel, baked enamel, duplex, 15" x 21" x 72"	EA	259.03	7.48
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		22.16	
1220	Lockers, steel, baked enam for stl mesh door, add		55.41	
1230	Lockers, steel, baked enam for perforated door, add		11.08	
1240	Lockers, steel, baked enam for full louvered door, add		22.16	
1250	Lockers, steel, baked enam for integrated bench/seat, add		22.16	
1260	Lockers, steel, baked enam for security box, add		44.33	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		332.45	
10505 1099 Wire meshed wardrobe				
1100	Lockers, wire meshed wardrobe, open front varsity type, fl mtd	EA	193.83	5.20
1200	Lockers, steel, baked enam for combination lock, add		9.00	
1210	Lockers, steel, baked enam for auto keyed lock, add		15.39	
1220	Lockers, steel, baked enam for stl mesh door, add		38.49	
1230	Lockers, steel, baked enam for perforated door, add		7.70	
1240	Lockers, steel, baked enam for full louvered door, add		15.39	
1250	Lockers, steel, baked enam for integrated bench/seat, add		15.39	
1260	Lockers, steel, baked enam for security box, add		30.79	
1270	Lockers, steel, baked enam for int partition shelf & rod, add		4.00	
1280	Lockers, steel, baked enam for stainless stl construction, add		230.91	
10505 1999 Locker bench				
2000	Lockers, locker bench, hardwood w/iron legs	LF	18.28	0.56
2010	Lockers, locker bench, pine w/iron legs	LF	18.28	0.60
2020	Lockers, locker bench, fabricated steel w/iron legs	LF	61.30	1.91
2030	Lockers, locker bench, plastic capped w/iron legs	LF	19.42	0.56
2040	Lockers, locker bench, presswood capped steel w/iron legs	LF	19.42	0.64
10505 3000 Quiet Lockers				
3001	9"x15"x72" Sgl Tier Locker	EA	97.67	
3002	12"x15"x72" Sgl Tier Locker	EA	99.39	
3003	15"x15"x72" Sgl Tier Locker	EA	110.61	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3004	9"x15"x36" Dbl Tier Locker	EA	57.67	
3005	12"x15"x36" Dbl Tier Locker	EA	57.67	
3006	15"x15"x36" Dbl Tier Locker	EA	61.39	
10505 3249	Rack			
3250	Lockers, rack w/24 wire mesh baskets	SET	474.16	33.62
3290	Lockers, rack w/ mesh baskets, for steel locked baskets, add		32.96	
3260	Lockers, rack w/30 wire mesh baskets	SET	475.12	31.42
3290	Lockers, rack w/ mesh baskets, for steel locked baskets, add		28.30	
3270	Lockers, rack w/36 wire mesh baskets	SET	646.05	44.24
3290	Lockers, rack w/ mesh baskets, for steel locked baskets, add		39.72	
3280	Lockers, rack w/42 wire mesh baskets	SET	747.21	52.17
3290	Lockers, rack w/ mesh baskets, for steel locked baskets, add		44.79	
3300	Lockers, for built-in lock w/2 keys, add	EA	4.33	
3400	Lockers, add for padlocked door	EA	6.19	
3500	Lockers, add for combination & keyed door	EA	12.87	
10506	Locker Repair & Refinishing			
10506 1000	Locker Repair & Refinishing			
1001	Repair Locker To "As New" Condition	EA	93.73	
1002	18"x72" Sgl Tier Door & Frame Assembly	EA	130.80	
1003	12"x36" Dbl Tier Door	EA	80.84	
1004	12"x72" Dbl Tier Door	EA	130.80	
1005	15"x72" End Panel 16 Gauge	EA	74.66	
1006	21"x72" End Panel 24 Gauge	EA	62.31	
1007	12"x15" Shelf	EA	15.58	
1008	18"x21" Shelf	EA	18.70	
1009	36"x21" Shelf	EA	23.69	
1011	#90706 Padlock Staple Pair	EA	5.59	
10520	Fire Protection Specialties			
10521 0010	Fire equipment cabinets			
10521 0999	Portable extinguisher			
1000	Fire eqpt cab, port ext, single, 8"x12"x27", al door & fr	EA	182.44	10.24
1100	Fire eqpt cab, port ext, single, 8"x12"x27", stl door & fr	EA	140.98	9.94
1200	Fire eqpt cab, port ext, single, 8"x12"x27", sst door & fr	EA	228.21	12.01
2500	Fire eqpt cab, port ext, 8"x16"x38", al door & fr	EA	233.05	9.15
2600	Fire eqpt cab, port ext, 8"x16"x38", stl door & fr	EA	172.75	8.21
10521 3000	Hose rack assembly			
5200	Fire eqpt cab, stl door & fr, & ext, 30"x40"x8", hose rack assy	EA	304.61	83.53
5300	Fire eqpt cab, sst door & fr, & ext, 30"x40"x8", hose rack assy	EA	526.45	83.72
7200	Fire eqpt cab, stl door & fr, & ext, 30"x44"x8", hose rack assy	EA	308.38	77.02
7300	Fire eqpt cab, sst door & fr, & ext, 30"x44"x8", hose rack assy	EA	534.52	82.78
10522 0010	Fire extinguishers			
10522 0119	CO2			
0120	Fire extinguishers, CO2, portable w/swivel horn, 5 lb	EA	108.77	
0140	Fire extinguishers, CO2, w/hose & "H" horn, 10 lb	EA	161.00	
0160	Fire extinguishers, CO2, w/hose & "H" horn, 15 lb	EA	184.69	
0180	Fire extinguishers, CO2, w/hose & "H" horn, 20 lb	EA	222.38	
0400	Fire extinguishers, CO2, wheeled type, cart mounted, 150 lb	EA	1,076.89	
10522 1000	Dry chemical			
1040	Fire extinguishers, 2-1/2 lb, portable, painted, dry chem	EA	26.92	
1060	Fire extinguishers, 5 lb, std type, portable, painted, dry	EA	53.84	
1080	Fire extinguishers, 10 lb, std type, portable, painted, dry	EA	64.61	
1100	Fire extinguishers, 20 lb, std type, portable, painted, dry	EA	91.54	
1120	Fire extinguishers, 30 lb, std type, portable, painted, dry	EA	156.15	
1200	Fire extinguishers, 2-1/2 lb, std type, chrome plated, dry	EA	91.54	
1300	Fire extinguishers, 150 lb, pressurized, std, wheeled, dry	EA	1,507.65	
1400	Fire extinguishers, 250 lb, pressurized, std, wheeled, dry	EA	1,507.65	
2000	Fire extinguishers, 2-1/2 lb, ABC all purpose type, portable,	EA	26.92	
10522 3099	Foam type			
3100	Fire extinguishers, foam type, sst, 2-1/2 gallon	EA	215.38	
3150	Fire extinguishers, foam type, wheeled type, cart mtd, 30 gal	EA	5,922.90	
10522 4999	Pressurized water			
5000	Fire extinguishers, pressurized water, 2-1/2 gallon, sst	EA	76.46	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5010	2.5 Gal SST H2O Cartridge Extgr.	EA	173.07	
5020	2.5 Gal SST Loaded Steam Extgr.	EA	109.94	
10522 9399 Installation				
9400	Fire extinguishers, on wood, 12 or more, instl of extinguishers	EA	8.87	
9420	Fire extinguishers, on masonry or conc, instl of extinguishers	EA	17.75	
10535 Awnings				
10535 1000 Metal Awnings				
1001	Ribbed Aluminum Window Awnings, Clear Weather Resistant Finish	SF	17.92	2.55
1002	Custom Ribbed Aluminum Window Awning, Baked Enamel Finish	SF	15.86	2.24
10535 2000 Canvas Awnings				
2001	Canvas Awning, Waterproof Fabric Tubular Metal Framing	SF	13.83	2.24
10550 Mail Chutes				
10551 0009 Mail chutes				
10551 0009 Aluminum & glass				
0010	Mail chutes, al & glass, 14.25" wide, 4-5/8" deep	FLR	789.27	16.57
0300	Mail chutes, al & glass, 8.75" x 3.5", al	FLR	660.28	15.41
0400	Mail chutes, al & glass, 8.75" x 3.5", bronze or sst	FLR	974.03	17.73
10551 0499 Twin mail chutes, finished aluminum				
0500	Mail chutes, twin mail chutes, finished al	FLR	861.32	32.58
0505	Mail chutes, twin mail chutes, finished, bronze	FLR	1,432.07	36.87
10551 0509 Commercial mail chutes				
10551 0509 Letter slot brass				
Note: For Installation In Post Office Type Walls Or Partitions				
0510	Mail chutes, commercial, wall type or partition, letter slot	EA	328.17	8.42
0520	Mail chutes, commercial, wall or partition type, bulk mail slot	EA	744.87	8.32
10551 0599 Lobby collection boxes				
0600	Mail chutes, commercial, lobby collection boxes, al	EA	1,927.89	20.50
0700	Mail chutes, commercial, bronze or sst, lobby collection boxes	EA	2,302.81	19.93
10551 0799 Locked collection mail box				
0800	Mail chutes, commercial, 36" x 20" x 12", al, locked collection	EA	1,985.59	21.93
0900	Mail chutes, commercial, 36" x 20" x 12", bronze, locked	EA	2,347.42	21.17
10551 0999 Twin collection box				
1000	Mail chutes, commercial, 36" x 40" x 12", twin al collection	EA	2,683.65	28.39
1100	Mail chutes, commercial, 36" x 40" x 12", twin bronze	EA	3,154.25	25.23
10552 Mail Boxes				
10553 0009 Mail boxes				
10553 0009 Rear load mail box				
0010	Mail boxes horiz, key lock, 5"H x 6"W x 15"D, al, rear load	EA	43.10	2.90
10553 1809 Commercial letter box				
1810	Mail boxes, w/comb lock wall or partition type, commercial	EA	169.82	3.76
1820	Mail boxes, w/key lock wall or partition type, commercial	EA	171.97	3.56
10553 1899 Letter slot, residential				
1900	Mail boxes, letter slot, residential	EA	67.15	1.40
2400	Mail boxes, residential, galv steel, small 20" x 7" x 9"	EA	28.11	2.79
2460	Mail boxes, ranch style mail boxes	EA	65.10	2.50
2470	Mail boxes, apartment, 3.5"x 4.5"x 16", keyed for each tenant	EA	58.32	1.66

10600 Partitions & Storage Shelving

Note: Cubicle Prices Include Standard Units - Standard Height Glass And Glazing Included. For 25 Pct And 50 Pct Glass 1/4 In Plate Glass Is Used. For 100 Pct Glass 1/4 In Tempered Plate Is Used.

10604 Wire Mesh Partitions

10605 0010 Partitions, woven wire

10605 0609 Wall panels

0610	Partitions woven wire, wall panels, 3' wide, 7' high	EA	95.14	
0620	Partitions woven wire, wall panels, 3' wide, 8' high	EA	102.80	
0630	Partitions woven wire, wall panels, 3' wide, 10' high	EA	128.14	
0640	Partitions woven wire, wall panels, 2' wide, 7' high	EA	86.40	
0650	Partitions woven wire, wall panels, 2' wide, 8' high	EA	95.09	
0660	Partitions woven wire, wall panels, 2' wide, 10' high	EA	120.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0670	Partitions woven wire, wall panels, 1' wide, 7' high	EA	80.40	
0680	Partitions woven wire, wall panels, 1' wide, 8' high	EA	84.36	
0690	Partitions woven wire, wall panels, 1' wide, 10' high	EA	115.58	
10605 0899 Ceiling panels				
0900	Partitions woven wire, ceiling panels, 10' long, 2' wide	EA	105.09	2.53
1000	Partitions woven wire, ceiling panels, 10' long, 4' wide	EA	136.38	3.23
10605 1199 Panel with service window & shelf				
1200	Partitions woven wire, 5' wide, 7' high, panel w/service window	EA	290.32	10.42
1300	Partitions woven wire, 5' wide, 8' high, panel w/service window	EA	302.35	13.48
1400	Partitions woven wire, 5' wide, 10' high, panel w/service window	EA	318.19	13.48
10605 1499 Sliding doors				
1500	Partitions woven wire, 7' full height, sliding doors, 3' wide	EA	327.82	2.73
1550	Partitions woven wire, 8' full height, sliding doors, 3' wide	EA	356.88	2.73
1600	Partitions woven wire, 10' full height, sliding doors, 3' wide	EA	397.26	2.73
1610	Partitions woven wire, 7' full height, sliding doors, 4' wide	EA	378.11	3.29
1620	Partitions woven wire, 8' full height, sliding doors, 4' wide	EA	433.04	3.29
1630	Partitions woven wire, 10' full height, sliding doors, 4' wide	EA	506.44	3.29
1640	Partitions woven wire, 7' full height, sliding doors, 5' wide	EA	423.89	4.16
1650	Partitions woven wire, 8' full height, sliding doors, 5' wide	EA	633.52	4.16
1660	Partitions woven wire, 10' full height, sliding doors, 5' wide	EA	741.20	4.16

10613 Demountable Partitions

Note: Basic Unit Includes Baked Enamel Wall One Side And Gypsum Board Wall Other Side 2-1/2 In Thick With Door Frames 20 Ft C To C And Base. Complete, Installed W/O Doors

10615 0010 Partitions, movable office

10615 3509 Standard office partition

10615 3509 Baked enamel panel

3510	Partitions movable office, std, 8' H, baked enam, 100% flush	LF	142.47	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-12.58	
3520	Partitions movable office, 75% flush & 25% glass, std, 8' H,	LF	168.91	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-15.04	
3530	Partitions movable office, 50% flush & 50% glass, std, 8' H,	LF	193.46	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-17.49	
3540	Partitions movable office, std, 8' H, 100% glass	LF	250.67	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-22.41	

10615 3579 Plastic laminate

3580	Partitions movable office, std, 8' H, plstc lam, 100% flush	LF	152.55	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.04	
3590	Partitions movable office, 75% flush & 25% glass, std, 8' H,	LF	159.91	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.65	
3600	Partitions movable office, 50% flush & 50% glass, std, 8' H,	LF	158.02	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.46	

10615 3609 Vinyl

3610	Partitions movable office, std, 8' H, vinyl, 100% flush	LF	153.51	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.04	
3620	Partitions movable office, 75% flush & 25% glass, std, 8' H,	LF	160.17	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.65	
3630	Partitions movable office, 50% flush & 50% glass, std, 8' H,	LF	158.28	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-13.46	
10615 3699 Aluminum frame, vinyl				
3700	Partitions movable office, 100% flush, std, 8' H, Al fr, vinyl	LF	121.04	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-9.79	
3710	Partitions movable office, 75% flush, 25% glass, std, 8' H, Al fr,	LF	128.34	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-10.47	
3720	Partitions movable office, 50% flush, 50% glass, std, 8' H, Al fr,	LF	136.10	4.89
3800	Partitions, moveable office, for full height chalkboard, add		150.00	
3810	Partitions, moveable office, for full height tackboard, add		150.00	
3820	Partitions, moveable office, for soundproofing, add		28.00	
3830	Partitions, moveable office, for heights less than 8', deduct		-11.24	
10615 4399 Dwarf office partitions				
4400	Partitions movable office, enam panels stl fr 60" H, dwarf	LF	93.84	4.09
4410	Partitions movable office, enam 2 sides 60" H, dwarf office ptn	LF	95.77	4.09
4430	Partitions movable office, dwarf office ptn, vinyl 60" H	LF	88.13	4.09
4460	Partitions movable office, plstc lam 60" H, dwarf office ptn	LF	193.44	4.09
4470	Partitions movable office, al frame, vinyl, 60" H, dwarf	LF	188.61	4.09
10615 5000 Remove And Store Demountable Partitions				
5001	Remove, Store & Reinstall Demountable Partitions, Up to 8'	LF	23.44	
10617 Movable Metal Partitions				
10617 1000 Standard Office Cubicles				
Note: Up To And Including 8' In Height. Includes One Door Opening & Trim				
10617 1100 Steel Framed Type Framing				
10617 1110 Wth Baked Enamel Panels				
1111	Std Off Part, Baked Enamel Panels ST 8' High, 100% Flush & Moveabl	LF	101.47	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-8.47	
1112	Std Off Part, Baked Enamel Panels ST 8' High, 75% Flush&25%Glass, Mb	LF	123.45	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-10.49	
1113	Std Off Part, Baked Enamel Panels ST 8' High, 50% Flush&50%Glass, Mb	LF	146.62	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-12.80	
1114	Std Off Part, Baked Enamel Panels ST 8' High, w/100% Glass, Mvabl	LF	207.84	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-17.74	
10617 1120 Wth Natural Hardwood Panels				
1121	Std Off Part, Nat Hardwood Panel ST 8' High, 100% Flush & Movable	LF	200.41	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-17.81	
1122	Std Off Part, Nat Hardwood Panel ST 8' High, 75% Flush&25%Glass, Mb	LF	173.75	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-15.03	
1123	Std Off Part, Nat Hardwood Panel ST 8' High, 50% Flush&50%Glass, Mb	LF	144.07	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-12.06	
10617 1130 Wth Plastic Laminated Panels				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1131	Std Off Part, Plas.Lam Panels S T 8' High, 100% Flush & Mvable	LF	171.04	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-14.87	
1132	Std Off Part, Plas.Lam Panels S T 8' High, 75% Flush&25%Glass, Mv	LF	205.25	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-18.18	
1133	Std Off Part, Plas.Lam Panels S T 8' High, 50% Flush&50%Glass, Mv	LF	242.43	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-21.89	
10617 1140 With Vinyl Covered Panels				
1141	Std Off Part, Vinyl Panels ST 8' High, 100% Flush & Mvable	LF	105.77	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-8.27	
1142	Std Off Part, Vinyl Panels ST 8' High, 75% Flush&25%Glass, Mv	LF	161.71	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-13.78	
1143	Std Off Part, Vinyl Panels ST 8' High, 50% Flush&50%Glass, Mv	LF	194.11	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-17.02	
10617 1200 Aluminum Framed Type				
10617 1210 With Enameled Or Anodized Aluminum Panels				
1211	Std Off Part, Enamel/Anodized Pnl Alum 8' High, 100% Flush&Mvable	LF	163.13	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-14.64	
1212	Std Off Part, Enamel/Anodized Pnl Al 8' High, 75% Flush&25%Glass, Mb	LF	159.41	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-14.08	
1213	Std Off Part, Enamel/Anodized Pnl Al 8' High, 50% Flush&50%Glass, Mb	LF	148.25	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-12.97	
10617 1240 With Vinyl Covered Panels				
1241	Std Off Part, Vinyl Panels Alum 8' High, 100% Flush&Mvable	LF	158.05	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-13.50	
1242	Std Off Part, Vinyl Panels Al 8' High, 75% Flush&25%Glass, Mv	LF	163.09	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-13.92	
1243	Std Off Part, Vinyl Panels Al 8' High, 50% Flush&50%Glass, Mv	LF	165.20	
1301	For Soundproofing Add Per LF		2.00	
1302	For Heights 8 Ft 0 In (2.4M) Or Less Deduct		-14.13	
10617 1250 Remove & Replace Panels				
1251	Remove & Replace Panels	SF	3.35	
10617 2000 Office Dwarf Partitions 60 In (152Cm) High				
10617 2100 Steel Framed Type With Panels				
2101	Dwarf Off Part, Enameled Panels ST Frame 60"(152cm)H, Mvable	LF	81.09	
2102	Dwarf Off Part, Enameled Panels 2Sides, ST Fr 60"(152cm)H, Mvable	LF	191.22	
2103	Dwarf Off Part, Enameled Panels ST Frame 60"(152cm)H, Mvable	LF	98.47	
2104	Dwarf Off Part, Vinyl Panels ST Frame 60"(152cm)H, Mvable	LF	64.16	
10617 2200 Aluminum Framed Type With Panels				
2201	Dwarf Off Part, Anod/Baked En Pnl Al Frame 60"(152cm)H, Mvable	LF	334.25	
2202	Dwarf Off Part, Nat Hardwood Pnl Al Frame 60"(152cm)H, Mvable	LF	254.50	
2203	Dwarf Off Part, Pla Lam Panels A 1 Frame 60"(152cm)H, Mvable	LF	284.11	
2204	Dwarf Off Part, Vinyl Panels Al Frame 60"(152cm)H, Mvable	LF	201.22	
10617 3000 Standard Office Workstations				
3001	4 Ft Office Workstation	EA	3,070.87	
3002	5 Ft Office Workstation	EA	3,256.20	
3003	7 Ft Office Workstation	EA	4,159.72	
3004	4 Ft Reception Workstation	EA	2,823.76	
3005	7 Ft Conference Workstation	EA	4,770.71	
10617 4000 Accordion Folding Partitions				
4001	Vinyl Fabric Accordion Partition	SF	31.29	
10617 5000 Flat Operable Wall System				
5001	Individual Panel System	SF	48.07	
5002	Hinged Pair Panel System	SF	48.07	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
10629	Operable Walls			
10629 1000	Operable Walls			
1001	Operable Walls	SF	60.85	
10630	Portable Partitions			
10631 0009	Partitions, hospital			
0010	Partitions, hospital curtain track, ceiling mtd, box channel	LF	5.56	0.80
0100	Partitions, hospital, curtain track, suspended, box channel	LF	7.78	1.30
10671 1400	Single Shelf Unit Attached To Masonry Walls W Brackets			
1401	1 Baked Enamel ST Storage Shelf 10" (25cm)W for Conc Wall w/Bkt	LF	11.30	2.88
1501	For Stainless Steel Add		7.79	
1502	For Mesh Lined Add		1.56	
1503	For Sheetmetal Lined Add		1.71	
1504	For Attachment To Gypsum Board Walls Add		3.06	
1402	1 Baked Enamel ST Storage Shelf 12" (31cm)W for Conc Wall w/Bkt	LF	13.60	3.25
1501	For Stainless Steel Add		10.56	
1502	For Mesh Lined Add		2.11	
1503	For Sheetmetal Lined Add		2.32	
1504	For Attachment To Gypsum Board Walls Add		3.28	
1403	1 Baked Enamel ST Storage Shelf 15" (38cm)W for Conc Wall w/Bkt	LF	12.87	3.61
1501	For Stainless Steel Add		8.90	
1502	For Mesh Lined Add		1.78	
1503	For Sheetmetal Lined Add		1.96	
1504	For Attachment To Gypsum Board Walls Add		3.47	
1404	1 Baked Enamel ST Storage Shelf 18" (46cm)W for Conc Wall w/Bkt	LF	14.40	3.61
1501	For Stainless Steel Add		10.56	
1502	For Mesh Lined Add		2.11	
1503	For Sheetmetal Lined Add		2.32	
1504	For Attachment To Gypsum Board Walls Add		3.68	
1405	1 Baked Enamel ST Storage Shelf 24" (61cm)W for Conc Wall w/Bkt	LF	16.74	3.97
1501	For Stainless Steel Add		13.35	
1502	For Mesh Lined Add		2.67	
1503	For Sheetmetal Lined Add		2.94	
1504	For Attachment To Gypsum Board Walls Add		3.92	
10674	Storage & Shelving			
10677 0011	Shelving			
10677 0499	75" H baked enamel steel storage, open			
0500	Shelving, indl, 10" open, braced, 7 shelves, 75" H, baked	LF	57.45	4.56
2170	Shelving, indl, baked enam stl, for stainless stl, add		28.79	
2180	Shelving, indl, baked enam stl, for mesh lined, add		5.76	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		9.57	
0510	Shelving, indl, 12" open, braced, 7 shelves, 75" H, baked	LF	71.28	5.95
2170	Shelving, indl, baked enam stl, for stainless stl, add		45.44	
2180	Shelving, indl, baked enam stl, for mesh lined, add		9.09	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		10.25	
0520	Shelving, indl, 15" open, braced, 7 shelves, 75" H, baked	LF	81.67	7.64
2170	Shelving, indl, baked enam stl, for stainless stl, add		56.28	
2180	Shelving, indl, baked enam stl, for mesh lined, add		11.26	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		11.04	
0530	Shelving, indl, 18" open, braced, 7 shelves, 75" H, baked	LF	88.65	7.35
2170	Shelving, indl, baked enam stl, for stainless stl, add		61.23	
2180	Shelving, indl, baked enam stl, for mesh lined, add		12.25	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		11.96	
0540	Shelving, indl, 24" open, braced, 7 shelves, 75" H, baked	LF	96.57	7.53
2170	Shelving, indl, baked enam stl, for stainless stl, add		70.01	
2180	Shelving, indl, baked enam stl, for mesh lined, add		14.00	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		12.48	
0550	Shelving, indl, 30" open, braced, 7 shelves, 75" H, baked	LF	105.42	9.07
2170	Shelving, indl, baked enam stl, for stainless stl, add		79.88	
2180	Shelving, indl, baked enam stl, for mesh lined, add		15.98	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		13.04	
0560	Shelving, indl, 36" open, braced, 7 shelves, 75" H, baked	LF	122.76	10.29
2170	Shelving, indl, baked enam stl, for stainless stl, add		98.06	
2180	Shelving, indl, baked enam stl, for mesh lined, add		19.61	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		14.35	
10677 2049	40" H baked enamel steel storage, encl			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2050	Shelving, indl, 10" encl, braced, 4 shelves, 40" H, baked	LF	44.77	4.27
2170	Shelving, indl, baked enam stl, for stainless stl, add		21.84	
2180	Shelving, indl, baked enam stl, for mesh lined, add		4.37	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		7.55	
2060	Shelving, indl, 12" encl, braced, 4 shelves, 40" H, baked	LF	66.70	8.07
2170	Shelving, indl, baked enam stl, for stainless stl, add		52.23	
2180	Shelving, indl, baked enam stl, for mesh lined, add		10.45	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		7.97	
2070	Shelving, indl, 15" encl, braced, 4 shelves, 40" H, baked	LF	78.22	9.18
2170	Shelving, indl, baked enam stl, for stainless stl, add		63.53	
2180	Shelving, indl, baked enam stl, for mesh lined, add		12.71	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		8.97	
2080	Shelving, indl, 18" encl, braced, 4 shelves, 40" H, baked	LF	80.83	9.76
2170	Shelving, indl, baked enam stl, for stainless stl, add		65.70	
2180	Shelving, indl, baked enam stl, for mesh lined, add		13.14	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		9.26	
2090	Shelving, indl, 24" encl, braced, 4 shelves, 40" H, baked	LF	91.63	10.26
2170	Shelving, indl, baked enam stl, for stainless stl, add		78.08	
2180	Shelving, indl, baked enam stl, for mesh lined, add		15.62	
2190	Shelving, indl, baked enam stl, for atch to gypsum board walls, add		9.90	
10677 2099	32" H baked enamel steel storage, encl Fully Enclosed, Adjustable Shelves			
2100	Shelving, indl, 10" encl, braced, 3 shelves, 32" H, baked	LF	31.07	3.70
2110	Shelving, indl, 12" encl, braced, 3 shelves, 32" H, baked	LF	49.64	6.42
2120	Shelving, indl, 15" encl, braced, 3 shelves, 32" H, baked	LF	57.11	7.32
2130	Shelving, indl, 18" encl, braced, 3 shelves, 32" H, baked	LF	60.12	8.00
2140	Shelving, indl, 24" encl, braced, 3 shelves, 32" H, baked	LF	68.29	8.32
10700	Telephone Enclosures			
10750	Telephone Enclosures			
10751 1000	Telephone Booths			
1001	Shelf Type, Wall Hung	EA	843.70	
1002	Booth Type, Painted Steel, Indoor/Outdoor	EA	3,485.69	
1003	Booth Type, Stainless Steel, Indoor/Outdoor	EA	10,889.31	
1004	Outdoor Acoustical On Post	EA	1,487.12	
1005	Phone Carosel Pedestal Mounted With Dividers	EA	5,873.93	
1006	Outdoor Drive Up Type, Wall Mounted	EA	940.58	
1007	Outdoor Drive Up Type, Post Mounted Stainless Steel	EA	1,433.28	
1008	3 Binder Directory Shelf	EA	1,032.97	
10800	Toilet & Bath Accessories & Scales			
10820	Bath Accessories			
10820 1000	Dispensers And Receptacles Stainless Steel			
10824 0010	Bathroom accessories			
10824 0099	Bed pan holder			
0100	Bathroom accessories, bed pan holder, sst	EA	98.42	0.87
10824 0199	Curtain rod			
0200	Bathroom accessories, curtain rod, sst, 5' long, 1" dia	EA	48.21	2.53
10824 0203	Shower rod			
0204	Bathroom accessories, shower rod, chrome	EA	30.01	2.46
0301	Bathroom accessories, shower curtain rod, 5', decorative	EA	50.36	3.26
0310	Bathroom accessories, shower curtain rod, sst	EA	49.94	5.29
10824 0699	Facial tissue dispenser			
0700	Bathroom accessories, facial tissue disp, surf mounted	EA	39.11	2.53
10824 0810	Grab bar			
10824 0810	Stainless steel, straight			
0900	Bathroom accessories, grab bar, sst, straight, 24" long	EA	50.08	3.10
0950	Surface Mounted 36" Grab Bar	EA	53.10	3.28
1110	Bathroom accessories, grab bar, sst, straight, 48" long	EA	80.07	4.06
10824 1149	Soap and grab bar, combined			
1150	Bathroom accessories, surf mounted, soap & grab bar	EA	75.39	1.23
1160	Bathroom accessories, soap & grab bar combined, recessed	EA	66.51	4.86
2000	Bathroom accessories, 30"x33" wall to floor, grab bar	EA	68.02	3.39
2050	Bathroom accessories, 16"x32" angular, grab bar	EA	70.43	3.83

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
10824 2099 Straddle type				
2100	Bathroom accessories, grab bar, sst, straddle type	EA	171.26	5.19
2150	Handicap Lift Toilet Seat	EA	117.53	5.53
10824 2199 Hand dryer, surface mounted, electric				
2200	Bathroom accessories, 110 volt, hand dryer, surf mtd, electric	EA	514.55	10.08
2350	Bathroom accessories, hand dryer, 220V electric	EA	528.98	10.38
10824 2999 Mrror				
3000	Bathroom accessories, mirror, w/sst 3/4" sq fr, 18" x 24"	EA	77.15	3.09
3500	Bathroom access, 5" sst shelf, mirror, w/sst 3/4" sq fr, 18" x	EA	105.38	3.79
3900	Bathroom accessories, mirror, recessed, w/towel & soap disp	EA	134.04	4.79
3950	Bathroom accessories, 3/4" thick SST FR. Mirror	SF	42.37	
10824 4109 Mop holder				
4110	Bathroom accessories, mop holder, sst, 3 holders, 24" long	EA	45.57	1.53
10824 4119 Utility hook strip and hook				
4120	Bathroom accessories, utility hook strip & hook	EA	26.87	2.03
4130	Bathroom accessories, utility hook strip & hook, w/shelf	EA	48.37	3.19
10824 4139 Pail and ladder hook				
4140	Bathroom accessories, pail & ladder hook	EA	19.65	1.23
10824 4179 Napkin dispenser, with receptor				
4180	Bathroom access, surf mounted, napkin disp, w/receptor, coin opr	EA	654.27	16.84
4185	Bathroom access, recessed, napkin disp, w/receptor, coin	EA	495.70	21.23
4190	Bathroom accessories, surf mtd, napkin disp, w/receptor, free	EA	618.46	15.91
4195	Bathroom accessories, recessed, napkin disp, w/receptor, free	EA	459.89	19.67
10824 4249 Napkin receptacle				
4250	Bathroom accessories, napkin receptacle, recessed	EA	122.39	9.52
4260	Bathroom accessories, napkin receptacle, surfaced mounted	EA	97.60	5.56
10824 4299 Robe hook				
4300	Bathroom accessories, robe hook, single, regular	EA	18.65	1.83
4500	Bathroom accessories, robe hook, double, regular	EA	19.38	1.83
10824 4599 Soap dispenser				
4600	Bathroom accessories, liquid, soap disp, chrome, surf mounted	EA	52.59	4.49
4700	Bathroom accessories, powder, soap disp, chrome, surf mounted	EA	84.51	3.53
5000	Bathroom accessories, soap disp, chrome, rec sst, liq	EA	98.74	3.53
5100	Bathroom accessories, soap disp, foot operated, powder	EA	276.46	9.35
5200	Bathroom accessories, soap disp, foot operated, sst	EA	152.22	10.92
10824 5449 Soap dish				
5450	Bathroom accessories, surf mtd, soap dish, chrome plated	EA	20.47	1.70
5460	Bathroom accessories, soap dish, recessed	EA	26.61	1.90
10824 5749 Shelf				
5750	Bathroom accessories, shelf, 6" deep, 18" long, sst	LF	32.80	1.90
5950	Bathroom accessories, shelf, 6" deep, crystal	LF	41.36	2.40
5960	Bathroom accessories, utility shelf, folding	EA	70.89	2.83
10824 6099 Toilet tissue dispenser				
6100	Bathroom access, sst, single roll, toilet tissue disp, surf mtd	EA	18.69	1.33
6200	Bathroom access, sst, double roll, toilet tissue disp, surf mtd	EA	26.03	1.16
10824 6209 Toilet paper holder				
6210	Bathroom accessories, toilet paper holder	EA	15.22	0.67
6215	Bathroom accessories, toilet paper holder, double	EA	26.03	1.60
6220	Bathroom accessories, toilet paper holder, recessed	EA	28.28	1.93
6230	Bathroom accessories, toilet paper holder, surf mounted	EA	20.91	0.90
10824 6339 Towel pin				
6340	Bathroom accessories, towel pin	EA	24.97	1.80
10824 6349 Towel ladder and bar				
6350	Bathroom accessories, towel ladder & bar	EA	44.33	7.29
10824 6359 Towel ring				
6360	Bathroom accessories, towel ring	EA	21.93	1.73
10824 6389 Towel bar				
6390	Bathroom accessories, towel bar, sst, 12" long	EA	38.18	3.33
6410	Bathroom accessories, towel bar, sst, 18" long	EA	39.41	3.43
6450	Bathroom accessories, towel bar, sst, 24" long	EA	41.15	3.49
10824 6699 Towel dispenser				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6700	Bathroom accessories, towel dispenser, sst, surf mounted	EA	57.83	5.49
6800	Bathroom accessories, recessed, towel dispenser, sst, flush mtd	EA	161.66	5.49
10824 6819	Towel dispenser and receptacle			
6820	Bathroom accessories, towel dispenser & receptacle	EA	287.00	8.12
10824 7409	Tumbler holder			
7410	Bathroom accessories, tumbler holder	EA	26.61	1.36
10824 7509	Tumbler and toothbrush holder			
7510	Bathroom accessories, surf mounted, tumbler & toothbrush	EA	31.11	2.70
7520	Bathroom accessories, tumbler & toothbrush holder, recessed	EA	20.27	1.00
10824 7899	Waste receptacle			
7900	Bathroom accessories, 12 gallon, waste receptacle, sst, surf mtd	EA	192.35	4.76
7950	Bathroom accessories, 12 gallon, waste receptacle, sst, recessed	EA	198.17	9.78
10828 0011	Medicine cabinets Surface Or Recessed Munted.			
1400	Medicine cabinets w/mirror, chrome plated, 18" x 24"	EA	230.71	17.64
1500	Medicine cabinets w/mirror, white enamel, 18" x 24"	EA	86.59	9.42
1600	Medicine cabinets w/mirror, sst, 18" x 24"	EA	230.71	7.16
10830 2000	Medicine Cabinet With Mrror, Solid Oak Surface Or Recessed Munted.			
2001	18"x23"Medicine Cabinet WMirror , Unlighted	EA	70.70	14.09
2002	18"x23"Medicine Cabinet WMirror , Lighted	EA	97.82	32.88
2003	36"x28"Medicine Cabinet WMirror , Unlighted	EA	155.66	28.19
2004	36"x28"Medicine Cabinet WMirror , Lighted	EA	248.38	39.56
2005	48"x30"Medicine Cabinet WCenter Mirror, 2 End Cabinets, Unlighted	EA	296.49	35.11
2006	48"x30"Medicine Cabinet WCenter Mirror, 2 End Cabinets, Lighted	EA	445.31	84.81
2007	72"x30"Medicine Cabinet WCenter Mirror, 2 End Cabinets, Unlighted	EA	317.16	39.56
2008	72"x30"Medicine Cabinet WCenter Mirror, 2 End Cabinets, Lighted	EA	545.29	105.57

10900 Wardrobe & Closet Specialties

10910 Coat Racks/Wardrobes

10911 0010 Coat racks & wardrobes

10911 2009 Single tier hat & coat rack

2010	Coat racks & wardrobes, baked enameled stl, single tier hat &	LF	29.73	1.43
3000	Coat racks & wardrobes, for custom made units, add		15.20	
2020	Coat racks & wardrobes, sst, single tier hat & coat rack	LF	33.75	2.60
3000	Coat racks & wardrobes, for custom made units, add		17.61	
2030	Coat racks & wardrobes, aluminum single tier hat & coat	LF	22.90	1.06
3000	Coat racks & wardrobes, for custom made units, add		11.10	

10911 2039 Double tier hat & coat rack

2040	Coat racks & wardrobes, baked enameled stl, double tier hat &	LF	47.91	1.70
3000	Coat racks & wardrobes, for custom made units, add		25.48	
2050	Coat racks & wardrobes, sst, double tier hat & coat rack	LF	54.35	3.93
3000	Coat racks & wardrobes, for custom made units, add		29.34	
2060	Coat racks & wardrobes, aluminum double tier hat & coat	LF	34.65	0.93
3000	Coat racks & wardrobes, for custom made units, add		17.52	

10911 2399 Wardrobe

10911 2399 Hospital

2400	Wardrobe 24" x 24" x 76" unit w/dr, baked enamel stl, hospital	EA	1,102.32	49.42
3000	Coat racks & wardrobes, for custom made units, add		614.80	
2500	Wardrobe 24" x 24" x 76" unit w/dr, hardwood, hospital	EA	1,425.39	18.84
3000	Coat racks & wardrobes, for custom made units, add		808.64	
2600	Wardrobe 24" x 24" x 76" unit w/dr, stainless stl, hospital	EA	2,071.52	58.77
3000	Coat racks & wardrobes, for custom made units, add		1,196.32	
2700	Wardrobe 24" x 24" x 76" unit w/dr, plastic laminate, hospital	EA	779.25	10.95
3000	Coat racks & wardrobes, for custom made units, add		420.96	

10911 2799 Dormitory

2800	Wardrobe 24" x 24" x 76" unit w/dr, hardwood, dormitory	EA	1,425.39	21.67
3000	Coat racks & wardrobes, for custom made units, add		808.64	
2900	Wardrobe 24" x 24" x 76" unit w/dr, plstc laminate, dormitory	EA	779.25	10.82
3000	Coat racks & wardrobes, for custom made units, add		420.96	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11001 Equipment				
11020 Security & Vault Equipment				
11024 1000 Metal Security Doors, Bullet Resistant				
Note: Includes Door, Frame And Hardware (Hinges, Lockset And Cylinder, All UL 753 Listed)				
1001	Safe, Tool and torch resistive, 24" x 24" x 20"	EA	8,081.87	68.52
1002	3'x7' Metal Security Door	EA	860.26	90.18
1003	3'x8' Metal Security Door	EA	1,021.53	153.01
1004	Pair 3'x7' Metal Security Door	EA	1,716.70	147.71
1005	Metal Security Door For Medium-Small Arms (.38)	EA	1,704.43	156.80
1006	Metal Security Door For Super-Small Arms (.44)	EA	2,042.72	156.80
1067	Security Screen (9 Ga Exp Metal) Flat Painted	SF	6.92	1.26
1068	Security Screen (9 Ga Exp Metal) Angle, Painted	SF	8.39	2.53
1069	Security Screen (9 Ga Exp Metal) For Air Conditioner	SF	6.92	1.26
1071	Security Screens For Doors (Expanded Metal)	SF	6.92	1.26
11024 2000 Security Screen, 2"x2" Mesh, 9 Gauge Wire Include Hardware & Frame.				
2001	49"x39" Galv Security Screen	EA	226.22	12.63
2002	49"x83" Galv Security Screen	EA	475.56	22.76
2003	Security Window Screen, Steel	SF	15.78	1.26
2004	Security Window Screen, 3x3 Mesh	SF	8.61	
2005	Security Screen, Flat Painted	SF	7.03	1.26
2006	Security Screen, For A/C Unit, Painted	SF	7.03	1.26
2007	Security Screens, Remove/ Reinstall	SF	6.01	3.32
11030 Teller & Service Equipment				
11031 0011 Bank equipment				
11031 0399 Bullet resistant teller window				
0400	Bank eqpt, bullet resistant teller window, 44" x 60"	EA	2,656.33	401.22
0450	Bank eqpt, bullet resistant teller window, 44" x 48"	EA	3,283.08	378.03
0500	Bank eqpt, bullet resistant teller window, 48" x 60"	EA	3,999.75	424.59
11031 3009 Counters for banks				
3010	Bank eqpt, counters for banks, frontal only	LF	483.11	13.21
3110	Bank eqpt, counters for banks, complete w/steel undercounter	LF	950.33	39.10
11031 4749 Door and frame, bullet-resistant				
4750	Bank eqpt, door & frame, bullet resistant, 3' x 7'	EA	4,021.64	274.84
11031 4799 Drive-up window, drawer and mike				
4800	Bank eqpt, drive-up window, min, drawer & mike, no glass	EA	5,554.54	183.58
4900	Bank eqpt, drive-up window, max, drawer & mike, no glass	EA	8,389.93	371.83
11031 4999 Night depository				
5000	Bank eqpt, night depository, w/chest, minimum	EA	7,035.26	717.15
5100	Bank eqpt, night depository, w/chest, maximum	EA	11,378.30	318.88
11031 5210 Package receiver				
5240	Bank eqpt, package receiver, bullet resistant, 13" deep	EA	2,333.13	130.46
5260	Bank eqpt, package receiver, bullet resistant, 24" deep	EA	3,410.02	170.27
11031 5459 Partition, bullet-resistant				
5460	Bank eqpt, partition, 1' to 12' high, bullet-resist. 2.5" thick	SF	329.73	4.96
11031 5599 Pass thru, bullet-resistant window				
5600	Bank eqpt, pass thru, 24" x 36", bullet-resist. window, ptd stee	EA	1,907.27	122.32
5900	Bank eqpt, pass thru window, ptd stl frame, for sst frames, add		309.71	
5650	Bank eqpt, pass thru, 48" x 40", bullet-resist. window, ptd stee	EA	3,104.63	180.75
5900	Bank eqpt, pass thru window, ptd stl frame, for sst frames, add		532.63	
5800	Bank eqpt, pass thru, 72" x 40", bullet-resist. window, ptd stee	EA	3,054.79	199.83
5900	Bank eqpt, pass thru window, ptd stl frame, for sst frames, add		467.48	
11031 5999 Surveillance system				
6000	Bank eqpt, surveillance system, 16mm film camera, complete	EA	4,336.48	
6100	Bank eqpt, surveillance system video camera, complete	EA	12,951.60	
11031 6200 Twenty-four hour teller				
6300	Bank eqpt, cash&memo, sgl unit, auto deposit, twenty-four hr	EA	39,487.55	
11031 7099 Vision panel, bullet-resistant				
7100	Bank eqpt, vision panel, bullet resistant, 12" x 12"	EA	375.01	65.89
11051 Vacuum Cleaning System				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11051 1000	Vacuum Cleaning System			
1001	3 Valves, 1.5 Hp Vac Cleaning Sys	EA	501.16	
1002	3 Valves, 2.5 Hp Vac Cleaning Sys	EA	630.98	
1003	5 Valve Vac Cleaning Sys	EA	825.76	
1004	7 Valve Vac Cleaning Sys	EA	1,046.15	
11060	Theater & Stage Equipment			
11061 0011	Stage equipment			
11061 4999	Stages, portable			
5000	Stage eqpt, stage port w/steps, 8" high, folding legs, stock	SF	7.48	
5150	Stage eqpt, portable stage, 18" high w/steps & folding legs	SF	15.08	
5200	Stage eqpt, portable stage, 32" high w/steps & folding legs	SF	15.88	
5350	Stage eqpt, portable stage, 48" high w/steps & folding legs	SF	16.29	
11061 5399	Roll out stage			
5400	Stage eqpt, roll out stage, w/stl frame & wood floor, manual	SF	16.98	0.39
5480	Stage eqpt, roll out stage, for telescoping stage stairs, add		205.00	
5450	Stage eqpt, roll out stage, w/stl frame & wood floor, electric	SF	180.77	5.47
5480	Stage eqpt, roll out stage, for telescoping stage stairs, add		205.00	
11061 5999	Telescoping platforms			
11061 5999	Extruded aluminum			
6000	Stage eqpt, telescoping platforms, straight, extruded al	SF	34.78	0.93
6500	Stage eqpt, telescoping platforms pie-shaped extruded al	SF	38.33	1.50
11061 6999	Band risers, steel frame			
7000	Stage eqpt, band risers, steel frame, plywood deck	SF	24.33	0.43
11061 7499	Chairs, self-storing			
7500	Stage eqpt, chairs for above, self-storing	EA	87.76	0.70
11100	Mercantile, Commercial & Detention Equipment			
11105	Display Cases			
11106 0010	Refrigerated food cases			
11106 0010	Dairy			
0011	Refrigerated food cases, dairy, multi-deck	LF	527.29	84.60
0150	Refrd food cases, dairy, multi-deck, for rear sliding doors, add		67.50	
11106 0200	Delicatessen case			
0201	Refrigerated food cases, delicatessen case, single deck	LF	486.76	62.62
0301	Refrigerated food cases, delicatessen case, multi-deck	LF	535.17	75.59
11106 0600	Frozen food			
0601	Refrigerated food cases, frozen food, chest type	LF	366.43	80.31
0750	Refrigerated food cases, glass door, reach-in, frozen food	LF	685.94	71.27
11106 0849	Island type			
0850	Refrigerated food cases, frozen food, island type, single deck	LF	711.04	130.43
0950	Refrigerated food cases, frozen food, island type, multi-deck	LF	766.70	83.50
11106 1000	Meat case			
1001	Refrigerated food cases, meat case, single deck	LF	468.74	107.45
1051	Refrigerated food cases, meat case, multi-deck	LF	491.16	103.47
11106 1100	Produce case			
1101	Refrigerated food cases, produce case, single deck	LF	490.28	106.77
1201	Refrigerated food cases, produce case, multi-deck	LF	469.62	91.80
1301	3' Non-Refrigerated, End Section, Produce Island		2,994.83	
11130	Projection Screens			
11132 0010	Projection screens			
0900	Projection screen, 50SF, economy, wall or clg hung, glass beaded	EA	1,065.92	797.65
11140	Service Station Equipment			
11140 0020	Automotive			
11140 4010	Spray painting booths			
11140 4099	Vehicular booth with solid back			
4100	Auto, spray pntng booths, 14'4" x 9'6" x 24', vehicular, w/solid	EA	11,405.31	186.68
4110	Auto, spray pntng booths, 14'4" x 9'6" x 26', vehicular, w/solid	EA	12,447.74	168.95
4120	Auto, spray pntng booths, 14'4" x 9'6" x 28', vehicular, w/solid	EA	12,917.27	184.06
11140 4129	Vehicular booth with drive through			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4130	Auto, spray pntng booths, 14' 4" x 9' 6" x 24', vehicular, w/drive	EA	11,932.99	166.67
4140	Auto, spray pntng booths, 14' 4" x 9' 6" x 26', vehicular, w/drive	EA	12,646.97	171.73
4150	Auto, spray pntng booths, 14' 4" x 9' 6" x 28', vehicular, w/drive	EA	13,747.55	179.03
11140 4209	Spray booth, water wash			
4210	Automotive, spray pntng booths, 5' x 11' 2" x 10' 8", water wash	EA	14,609.06	310.63
4220	Automotive, spray pntng booths, 6' x 11' 2" x 10' 8", water wash	EA	15,292.89	264.31
4230	Automotive, spray pntng booths, 8' x 11' 2" x 10' 8", water wash	EA	16,295.47	270.35
4240	Automotive, spray pntng booths, 10' x 11' 2" x 11' 2", water wash	EA	17,542.51	279.77
4250	Automotive, spray pntng booths, 12' x 12' 2" x 11' 2", water wash	EA	20,009.67	236.77
4260	Automotive, spray pntng booths, 14' x 12' 2" x 11' 2", water wash	EA	21,532.39	219.09
4270	Automotive, spray pntng booths, 16' x 12' 2" x 11' 2", water wash	EA	24,625.22	243.82
4280	Automotive, spray pntng booths, 20' x 12' 2" x 11' 2", water wash	EA	27,786.96	237.97
11140 4309	Dry type, spray booth with paint arrestor			
4310	Automotive, spray pntng booth, 5' x 7' x 7', dry type w/paint	EA	3,140.18	210.81
4320	Automotive, spray pntng booth, 6' x 7' x 7', dry type w/paint	EA	3,247.87	197.09
4330	Automotive, spray pntng booth, 8' x 7' x 9', dry type w/paint	EA	3,546.17	197.40
4340	Automotive, spray pntng booth, 10' x 7' x 9', dry type w/paint	EA	4,755.52	245.12
4350	Automotive, spray pntng booth, 12' x 7' x 9', dry type w/paint	EA	5,132.43	236.36
4360	Automotive, spray pntng booth, 14' x 7' x 10', dry type w/paint	EA	5,778.56	184.34
4370	Automotive, spray pntng booth, 16' x 7' x 10', dry type w/paint	EA	6,128.55	172.01
4380	Automotive, spray pntng booth, 20' x 7' x 11', dry type w/paint	EA	7,501.59	189.21
11150	Parking Control Equipment			
11151 0009	Parking equipment			
11151 0009	Traffic, detectors, magnetic			
0020	Parking eqpt, traffic, detectors, magnetic	EA	667.81	53.65
0200	Parking eqpt, traffic, detectors, single treadle	EA	2,239.42	70.21
11151 0499	Automatic gates			
0500	Parking eqpt, automatic gates, 8' arm one way	EA	3,024.93	78.47
0650	Parking eqpt, automatic gates, 8' arm two way	EA	3,331.85	79.15
11151 0999	Booth for attendant			
1050	Parking eqpt, booth for attendant	EA	7,161.32	
11151 1399	Fee indicator			
1400	Parking eqpt, fee indicator, 1" display	EA	1,672.95	28.79
11160	Loading Dock Equipment			
11161 0009	Loading dock			
11161 0009	Bumpers, rubber blocks			
0020	Loading dock, bumpers, 14" long, rubber blocks 4.5" thk, 10" hig	EA	50.08	4.26
0300	Loading dock, bumpers, 36" long, rubber blocks 4.5" thk, 10" hig	EA	87.43	6.95
0700	Loading dock, bumpers, 14" long, rubber blocks 4.5" thk, 6" high	EA	40.01	2.46
0750	Loading dock, bumpers, 36" long, rubber blocks 4.5" thk, 6" high	EA	77.17	6.29
0800	Loading dock, bumpers, 14" long, rubber blocks 6" thk, 10" high	EA	70.45	5.42
0900	Loading dock, bumpers, 36" long, rubber blocks 6" thk, 10" high	EA	112.45	7.75
11161 0919	Rubber bumpers			
0920	Loading dock, bumpers, 22" x 22" x 3" T,extruded rubber,T sect	EA	49.37	1.66
0940	Loading dock, bumpers, 24" x 12" x 3" thk, molded rubber bumpers	EA	49.15	3.89
11161 2000	Door Levelers			
Note: Includes All Anchor Bolts And Fasteners				
2001	6'x8' Dock Leveler, Hinged For Trucks, 35000#, Factory Finish	EA	1,070.49	
2101	For Safety Lip Barrier, Add		72.22	
2002	6.5'x8' Dock Leveler, Hinged For Truck, 35000#, Factory Finish	EA	1,100.03	
2101	For Safety Lip Barrier, Add		75.18	
2003	7'x8' Dock Leveler, Hinged For Truck, 35000#, Factory Finish	EA	1,129.57	
2101	For Safety Lip Barrier, Add		78.13	
11161 2199	Dock boards, heavy duty			
2200	Loading dock, dock boards, 5,000 lb cap, HD, 60" x 60", al	EA	1,053.20	
2700	Loading dock, dock boards, 9,000 lb cap, HD, 60" x 60", al	EA	1,299.08	
11161 3000	Vehicle Restriant System			
Note: With Push Button Controls, Warning Lights, Alarms, 30,000Lb Holding Force, Includes All Munting Plates, Bolts, Welds, Warning Signs, Gasketed Weatherproof Box For Controls, 120V UL Listed				
3001	Vehicle Restraint System	EA	1,226.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3200	Loading dock, dock boards, 15, 000 lb cap, HD, 60" x 60", al	EA	1,438.37	
3202	Dock Boards, Magnesium 5000# Cap (2268kg) Capacity, 60" x 60"	EA	1,751.50	180.35
3204	Dock Boards, Magnesium 9000# Cap (4082kg) Capacity, 60" x 60"	EA	2,084.03	216.42
11161 3599 Door seal for door perimeter				
3600	Loading dock, door seal, vinyl covered, 12" x 12", for door	LF	28.70	3.06
11161 4299 Portable platform				
4300	Loading dock, portable platform 6' x 6', 5000 lb capacity	EA	6,198.45	
11161 4599 Dock levelers, hinged for trucks				
4600	Loading dock, dock levelers, 6'2" x 10', 10 ton cap hinged	EA	4,087.82	487.49
4650	Loading dock, dock levelers, 7' x 8', 10 ton cap hinged for	EA	3,807.34	508.55
11161 4999 Lights for loading docks				
5000	Loading dock, lights for loading docks, 24" long, single arm	EA	164.25	44.89
5700	Loading dock, lights for loading docks, 60" long, double arm	EA	196.12	45.32
11169 Motorized Checkroom Equipment				
11169 1000 No Shelf System 6 Ft 4 In Height				
1001	Checkroom Equip 7.5' (2.3M) Long Elect, no Shelf Sys @6'4" Height	EA	2,658.79	230.80
1002	Checkroom Equip 14.5' (4.4M) Long Elect, no Shelf Sys @6'4" Height	EA	2,813.05	229.71
1003	Checkroom Equip 28' (8.5M) Long Elect, no Shelf Sys @6'4" Height	EA	3,737.76	225.31
11169 2000 One Shelf 6 Ft - 8 In Height				
2001	Checkroom Equip 7.5' (2.3M) Long Elect, 1 Shelf Sys @6'8" Height	EA	2,894.93	229.20
2002	Checkroom Equip 14.5' (4.4M) Long Elect, 1 Shelf Sys @6'8" Height	EA	3,310.31	227.00
2003	Checkroom Equip 28' (8.5M) Long Elect, 1 Shelf Sys @6'8" Height	EA	4,634.89	222.86
11169 3000 Two Shelves 7 Ft - 5 In Height				
3001	Checkroom Equip 7.5' (2.3M) Long Elect, 2 Shelf Sys @7'5" Height	EA	3,499.91	226.20
3002	Checkroom Equip 14' (4.4M) Long Elect, 2 Shelf Sys @7'5" Height	EA	4,178.14	223.97
3003	Checkroom Equip 28' (8.5M) Long Elect, 2 Shelf Sys @7'5" Height	EA	6,163.72	220.46
11169 4000 Three Shelves 8 Ft Height				
4001	Checkroom Equip 7.5' (2.3M) Long Elect, 3 Shelf Sys @8' Height	EA	4,241.20	472.19
4002	Checkroom Equip 14.5' (4.4M) Long Elect, 3 Shelf Sys @8' Height	EA	5,013.37	464.05
4003	Checkroom Equip 28' (8.5M) Long Elect, 3 Shelf Sys @8' Height	EA	7,216.12	451.54
5001	Checkroom Equip 7.5' (2.3M) Long Elect, 4 Shelf Sys @8'7" Height	EA	4,296.36	471.50
5002	Checkroom Equip 14.5' (4.4M) Long Elect, 4 Shelf Sys @8'7" Height	EA	5,188.32	462.59
5003	Checkroom Equip 28' (8.5M) Long Elect, 4 Shelf Sys @8'7" Height	EA	7,506.55	450.49
11400 Food Service, Residential, Darkroom, Athletic Eq				
11400 Food Service Equipment				
11402 0011 Appliances				
11402 0011 Vent kits				
7450	Appliances, vent kits for dryers	EA	39.54	4.19
11403 1500 Commercial Kitchen Equipment				
1501	Comm kitchen appliance, bake oven, gas, one section	EA	3,941.33	
1502	Kitchen equipment, bake oven gas, two sections	EA	7,873.51	
1503	Kitchen equipment, bake oven gas, three sections	EA	11,213.90	
1504	Kitchen equipment, electric convection, single deck	EA	5,358.74	
1505	Food service eqpt, butter pat dispenser	EA	443.69	
1506	Food service eqpt, bread dispenser, counter top	EA	519.08	
1507	Kitchen equipment, broiler, without oven, standard	EA	3,806.72	
1508	Kitchen equipment, broiler, infra-red	EA	4,874.14	
1509	Food service eqpt, cabinet, heated, 1 compartment, reach-in	EA	2,360.28	
1510	cabinet, heated, 1 compartment, pass-thru, roll-in	EA	3,275.63	
1511	Food service eqpt, cabinet, heated, 2 compartment	EA	4,947.82	
1512	Food service eqpt, cabinet, heated, mobile	EA	2,342.24	
1513	Food service eqpt, choppers, 5 pounds	EA	1,683.61	
1514	Food service eqpt, choppers, 16 pounds	EA	2,093.21	
1515	Food service eqpt, choppers, 35 to 40 pounds	EA	4,117.43	
1516	Food service eqpt, coffee brewer, 5 burners	EA	1,035.66	
1517	Food service eqpt, coffee urn, twin 6 gallon urns	EA	6,480.25	
1518	Food service eqpt, coffee urn, single, 3 gallon	EA	4,724.00	
1519	Food service eqpt, cup & glass dispenser, drop in	EA	922.42	
1520	cup & glass dispenser, disposable cup, drop in	EA	260.21	
1521	Kitchen equipment, cooler, reach-in, beverage, 6' long	EA	2,948.77	
1522	Food service eqpt, dish dispenser, drop in, 12"	EA	1,079.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1523	Food service eqpt, dish dispense r, drop in, 12", mobile	EA	1,806.61	
1524	dishwasher, commercial, 10 to 12 racks per hour	EA	2,718.93	
1525	dishwasher, semi-automatic 38 to 50 racks per hour	EA	5,719.40	
1526	dishwasher, automatic, 190 to 230 racks per hour	EA	11,678.27	
1527	dishwasher, automatic, 2 tks, 235 to 275 racks/hr	EA	23,478.59	
1528	dishwasher, automatic 8,750 to 12,500 dishes per hr	EA	44,373.85	
1529	Food service eqpt, dishwasher hood, canopy type	LF	3,882.10	
1530	Food service eqpt, dishwasher hood, pant leg type	EA	5,190.26	
1531	exhaust hood, sst, gutter on all sides, 4' x 4' x 2'	EA	2,872.25	
1532	exhaust hood, sst, gutter on all sides, 4' x 4' x 7'	EA	4,489.89	
1533	Kitchen equipment, fast food equipment, total package, minimum	EA	121,501.61	
1534	Kitchen equipment, fast food equipment, total package, maximum	EA	164,381.36	
1535	Kitchen equipment, food warmer, counter, 1.2 KW	EA	683.83	
1536	Kitchen equipment, food warmer, counter, 1.6 KW	EA	872.28	
1537	well, hot food, built-in, rectangular, 12" x 20"	EA	285.96	
1538	Food service eqpt, well, hot food, built-in, circular, 7 qt	EA	240.73	
1539	Food service eqpt, well, refrigerated, 2 compartments	EA	1,679.46	
1540	Food service eqpt, well, refrigerated, 3 compartments	EA	1,680.61	
1541	Food service eqpt, well, refrigerated, 4 compartments	EA	2,301.24	
1542	Kitchen equipment, food mixers, 20 quarts	EA	3,408.27	
1543	Food service eqpt, food mixers, bench type, 40 quarts	EA	7,801.36	
1544	Food service equip, food mixers, bench type, 60 quarts	EA	10,629.87	
1545	Food service eqpt, food mixers, bench type, 80 quarts	EA	12,197.71	
1546	Food service eqpt, food mixers, bench type, 130 quarts	EA	18,250.58	
1547	Food service eqpt, food mixers, floor type, 20 quarts	EA	3,211.25	
1548	Food service eqpt, food mixers, floor type, 60 quarts	EA	9,323.14	
1549	Food service eqpt, food mixers, floor type, 80 quarts	EA	12,070.54	
1550	Food service eqpt, food mixers, floor type, 140 quarts	EA	21,443.19	
1551	Kitchen equipment, freezers, reach-in, 44 C.F.	EA	7,774.97	
1552	Kitchen equipment, freezers, reach-in, 68 C.F.	EA	9,424.35	
1553	Food service eqpt, freezer, pref ab, 8' x 8' OD, w/refrigeration	EA	7,416.92	
1554	Food service eqpt, freezer, pref ab, 8' x 12' OD, w/refrigeration	EA	9,774.49	
1555	Food service eqpt, freezer, pref ab, 8' x 16' OD w/refrigeration	EA	12,542.79	
1556	Food service eqpt, freezer, pref ab, 8' x 20' OD w/refrigeration	EA	14,391.10	
1557	Food service eqpt, freezer, reach-in, 1 compartment	EA	2,121.30	
1558	Food service eqpt, freezer, reach-in, 2 compartment	EA	3,447.61	
1559	Food service eqpt, frost cold plate	EA	11,426.46	
1560	Kitchen equipment, fryer, with twin baskets, modular model	EA	3,081.35	
1561	fryer, with twin baskets, floor model on 6" legs	EA	4,190.04	
1562	Kitchen equipment, fryer, extra single basket, large	EA	94.23	
1563	Food service eqpt, garbage disposal 1.5 HP, 100 GPH	EA	1,711.37	
1564	Food service eqpt, garbage disposal 3 HP, 120 GPH	EA	2,708.16	
1565	Food service eqpt, garbage disposal 5 HP, 250 GPH	EA	3,327.73	
1566	Kit eqpt, 3' lg SST griddle, 24" pl dp w/4" legs, elec, 208V 3Ph.	EA	1,762.16	
1567	Kitchen equipment, griddle, 4' long	EA	3,029.53	
1568	Food service eqpt, hot chocolate dispenser	EA	779.44	
1569	Food service eqpt, ice cube maker, 50 pounds per day	EA	1,629.58	
1570	Food service eqpt, ice cube maker, 250 pounds per day	EA	2,144.22	
1571	Food service eqpt, ice cube maker, 500 pounds per day	EA	2,955.89	
1572	Food service eqpt, ice cube maker, 500 pounds per day, w/bin	EA	3,867.25	
1573	Food service eqpt, ice cube maker, 1000 pounds per day, w/bin	EA	8,323.66	
1574	Food service eqpt, ice flakers, 300 pounds per day	EA	4,091.75	
1575	Food service eqpt, ice flakers, 600 pounds per day	EA	3,993.68	
1576	Food service eqpt, ice flakers, 1000 pounds per day	EA	6,898.34	
1577	Food service eqpt, ice flakers, 2000 pounds per day	EA	12,838.76	
1578	Food service eqpt, ice storage bin, 500 pound capacity	EA	1,686.30	
1579	Food service eqpt, ice storage bin, 1000 pound capacity	EA	2,468.95	
1580	Food service eqpt, iced tea brewer	EA	700.21	
1581	Food service eqpt, jet spray dispenser	EA	2,337.76	
1582	Food service eqpt, juice dispenser, concentrate	EA	900.12	
1583	20 gal kettle w/steam jacket, tilting w/positive lock, S/S	EA	5,777.43	
1584	Kitchen equipment, kettles, steam-jacketed, 60 gallons	EA	6,345.48	
1585	Food service eqpt, milk dispenser, bulk, 2 flavor	EA	1,008.97	
1586	Food service eqpt, milk dispenser, bulk, 3 flavor	EA	1,493.57	
1587	Food service eqpt, peelers, small	EA	1,870.27	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1588	Food service eqpt, peelers, larg e	EA	3,247.50	
1589	Food service eqpt, pot sink, 3 c ompartment	LF	473.66	
1590	Food service eqpt, pot washer, s mall	EA	13,592.45	
1591	Food service eqpt, pot washer, l arge	EA	33,953.56	
1592	Food service eqpt, pulper/extrac tor, close coupled, 5 HP	EA	3,008.28	
1593	Food service eqpt, mobile rack w /pan slide	EA	915.36	
1594	range, restaurant type, 6 burne rs & 1 std oven, 36" W	EA	2,219.83	
1595	range, restaurant type, 6 bnr & 1 std oven, convection	EA	3,000.58	
1596	range, restaurant type, 2 std o vens,24" griddle,60" W	EA	4,698.71	
1597	range, restaurant type, 6 bnr & 1 std,1 convection oven	EA	6,017.90	
1598	range, heavy dty, single 34" st andard oven, open top	EA	4,082.35	
1599	range, hvy dty, sgl 34" standar d oven, convection oven	EA	5,455.38	
1600	range, hvy dty, single 34" stan dard oven, griddle top	EA	4,833.32	
1601	range, hvy dty, sgl 34" standar d oven, convection oven	EA	5,937.14	
1602	Kitchen equipment, range, hood f ire protection system minimum	EA	3,070.69	
1603	Kitchen equipm ent, range, hood f ire protection system maximum	EA	21,730.94	
1604	Kitchen equipm ent, refrigerators , reach-in type, 44 C.F.	EA	5,213.08	
1605	refrigerators, reach-in type, with gl doors, 68 C.F.	EA	6,805.77	
1606	Food service eqpt, refrigerator, reach-in, 1 compartment	EA	1,897.51	
1607	Food service eqpt, refrigerator, reach-in, 2 compartment	EA	2,493.14	
1608	Food service eqpt, refrigerator, reach-in, 3 compartment	EA	3,652.54	
1609	Food service eqpt, refrigerator, prefab, 8' x 8'	EA	6,043.88	
1610	Food service eqpt, refrigerator, prefab, 8' x 12'	EA	7,432.26	
1611	Food service eqpt, refrigerator, prefab, 8' x 16'	EA	8,558.29	
1612	Food service eqpt, refrigerator, prefab, 8' x 20'	EA	11,268.12	
1613	refrigerator, pass-thru/roll-in , 1 compartment	EA	3,162.85	
1614	refrigerator, pass-thru/roll-in , 2 compartment	EA	4,377.59	
1615	refrigerator, pass-thru/roll-in , 3 compartment	EA	5,994.78	
1616	Food service eqpt, refr, walk-in ,6'x6'x7'-6" al, door & fl only	EA	7,639.61	
1617	Food service eqpt, refr, walk-in ,10'x6'x7'-6" al, door & fl onl	EA	10,997.61	
1618	Food service eqpt, refr, walk-in ,12'x14'x7'-6" al, dr & fl only	EA	14,696.57	
1619	Food service eqpt, refr, walk-in ,12'x20'x7'-6" al, dr & fl only	EA	17,837.15	
1620	Food service eqpt, refrigerated cabinets, mobile	EA	2,315.31	
1621	Food service eqpt, refr/freezer, reach-in, 1 compartment	EA	4,837.12	
1622	Food service eqpt, refr/freezer, reach-in, 2 compartment	EA	6,643.92	
1623	Food service eqpt, slicer w/tab l e	EA	3,026.51	
1624	Food service eqpt, sst shelving, louvered 4-tier,20" x 3'	EA	1,108.51	
1625	Food service eqpt, sst shelving, louvered 4-tier,20" x 4'	EA	1,323.89	
1626	Food service eqpt, sst shelving, louvered 4-tier,20" x 6'	EA	1,808.49	
1627	Food service eqpt, sst shelving, louvered 4-tier,24" x 3'	EA	1,162.36	
1628	Food service eqpt, sst shelving, louvered 4-tier,24" x 4'	EA	1,404.66	
1629	Food service eqpt, sst shelving, louvered 4-tier,24" x 6'	EA	1,943.10	
1630	Food service eqpt, sst shelving, flat 4-tier, 20" x 3'	EA	1,033.13	
1631	Food service eqpt, sst shelving, flat 4-tier, 20" x 4'	EA	1,243.12	
1632	Food service eqpt, sst shelving, flat 4-tier, 20" x 5'	EA	1,431.58	
1633	Food service eqpt, sst shelving, flat 4-tier, 24" x 3'	EA	1,108.51	
1634	Food service eqpt, sst shelving, flat 4-tier, 24" x 4'	EA	1,377.73	
1635	Food service eqpt, sst shelving, flat 4-tier, 24" x 6'	EA	2,616.16	
1636	galvanized shelving, louvered 4 -tier, 20" x 3'	EA	397.76	
1637	galvanized shelving, louvered 4 -tier, 20" x 4'	EA	451.61	
1638	galvanized shelving, louvered 4 -tier, 20" x 6'	EA	666.99	
1639	galvanized shelving, louvered 4 -tier, 24" x 3'	EA	435.46	
1640	galvanized shelving, louvered 4 -tier, 24" x 4'	EA	494.69	
1641	galvanized shelving, louvered 4 -tier, 24" x 6'	EA	677.76	
1642	Food service eqpt, galvanized sh elving, flat 4-tier, 20" x 3'	EA	408.53	
1643	Food service eqpt, galvanized sh elving, flat 4-tier, 20" x 4'	EA	462.38	
1644	Food service eqpt, galvanized sh elving, flat 4-tier, 20" x 6'	EA	623.91	
1645	Food service eqpt, galvanized sh elving, flat 4-tier, 24" x 3'	EA	430.07	
1646	Food service eqpt, galvanized sh elving, flat 4-tier, 24" x 4'	EA	494.69	
1647	Food service eqpt, galvanized sh elving, flat 4-tier, 24" x 6'	EA	677.76	
1648	Food service eqpt, sst dunnage r ack, 24" x 3'	EA	509.67	
1649	Food service eqpt, sst dunnage r ack, 24" x 4'	EA	590.44	
1650	Food service eqpt, galvanized du mnage rack, 24" x 3'	EA	141.37	
1651	Food service eqpt, galvanized du mnage rack, 24" x 4'	EA	159.68	
1652	Food service eqpt, serving count er, straight	LF	458.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1653	Food service eqpt, serving count er, curved section	LF	652.63	
1654	Food service eqpt, soft serve ma chines, medium	EA	6,793.59	
1655	Food service eqpt, soft serve ma chines, large	EA	10,241.68	
1656	Kitchen equipment, steamer, elec tric 27 KW	EA	8,011.98	
1657	Kitchen equipment, steamer, elec tric, 10 KW or gas 100,000 BTU	EA	3,710.85	
1658	toaster, conveyor type, 16-22 s lices per minute	EA	979.97	
1659	Food service eqpt, toaster, pop- up, 2 slot	EA	489.99	
1660	trash compactor, small, up to 1 25 lb comp weight	EA	15,425.39	
1661	trash compactor, large, up to 1 75 lb comp weight	EA	18,880.06	
1662	Food service eqpt, tray & silver dispenser, mbile	EA	680.20	
1663	rule of thumb: equip cost based , office bldgs, minimum	SF	53.15	
1664	rule of thumb: equip cost based , office bldgs, maximum	SF	89.71	
1665	rule of thumb: equip cost based, public eating facl,min	SF	69.30	
1666	rule of thumb: equip cost based, public eating facl,max	SF	113.37	
1667	rule of thumb: equip cost based , hospitals, minimum	SF	71.94	
1668	rule of thumb: equip cost based , hospitals, maximum	SF	120.27	

11415 Unit Kitchens

11415 1000 30 In (76Cm) Compact Kitchen

1001	30"(76cm) Compact Unit Kitchen w/Refr, Range & Sink	EA	2,284.99	61.59
1002	30"(76cm) Compact Unit Kitchen w/Refr & Sink	EA	2,099.63	61.36
1003	30"(76cm) Compact Unit Kitchen w/Refr & Range	EA	1,853.41	30.64
1004	30"(76cm) Compact Unit Kitchen w/Cab for Upper Wall Section	EA	291.81	26.08
1005	30"(76cm) Compact Unit Kitchen w/SST Shield for Rear Wall	EA	95.97	3.61
1006	30"(76cm) Compact Unit Kitchen w/SST Shield for Side Wall	EA	81.02	3.61

11415 2000 42 In (106Cm) Compact Kitchen

2001	42"(106cm) Compact Unit Kitchen w/Refr, Range & Sink	EA	2,726.77	61.55
2002	42"(106cm) Compact Unit Kitchen w/Refr & Sink	EA	2,585.77	61.48
2003	42"(106cm) Compact Unit Kitchen w/Cab for Upper Wall Section	EA	415.47	20.72
2004	42"(106cm) Compact Unit Kitchen w/SST Shield for Rear Wall	EA	123.81	3.56
2005	42"(106cm) Compact Unit Kitchen w/SST Shield for Side Wall	EA	94.36	3.59

11415 3000 54 In (137Cm) Compact Kitchen

3001	54"(137cm) Compact Unit Kitchen w/Refr, Oven, Range & Sink	EA	3,742.03	92.24
3002	54"(137cm) Compact Unit Kitchen w/Cab for Upper Wall Section	EA	498.14	25.91
3003	54"(137cm) Compact Unit Kitchen w/SST Shield for Rear Wall	EA	148.06	3.56
3004	54"(137cm) Compact Unit Kitchen w/SST Shield for Side Wall	EA	95.48	3.61

11415 4000 60 In (152Cm) Compact Kitchen

4001	54"(137cm) Compact Unit Kitchen w/Refr, Oven, Range, & Sink	EA	3,830.36	92.20
4002	60"(152cm) Compact Unit Kitchen w/Cab for Upper Wall Section	EA	527.58	25.88
4003	60"(152cm) Compact Unit Kitchen w/SST Shield for Rear Wall	EA	160.68	3.56
4004	60"(152cm) Compact Unit Kitchen w/SST Shield for Side Wall	EA	95.48	3.61

11415 5000 72 In (183Cm) Compact Kitchen

5001	72"(183cm) Compact Unit Kitchen w/Refr, Oven, Range & Sink	EA	4,172.19	123.03
5002	72"(183cm) Compact Unit Kitchen w/Cab for Upper Wall Section	EA	624.46	25.75
5003	72"(183cm) Compact Unit Kitchen w/SST Shield for Rear Wall	EA	191.47	4.44
5004	72"(183cm) Compact Unit Kitchen w/SST Shield for Side Wall	EA	96.82	4.55

11420 Cooking Equipment

See Csi 12051

11420 1000 Bake Oven

1001	Bake Oven-Single Deck	EA	2,990.67	32.82
1003	Bake Oven-Double Deck	EA	6,165.25	43.61
1005	Bake Oven-Triple Deck	EA	9,002.00	43.55
1011	Rotary Oven, Gas, M&d.	EA	19,350.75	

11420 2000 Electric Convection Type Oven 40 In X 45 In X 57 In

2001	40"x45"x57" Convection Oven	EA	4,724.64	37.11
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11420 3000 Broiler, Without Oven 69 X 26 X 39 In

3001	69"x26"x39" Broiler w/o Oven	EA	4,028.83	34.94
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11420 4000 Coffee Urns See Csi 12051

4003	100 Gal Coffee Urn	EA	7,113.72	48.74
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11420 5000 Fryer, With Submerger

5001	Single Fryer w/Submerger	EA	2,169.93	35.12
5003	Double Fryer w/Submerger	EA	4,458.12	43.70
5005	Fryer Battery w/Filter Unit (Single 42 Lb Cap.)	EA	6,666.04	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11420 6000 Griddle (Counter)				
6001	3' (.9M) Long Griddle	EA	1,184.25	22.00
6003	5' (1.5M) Long Griddle	EA	4,217.47	43.70
11420 7000 Kettles, Steam Jacketed				
7001	20 Gal Kettle w/Steam Jacket	EA	5,383.10	30.21
7003	40 Gal Kettle w/Steam Jacket	EA	3,008.83	30.29
7005	60 Gal Kettle w/Steam Jacket	EA	8,439.25	30.18
11420 8000 Range				
8001	HD Range, w/34"Open Top Oven	EA	1,429.88	21.94
8003	Range w/Fry Top	EA	1,429.88	21.94
11420 9000 Steamers, Electric				
9001	Steamer, Elect 27Kw	EA	10,087.58	32.64
9003	Steamer, 18Kw or 100000 BTU	EA	7,181.71	39.20
11471 Refrigerated Boxes				
11471 1000 Frozen Food Cases				
1001	Chest Type Frozen Food Case	LF	447.97	
1002	Reach-In Frozen Food Case(Gl Dr)	LF	911.09	
1003	Island Type Frozen Food Case	LF	530.29	
1004	Milti-Deck Frozen Food Case	LF	871.26	
11471 2000 Ice Storage Bins				
2001	500# Capacity Ice Storage Bin	EA	1,286.47	
2002	1000# Capacity Ice Storage Bin	EA	2,572.95	
11471 3000 Refrigeration Box Prefab Walk-In 7Ft 6In High Al				
3001	Walk-In Refr, 6'x6'x7'-6" Alum Includes Door & Floor Only	EA	2,431.88	
3002	Walk-In Refr, 10'x6'x7'-6" Alum, Includes Door & Floor Only	EA	4,939.17	
3003	Walk-In Refr, 12'x14'x7'-6" Alum, Includes Door & Floor Only	EA	7,509.90	
3004	Walk-In Refr, 12'x20'x7'-6" Alum, Includes Door & Floor Only	EA	9,870.01	
11473 Darkroom Processing				
11474 0009 Darkroom equipment				
11474 0009 Developing sink				
0020	Darkroom eqpt, developing sink, 5" deep, 24" x 48"	EA	2,653.00	26.79
0050	Darkroom eqpt, developing sink, 5" deep, 48" x 52"	EA	3,349.22	34.81
11474 0299 Sink with stand				
0300	Darkroom eqpt, sink w/stand, 5" deep, 41-1/2 x 132.5"	EA	5,036.00	31.65
0350	Darkroom eqpt, sink w/stand, 10" deep, 24" x 48"	EA	2,405.31	24.27
11474 0399 Sink with cabinet				
0400	Darkroom eqpt, sink w/cabinet, 5" deep, 24" x 48"	EA	2,378.39	23.98
0450	Darkroom eqpt, sink w/cabinet, 5" deep, 48" x 52"	EA	3,013.76	26.72
0470	Darkroom eqpt, sink w/cabinet, 10" deep, 24" x 48"	EA	2,502.23	25.30
11474 0499 Dryers, dehumidified filtered air				
0500	Darkroom eqpt, dryers, 36" x 25" x 68" H, dehumidified filtered	EA	4,996.02	
0550	Darkroom eqpt, dryers, 48" x 25" x 68" H, dehumidified filtered	EA	6,102.92	
11475 Shelving/Racks				
11475 1000 Sinks WCabinet And/Or Stand				
11475 1000 5 In (12Cn) Sink WStand				
11475 1010 Sinks Wth Stand				
1012	32" x 63-1/2" x 5" Sink w/Stand	EA	3,803.39	61.06
1013	37-1/2"x 51-1/2"x 5"Sink w/Stand	EA	3,011.68	61.17
11475 1020 5 In (12Cn) Sink WCabinet				
1022	32"x 63-1/2"x 5" Sink w/Cabinet	EA	3,803.39	61.06
1023	37-1/2"x 51-1/2"x 5" Sink w/Cab	EA	3,258.79	61.14
1024	41-1/2"x 132-1/2"x 5" Sink w/Cab	EA	5,228.27	61.10
11475 1030 10 In (25Cn) Sink WStand				
1032	32" x 63-1/2" x 10" Sink w/Stand	EA	3,126.84	61.14
1033	37-1/2"x51-1/2"x10" Sink w/Stand	EA	3,116.04	61.14
11475 1040 10 In (25Cn) Sink WCabinet				
1042	32"x 63-1/2"x 10" Sink w/Cabinet	EA	3,395.54	61.10
1043	37-1/2"x 51-1/2"x 10" Sink w/Cab	EA	3,385.95	61.10
11475 1050 Combination Sinks WCabinet				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1051	Sinks w/Cabinet w/o Temp Control	EA	3,405.14	61.10
1052	Sinks w/Cab w/Recirculating Heat	EA	4,224.23	61.21
1053	Sinks w/Cab w/Refrigerating Unit	EA	6,788.90	61.02
11475 3000	Processors, Film			
3001	Develop Film Black & White	EA	7,591.60	
3002	Develop Film Color Negatives	EA	22,958.02	
3003	Develop Film Color Prints	EA	8,275.36	
3004	Develop Color Transparencies	EA	29,387.68	
11475 4000	Mbile Studio			
4001	Mbile Studio, for MP3 Polaroid	EA	1,462.23	
4002	Mbile Studio, for Saturn 100	EA	1,954.76	
11476 1000	Stainless Steel Shelving, Louvered, 4-Tier			
1001	20" X 3' SS Shelving, Louvered 4-Tier	EA	600.40	
1002	20" X 4' SS Shelving, Louvered 4-Tier	EA	697.54	
1003	20" X 6' SS Shelving, Louvered 4-Tier	EA	878.86	
1004	24" X 3' SS Shelving, Louvered 4-Tier	EA	742.87	
1005	24" X 4' SS Shelving, Louvered 4-Tier	EA	814.10	
1006	24" X 6' SS Shelving, Louvered 4-Tier	EA	1,088.69	
11476 2000	Stainless Steel Shelving, Flat, 4-Tier			
2001	20" X 3' SS Shelving, Flat 4-Tier	EA	593.92	
2002	20" X 4' SS Shelving, Flat 4-Tier	EA	678.11	
2003	20" X 5' SS Shelving, Flat 4-Tier	EA	794.68	
2004	24" X 3' SS Shelving, Flat 4-Tier	EA	678.11	
2005	24" X 4' SS Shelving, Flat 4-Tier	EA	801.15	
2006	24" X 6' SS Shelving, Flat 4-Tier	EA	891.82	
11476 3000	Galvanized Steel Shelving, Louvered, 4-Tier			
3001	20" X 3' Galv Shelving, Louvered 4-Tier	EA	279.20	
3002	20" X 4' Galv Shelving, Louvered 4-Tier	EA	332.29	
3003	20" X 6' Galv Shelving, Louvered 4-Tier	EA	457.93	
3004	24" X 3' Galv Shelving, Louvered 4-Tier	EA	319.34	
3005	24" X 4' Galv Shelving, Louvered 4-Tier	EA	360.79	
3006	24" X 6' Galv Shelving, Louvered 4-Tier	EA	438.50	
11476 4000	Galvanized Steel Shelving, Flat, 4-Tier			
4001	20" X 3' Galv Shelving, Flat 4-Tier	EA	279.20	
4002	20" X 4' Galv Shelving, Flat 4-Tier	EA	296.03	
4003	20" X 6' Galv Shelving, Flat 4-Tier	EA	393.17	
4004	24" X 3' Galv Shelving, Flat 4-Tier	EA	296.03	
4005	24" X 4' Galv Shelving, Flat 4-Tier	EA	347.83	
4006	24" X 6' Galv Shelving, Flat 4-Tier	EA	412.59	
11476 5000	Stainless Steel Dunnage Rack			
5001	24" X 3' SS Dunnage Rack	EA	418.15	
5002	24" X 4' SS Dunnage Rack	EA	457.01	
11476 6000	Galvanized Steel Dunnage Rack			
6001	24" X 3' Galv Dunnage Rack	EA	243.29	
6002	24" X 4' Galv Dunnage Rack	EA	256.25	
11476 7000	Mbile Racks			
7001	Mbile Rack w/Pan Slide	EA	1,065.74	
11477	Serving Equipment			
11477 1000	Serving Counters			
1001	Serving Counter, Straight	LF	692.92	
1002	Serving Counter, Curved Section	LF	775.81	
11477 2000	Toasters			
2001	Pop-Up Toaster, 2 Slot	EA	664.43	
2002	Conveyor Toaster	EA	1,393.62	
11477 3000	Drop-In Equipment			
3001	Hot Food Well, Rectangular	EA	246.60	
3002	Hot Food Well, Circular	EA	220.69	
3003	Refrigerated Well, 2 Compt.	EA	987.44	
3004	Refrigerated Well, 3 Compt.	EA	1,123.35	
3005	Refrigerated Well, 4 Compt.	EA	1,277.06	
3006	Frost Cold Plate	EA	1,138.90	
11478	Dispensing Equipment			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11478 1000 Beverage Dispensing				
1001	Coffee Urn, Twin 3 GA	EA	1,877.82	
1002	Coffee Urn, Twin 6 GA	EA	2,676.86	
1003	Coffee Brewer, 5 Burner	EA	718.63	
1006	Hot Chocolate Dispenser	EA	714.08	
1007	Iced Tea Brewer	EA	1,083.21	
1009	Juice Dispenser (Concentrate)	EA	697.50	
1011	Jet Spray Dispenser	EA	1,053.83	
1015	Carbonated Beverage Dispenser	EA	1,947.95	
1016	Carbonated Beverage Dispenser w/ 90# Ice	EA	3,193.72	
1017	Carbonated Beverage Dispenser w/ 150# Ice	EA	5,988.93	
1019	Mlk Dispenser, Bulk, 2 Flavor	EA	927.35	
1021	Mlk Dispenser, Bulk, 3 Flavor	EA	1,296.48	
11478 2000 Dish Dispensers				
2001	Dish Dispenser, 12", Drop-In	EA	391.56	
2002	Dish Dispenser, Mbbile	EA	1,252.50	
2004	Cup And Glass Dispenser, Drop-In	EA	645.93	
2007	Disposable Cup Dispenser, Drop-I n	EA	241.45	
11478 3000 Tray and Silver Dispensers				
3001	Tray & Silver Dispensers Mbbile	EA	1,576.79	
11478 4000 Beverage Chilling Systems				
4001	Beverage Chiller, Small	EA	4,382.84	
4002	Beverage Chiller, Large	EA	8,273.54	
11478 5000 Condiment Dispensers				
5001	Butter Pat Dispenser	EA	79.36	
5002	Bread Dispenser, Counter Top	EA	249.04	
11478 6000 Soft Serve Mchines				
6001	Soft Serve Mchines, Medium	EA	7,154.27	
6002	Soft Serve Mchines, Large	EA	12,097.50	
11479 Heated Cabinets/Holding Cabinets				
11479 1000 Heated Cabinets, Reach-In				
1001	Heated Cabinet, Reach-In, 1 Comp	EA	3,017.79	
1002	Heated Cabinet, Reach-In, 2 Comp	EA	4,365.61	
1003	Heated Cabinet, 1 Comp, Pass-Thru Roll-In	EA	3,163.50	
1004	Heated Cabinet, Pass-Thru, Roll- In 2 Compt	EA	4,577.37	
11479 2000 Heated Cabinets, Mbbile				
2001	Heated Cabinet, Mbbile	EA	3,469.24	
11480 Vending Equipment				
See Csi 12051				
11480 Athletic/Recreational				
11484 0011 School and gym equipment				
11484 1009 Basketball backstops				
1010	School eqpt, fixed, wall mtd, 6' extended, basketball backstops	EA	1,019.68	162.48
1460	School eqpt, basketball backstops, for glass backstop, add		200.00	
1210	School eqpt, wall mtd, 6', swing up, basketball backstops	EA	1,595.81	134.69
1460	School eqpt, basketball backstops, for glass backstop, add		200.00	
1350	School eqpt, hvy duty & hydr, port, manual, basketball	EA	10,015.08	
1460	School eqpt, basketball backstops, for glass backstop, add		200.00	
1410	School eqpt, stationary, ceiling suspended, basketball backstops	EA	2,353.79	221.43
1460	School eqpt, basketball backstops, for glass backstop, add		200.00	
1600	School eqpt, basketball backstops, for elec operated add	EA	1,171.04	
11484 3009 Bleachers, telescoping				
3010	School eqpt, mnl, to 15 tier, 30" row, bleachers, telescoping	SEA	124.20	1.54
3310	School eqpt, mnl, 16 to 20 tier, 30" row, bleachers, telescoping	SEA	125.57	1.54
3610	School eqpt, mnl, 21 to 30 tier, 30" row, bleachers, telescoping	SEA	160.38	2.31
3620	15 Tier Bleacher, 22" Row Spacing	SEA	91.63	2.58
3630	20 Tier Bleacher, 22" Row Spacing	SEA	93.30	2.58
3640	30 Tier Bleacher, 22" Row Spacing	SEA	96.09	3.11
11484 3700 Demountable Exterior Bleachers				
3710	Demountable Exterior Bleachers, Up To 300' Long 3 to 5 Tiers	SEA	35.23	2.78
3730	Demountable Exterior Bleachers, Upto 15' Long, Prefab 3to5 Tiers	SEA	46.38	2.78

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3750	Demountable Exterior Bleachers, Up to 300' Long 6 to 20 Tiers	SEA	39.52	2.78
3770	Demountable Exterior Bleachers, Up to 15' Long Prefab, 6 to 20	SEA	52.66	0.79
11484 4499	Gym divider curtain			
4500	School eqpt, manual, mesh top, vinyl bottom gym divider	SF	7.98	0.89
4700	School eqpt, elec roll up, mesh top, vinyl bottom gym divider	SF	10.87	0.39
11484 5499	Gymnats			
5500	School eqpt, gym mats, 2" thick, naugahyde covered	SF	4.10	
11484 6899	Scoreboards			
6900	School eqpt, scoreboards	EA	2,659.68	

11600 Laboratory, Planetarium, Observatory Equipment

11600 Laboratory Equipment

11601 0009 Laboratory equipment

11601 0009 Cabinets

0020	Laboratory eqpt, cabinets, base, door units, metal	LF	143.73	10.32
0300	Laboratory eqpt, cabinets, base, drawer units, metal	LF	254.65	10.62
0700	Laboratory eqpt, 7' high, tall storage cabinets, open	LF	263.54	12.74
0950	Laboratory eqpt, cabinets, tall storage, w/doors, steel	LF	354.30	

11601 1349 Wall cabinet

1350	Laboratory eqpt, wall cabinet, 12" x 12" w/glass door	LF	165.54	11.35
1400	Laboratory eqpt, wall cabinet, 12" x 31", open	LF	201.08	19.80

11601 1549 Counter tops

1550	Laboratory eqpt, acidproof, counter tops, no base cabinets	SF	21.57	2.23
1650	Laboratory eqpt, stainless stl, counter tops, no base cabinets	SF	70.83	2.59

11601 2549 Glassware washer

2550	Laboratory eqpt, glassware washer, distilled water rinse	EA	5,322.46	
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11601 6249 Steel table

6250	Laboratory eqpt, steel table, open underneath	LF	228.30	
6260	Laboratory eqpt, steel table, doors underneath	LF	323.07	

11700 Medical Equipment

11700 Medical Equipment

11701 0011 Medical equipment

11701 0349 Coulter counter

0350	Medical eqpt, coulter counter, desktop, 14" x 16" x 14" high	EA	29.61	
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11701 0379 Automatic coagulation timer benchtop

0380	Medical eqpt, auto coagulation timer benchtop, for prothrombin	EA	17.12	
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11701 1849 Hot plate, countertop

1850	Medical eqpt, hot plate, cast al plate w/monel encased,	EA	306.91	
1900	Medical eqpt, hot plate, device for heat & stirring, stirrer	EA	292.91	

11701 4999 Scrub, surgical, stainless steel

5000	Medical eqpt, scrub, surgical, sst, single station, min	EA	3,546.90	
5150	Medical eqpt, scrub, surgical, sst, triple station	EA	5,269.92	

11701 8149 Utility cabinet, stainless steel

8150	Medical eqpt, utility cabinet, sst	EA	506.14	
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11701 8160 Scales.

8161	Dual Reading Scale, w/Height Rod Pound/Metric Platform 10"x14"	EA	428.44	
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11701 8170 Stands.

8171	Mayo Stand, Push Button Adjust SST, With Tray 16"x 21"	EA	510.95	
8172	Mayo Stand, Foot Operated	EA	599.69	
8173	Solution Stand, w/14" SST Basin 15"x14"x33" w/Swivel Casters	EA	289.23	

11701 8180 Racks.

8181	Revolving Chart Rack, 40 Charts Tubular Steel on Swival Casters	EA	1,438.78	
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11701 8190 Meters

8191	Air Flowmeter with Adapters For General Hospital Use	EA	487.02	
8192	Oxygen Flowmeter, w/Adapters Needle Flow Control Valve	EA	408.18	
8193	Flow Detector, Ultrasonic Doppler Portable, Hand Held, Battery	EA	640.74	

11701 8200 Holders.

8201	Chart Holder, 250 Page, 3 Ring 9"x 13"x 2" with Sheet Cap	EA	17.67	
8202	Patient ID Holder, 12"x 15"x 5" Plastic, Tiered with 20 Slots	EA	26.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11701 8210 Lights.				
8211	Examination Light, Floor Mdel on Casters w/15" Reflector	EA	833.74	
11701 8220 Carts.				
8221	Plaster Dispenser, SST Cabinet 33"x38"x23" w/Accessories	EA	1,960.48	
8222	Supply Cart, SST, 400# Capacity 17"x 28"x 33" W/Swivel Casters	EA	209.55	
8223	Portable Wire Cart, Chrome Plated 18"x 36"x 69" SST Tubing Frame	EA	215.21	
8224	Utility Cart, 3-Tier, SST 400# Capacity 22"x 39"x 37"	EA	684.62	
11701 8230 Buckets.				
8231	12 Ga SST Kick Bucket, 12 Qt w/ST Casters & Removable Bucket	EA	169.52	
11701 9000 Mscellaneous.				
9001	Cervical Traction Unit, Over-Door Incl 12" Spreader Bar & 20# Wt	EA	90.55	
9002	Syringe Disposal Unit, Wall Unit Tamper-Resistant & Autoclavable	EA	34.40	
9003	Waste Recepticle, SST 20 Qt Cap Step-On Action; Size 12"x12"x18"	EA	248.10	
11702 Cardiac.				
11702 1000 Carts.				
1001	Cardiac Crash Cart w/Monitor	EA	3,766.32	
11702 2000 Ekg System				
2001	3-Channel EKG System, Alum Frame w/Chart Mtd Monitoring Device	EA	9,364.03	
11702 3000 Treadmill				
3001	Treadmill, Portable w/Remote Ctr Alum Frame; 0-7 MPH Speed	EA	7,021.79	
11703 Medication				
11703 1000 Medication				
1001	Medicine Cart, SST 31"x22"x40" w/Double Drawer & 2 Qt Pitcher	EA	994.05	
1005	Struct Stl Medicine Prep Center 20"Deepx80"High, Cpl & Stationary	EA	1,669.48	
11704 Optical				
11704 1000 Optical				
1001	Optical Exam Chair & Stand	EA	8,575.85	
1011	Optical, Chart Ansler Bookform	EA	94.31	
1021	Optical Drum, Opticokinetic	EA	147.68	
1031	Optical, Exophthalmometer	EA	30.91	
1032	Optical, Gonioscope	EA	1,449.64	
1033	Optical, Hyfector; Desk Mounted w/Handle & Needle	EA	935.94	
1041	Optical Light, Muscle Wall	EA	57.85	
1042	Desk Mtd Slit Lamp w/Microscope And Inclined Eytubes	EA	290.71	
1051	Hand Held Magnifier Light w/3x Ground & Polished Lens	EA	46.76	
1061	Ultramatic Phoropter	EA	5,159.46	
1071	1 Meter Compact Screen Tangent	EA	120.18	
1081	Anod Alum Trial Set, Color Coded	EA	2,190.07	
1091	Desk Mtd Vision Tester	EA	182.38	
11705 Physical Therapy.				
11705 1000 Physical Therapy				
1001	Paraffin Bath, 15"x7"x27"x10" 115V for Hand & Foot (Mbil)	EA	1,651.98	
1011	Hydrotherapy Adjustable Chair w/Mobile Whirlpool	EA	195.85	
1021	Diathermy, Shortwave & Portable	EA	1,723.17	
1031	Exercise Bike, 35"x15" Portable	EA	520.29	
1041	Hydrocollator, 129"x 90"x 160" 4 Pack Portable	EA	1,434.58	
1051	Lamp, Infrared w/3 Heat Var. Ctrl	EA	441.80	
1052	Lamp, Ultra Violet w/425 Watts Base Mtd w/Casters	EA	280.66	
1061	Mirror, Posture Type 1 Section 27"Wx72"H Mtd on Casters	EA	435.20	
1071	Parallel bars, 12' (3.7M) Long Portable; Adjustable w/Platform	EA	698.99	
1072	Exercise Mat, 4' W x 10' L x 1" D Urethane Foam Nylon w/Handles	EA	316.78	
1073	Wall Pulley, Duplex & Wall Mtd	EA	2,975.74	
1081	Crutch Rack, 66"x16"x13" Wall Mtd	EA	519.00	
1082	Room Prefab 72"x 76"x 78" Single Wall Const & Soundproof	EA	11,412.34	
1091	Stimulator, Galvanic-Faradic	EA	56.90	
1092	Ultrasound, Muscle Stimulator 13"x13"x8" Portable Cart Mounted	EA	2,170.91	
1093	Sandbag Set w/Velcro Straps Saddle Bag Type	EA	368.66	
1111	Whirlpool Lo-Boy, Mibile SST 18"D x 24"W x 60"L	EA	3,544.83	
1112	Whirlpool, (Arm, Leg & Hip), SST 28"D x 42"L x 20"W w/accessories	EA	3,158.33	
1121	Wagon, Dumbell Storage 46"x25"x41" size Dumbells	EA	637.23	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11706 Radiology				
11706 1000 Radiology				
1001	Radiology Generator, 3Ph 12 Pulse 480V for Two X-Ray Tubes	EA	102,549.13	
1002	Radiology Generator, 3Ph 12 Pulse 480V f/2 X-Ray Tubes, 1 Per Tabl	EA	118,472.97	
1003	Radiograph & Fluoroscopic Table, Mtor Oper w/15-90 Deg Tilting	EA	135,229.66	
1004	Radiographic Table, Mtor Driven w/12-90 Deg Tilting	EA	33,757.69	
1005	Fluoroscope Image/TV System Dual Mde 5"/9" High Performance	EA	54,034.68	
1006	Developing Processor, Complete 385 Sheets of Film per Hour	EA	19,633.30	
1011	Cassette Transfer Cabinet, 4 Door 22"x22"x22" w/Lead Lining	EA	1,811.60	
1012	Base Storage Cabinet, Sectional Carbon Steel or Plas Lam Part	LF	712.75	
1013	Wall Storage Cabinet w/Door Carbon Steel or Plas Lam Part	LF	868.48	
1014	Bucky Wall Stand, Vertical Floor/Wall Mtd w/ Cassette Tray	LF	8,205.16	
1021	Ceiling Tubemount, 59" Deep	SF	21,020.98	
11710 Medical Sterilizing Equipment				
11710 1000 Steam Sterilizers				
1001	Steam Sterilizer, w/Rack & Tray Size 13"x15"x9" 120V w/Controls	EA	3,350.90	
1002	Steam Sterilizer, w/Rack & Tray	EA	2,208.08	
1003	Steam Sterilizer, Fast Drying w/ Time-Temp Control	EA	2,361.20	
1004	Steam Sterilizer, Compact Unit	EA	1,680.29	
1005	Steam Sterilizer, Semi-Automatic	EA	2,527.01	
1006	Steam Sterilizer, Fl Load 1 Door	EA	83,116.86	
1007	Steam Sterilizer, Fl Load 2 Door	EA	127,015.53	
1008	Steam Sterilizer, Utensil Washer	EA	24,606.42	
1009	Steam Sterilizer, Auto Wash/Ster	EA	21,703.93	
1021	Steam Sterilizer, Gen Purpose 1 Door, Chamber Size 73"x33"x26"	EA	29,398.82	
2001	Steam Generator, Elect 10-180KW 10 KW To 180 KW	EA	49,466.30	
11710 3000 Surgical Scrub				
3001	Surgical Scrub Sink, Single	EA	2,178.62	
3002	Surgical Scrub Sink, Triple	EA	4,230.52	
11710 4000 Gas Sterilizers.				
4001	Gas Sterilizer, Auto, Bench Mtd Chamber Size 12"x12"x24"	EA	36,155.83	
11720 Surgical Equipment				
11720 1000 Surgical Tables				
1001	Surgical Equip, Table - Standard	EA	25,048.14	
1002	Surgical Equip, Table - Deluxe	EA	30,160.82	
11720 2000 Lights				
2001	Surgical Equip, Lights - General	EA	10,480.99	
2002	Surg Light, 5 Lamp 22"Dia, Ceiling	EA	25,303.32	
2003	Surg Light, 8 Lamp 30"Dia, Ceiling	EA	30,354.01	
11720 3000 Water Stills				
3001	Surg Equip, H2O Still 4 Liter/Hr	EA	2,328.96	
3002	Surg Equip, H2O Still 8 Liter/Hr	EA	3,555.02	
3005	Surg Equip, Distilled Water 19 Liters/Hr, Wall Munted	EA	12,726.10	
4001	Surg Equip, Gas Aerator Bench Mtd, Chamber 16"x24"x18"	EA	2,945.67	
4011	Surg Equip, Ultrasonic Cleaner	EA	1,625.94	
4021	Surg Equip, H2O Deionizer, 10 GPM Floor Mtd	EA	7,824.67	
11730 X-Ray Equipment				
11730 1000 X-Ray Equipment				
1001	X-Ray Equip, Mbbile Unit	EA	7,419.81	
1003	X-Ray Equip, Film Viewer-Single	EA	133.08	
1004	X-Ray Equip, Film Viewer-4 Bank	EA	530.77	
11740 Autopsy Equipment				
11740 1000 Autopsy Table				
1001	Autopsy Equip, Table - Standard	EA	7,567.24	
1002	Autopsy Equip, Table - Deluxe	EA	11,292.12	
11750 Patient Care Equipment				
11750 1000 Incubators				
1001	Patient Care, Incubator 15 CF	EA	2,957.46	
1002	Patient Care, Incubator 29 CF	EA	10,746.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1021	Patient Care, Incubator - Infant Intensive Care Unit 34"x18"x16"	EA	9,985.60	
11750 2000	Beds			
3002	Patient Care, Youth Bed 80"L x 36"W, w/IV Pole	EA	2,001.20	
3003	Patient Care, Stretcher Bed 86"L x 35"W, w/Blanket Shelf	EA	4,991.61	
11750 5000	Headwall.			
5001	Patient Care, Headwall-Alum w/Back Frame & Console Assy	EA	2,144.64	
11760	Dental Equipment			
See Csi 12251 For Chairs.				
11760 1000	Dental Furnishings.			
1011	Dental Equip, Complete for Dental Exam & Treatment	EA	15,452.74	
11760 2000	Dental Care Equipments.			
2001	Dental Equip, Drill Console w/Accessories	EA	3,145.54	
2002	Dental Equip, Amalgamator Can Triturate all Alloys	EA	230.99	
2005	Dental Equip, Lath-Finish Polish w/1/4 Hp Two-Speed	EA	242.97	
2006	Dental Equip, Lath 1/4 Hp Heavy Duty for Grinding & Polish	EA	267.02	
2007	Dental Equip, Model Trimmer 1/2 Hp Bench Mtd	EA	481.93	
2008	Dental Equip, Wall Mtd Dely Sys Auto Control of 3-5 Handpieces	EA	2,044.28	
2009	Dental Equip, Sandblaster 110V Bench Mtd, 9"x9"x9" Air Operated	EA	239.67	
2011	Dental Equip, Ultrasonic Cleaner Desk Mtd, w/Heater & Timer	EA	415.79	
2012	Dental Equip, Curing Unit Bench Mtd, 17"x17"x16"	EA	1,079.95	
2021	Dental Equip, Oral Evacuation Sys Dual 2 Hp Pump, 16"x24"x24"	EA	3,330.43	
2031	Dental Equip, Sterilizer 2 Trays w/Chamber 11"Wx5"Hx7"D	EA	440.51	
11760 3000	Dental Lights			
3001	Dental Lights, Floor/Ceiling Mtd	EA	1,242.66	
3002	Dental Lights, Fixed Ceiling Mtd	EA	1,286.02	
11760 4000	X-Ray Unit (See Csi 11730)			
4001	Dental X-Ray Unit, Mobile	EA	4,350.86	
4002	Dental X-Ray Unit, 76" Wall Mtd	EA	3,536.24	
4003	Dental X-Ray Unit, 72" w/Remote	EA	3,877.41	
4011	Dental X-Ray Unit, Illuminator for Desk or Wall, 5"x14" Screen	EA	79.51	
4021	X-Ray Film Processor, Desk Top w/Daylight Loader	EA	3,549.28	
4031	X-Ray Unit Shield, 33"x 74"x 7" Lead Lined and Portable	EA	2,786.28	
11760 5000	Miscellaneous Equipment.			
5001	Chair, X-Ray Utility, Electric	EA	3,652.99	
5005	Engines, 3 Section Engine Arm w/Foot Rheostat @ 40000 RPM	EA	552.93	
5011	Auto Glazing Furnace, 110V 6"W x 11"H x 6"D	EA	612.30	
5021	Dental Cabinet, 6"x4"x7"w/Drawers w/Fold-in Door&1 Pull Out Shelf	EA	1,203.72	
11770	General Medical Equipment			
11770 1000	Audiometer			
1001	Dual Channel Audiometer	EA	9,621.29	
1011	Acoustic Impedence Meter For Calibrating Audiometers	EA	1,425.96	
11770 2000	Cabinet			
2001	SST Cabinet 46"x21"x28" for ENT Comp. Unit, Floor Mtd w/Casters	EA	3,573.51	
11770 3000	Illuminator.			
3001	Single Panel Illuminator Surface Mtd& Non-Explosion Proof	EA	88.16	
3002	Dual Panel Illuminator	EA	156.39	
3003	4-Panel Illuminator	EA	291.15	
11770 5000	Systems Tools			
5001	Biomedical Engr Equip Storage Consisting of Oscilloscope Stor	EA	9,045.91	
11780	Medical Furnishings.			
11780	Medical Furnishings			
11780 1000	Chair.			
1001	ENT Treatment Chair, Mxi-Recline 6 Position w/Swing-Away Tray	EA	4,438.87	
1005	Adult Wheelchair, Self-Propelled Collapsible	EA	890.27	
11780 2000	Stools.			
2001	Exam Room Stool, Pneumatic w/Backrest & Adj from 19" to 31"	EA	262.90	
2002	ENT Physician Stool, Square Seat w/Backrest & Adj from 18" to 24"	EA	279.25	
2003	Platform Stool, Stackable	EA	124.77	
2004	Revolving Stool w/Footrest w/3" Thick Seat Cushion, Adj.	EA	236.04	
2005	Revolving Stool w/Solid SST Seat Adjustable from 19" to 31"	EA	219.69	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11780 3000	Stretchers.			
3001	ER & Mnor Surgery Stretcher SST Top w/6 IV Sockets	EA	4,818.79	
11780 4000	Table.			
4001	Exam Table, Elect Foot Operated Size 54"x26-1/2"x up to 35-1/2"	EA	1,884.51	
4002	Exam Table, Hydraulic Foot Oper 75"x24"x(19" to 38") High	EA	2,101.06	
11790	Medical Instruments			
11790 1000	Medical Instruments			
1001	Cast Cutter, w/Vacuum 11 Liter Canister w/4 wheels	EA	909.44	
1011	Headlight, Halogen w/Headband; w/Wall Mtd Transformer @110-130V	EA	451.53	
1021	Otoscope/Ophthalmoscope, Wall Mtd	EA	760.02	
1022	Otoscope Operating Head, 3.5V	EA	148.22	
1023	Otoscope/Ophthalmoscope Set, Portable w/Rechargeable Handle	EA	433.82	
1031	Resuscitation Bag, Adults Hand Operated & Portable	EA	207.57	
1032	Resuscitation Bag, Pediatrics Hand Operated & Portable	EA	207.57	
1041	Sphygmomanometer, Wall Mercurial Velcro Cuff w/8' Coiling Tubing	EA	158.48	
1042	Sphygmomanometer, Portable	EA	158.56	
1051	Spreader, Cast w/Round Guard Hand Held, 18" (46cm) Long	EA	207.67	
1061	Suction Set, Dual-Purpose w/128-oz Collection Bottle, 115V	EA	2,650.86	
1062	Suction Set, Intermittent w/128-oz Collection Bottle, 120V	EA	1,121.96	
11802	Laundry Equipment			
11802 1000	High Capacity, Heavy Duty			
11802 1100	Washer Extractors			
1101	Washer Extractor, 135# 240V	EA	15,569.58	
1102	Washer Ext, 135# 240V Pass Thru	EA	52,134.47	
1103	Washer Extractor, 200# 240V	EA	52,668.88	
1104	Washer Ext, 200# 240V Pass Thru	EA	58,237.34	
1201	Washer Extractor/Dryer, 110# 240V	EA	5,262.42	
1301	Washer Ext, Hand Oper Presser	EA	6,031.70	
1401	Washer Ext, Mushroom Press 115V	EA	3,527.18	
11802 1500	Spreader Feeders			
1501	Spreader Feeders, 2Sta 240V	EA	44,552.95	
1502	Spreader Feeder, 4Sta 240V	EA	46,185.90	
11802 1600	Delivery Carts			
1601	Laundry Carts, 12 Bushel Cap	EA	189.06	
1602	Laundry Carts, 16 Bushel Cap	EA	222.06	
1603	Laundry Carts, 18 Bushel Cap	EA	233.52	
1604	Laundry Carts, 30 Bushel Cap	EA	337.77	
1605	Laundry Carts, 40 Bushel Cap	EA	414.86	
11802 1700	Hospital Linen			
1701	Hospital Linen, 30 Bed Capacity	EA	1,523.21	
1702	Hospital Linen, 24 Bed Capacity	EA	1,523.21	
11802 2000	Laundry Equipment, Low Cap.			
11802 2100	Pressers			
2101	Pressers, Low Cap Air Operated	EA	4,732.97	
2102	Pressers, Low Cap Hand Operated	EA	3,980.78	
2201	Pressers, Low Cap Extractor	EA	5,474.94	
2301	Pressers, Ironer 48"(122cm) 240V	EA	169,283.97	
2401	Pressers, Coin Dry Cleaner 20#	EA	19,853.11	
11802 2500	Coin Washers & Dryer			
2501	10#(4.6kg)Cap Coin Washer&Dryer	EA	823.33	
2502	20#(9kg)Cap Coin Washer & Dryer	EA	2,858.97	
2601	Elect Coin Dryer	EA	1,525.00	
2605	Dryer, Clothes, Electric	EA	567.89	
11802 2700	Miscellaneous Items.			
2711	Rack, 216 Coats & 36 Hat Cap, El ect Foot Oper 11' x4' x6'	EA	4,644.62	
2721	Sales Slip Register 5-1/2" x 8-1 /2"	EA	26.35	
11860	Waste Handling Equipment			
11861	Packaged Incinerators			
11861 1000	Incinerator, Electric			
1001	Elec Pkg Incinerator, 100#/Hr Min	EA	10,183.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1002	Elec Pkg Incinerator, 100#/Hr Max	EA	17,414.19	
1003	Elec Pkg Incinerator, 400#/Hr Min	EA	26,303.07	
1004	Elec Pkg Incinerator, 400#/Hr Max	EA	30,171.23	
1005	Elec Pkg Incinerator, 1000#/H Min	EA	74,458.77	
1006	Elec Pkg Incinerator, 1000#/H Max	EA	116,970.42	
11861 2000	Incinerator Medical-Waste			
2001	Med Waste Incinerator, 25#/Hr Size 2'7"x4'0"	EA	8,801.33	
2002	Med Waste Incinerator, 50#/Hr Size 2'11"x4'11"	EA	17,274.35	
2003	Med Waste Incinerator, 75#/Hr Size 3'8"x5'0"	EA	23,129.83	
2004	Med Waste Incinerator, 100#/Hr Size 3'8"x6'0"	EA	34,255.00	
11862	Waste Compactors			
11862 1000	110 Volt Compactors			
1001	Waste Compactor, 110V @ 75#/Hr	EA	7,468.37	
1002	Waste Compactor, 110V @ 250#/Hr	EA	9,292.91	
11862 2000	230 Volt Compactors			
2001	Waste Compactor, 230V @ 600#/Hr Hand fed	EA	9,192.04	
2002	Waste Compactor, 230V @ 600#/Hr Chute fed	EA	10,302.82	
11862 3000	Heavy Duty Industrial Compactor			
3001	Indus Waste Compactor, 1 CY (.76 MB) Heavy Duty	EA	9,077.11	
3002	Indus Waste Compactor, 3 CY (2.3 MB) Heavy Duty	EA	14,042.90	
3003	Indus Waste Compactor, 5CY (3.8M 3) Heavy Duty	EA	34,438.79	
11865	Chutes And Collectors			
11865 1000	Linen Chutes And Accessories Stainless Steel- In			
1001	Linen Chutes & Collectors, SST 1 8" (46cm) Dia, Incl Sprinklers	FLR	1,441.25	
1101	For Galvanized Metal Deduct		-142.54	
1102	For Aluminum Deduct		-700.29	
2101	For Aluminum Add		123.95	
2102	For Stainless Steel Add		557.75	
1002	Linen Chutes & Collectors, SST 2 4" (61cm) Dia, Incl Sprinklers	FLR	1,770.04	
1101	For Galvanized Metal Deduct		-178.17	
1102	For Aluminum Deduct		-875.37	
2101	For Aluminum Add		154.93	
2102	For Stainless Steel Add		697.19	
1003	Linen Chutes & Collectors, SST 3 0" (76cm) Dia, Incl Sprinklers	FLR	1,936.25	
1101	For Galvanized Metal Deduct		-195.59	
1102	For Aluminum Deduct		-960.96	
2101	For Aluminum Add		170.08	
2102	For Stainless Steel Add		765.37	
1004	Linen Bottom Collector, SST	EA	1,037.32	
1101	For Galvanized Metal Deduct		-98.99	
1102	For Aluminum Deduct		-486.32	
2101	For Aluminum Add		86.07	
2102	For Stainless Steel Add		387.33	
11865 2000	Trash Chutes And Accessories Aluminized Steel- I			
2001	Trash Chutes & w/Sprinklers Aluminized Stl 18" (46cm) Dia	FLR	248.25	
2002	Trash Chutes & w/Sprinklers Aluminized Stl 24" (61cm) Dia	FLR	300.90	
2003	Trash Chutes & w/Sprinklers Aluminized Stl 30" (76cm) Dia	FLR	347.82	
2004	Trash Chutes & w/Sprinklers Aluminized Stl 36" (91cm) Dia	FLR	383.37	
2005	Refuse Bottom Hopper, 36" (91cm) Aluminized Stl, w/Sprinklers	EA	317.10	
11910	Residential Kitchen Equipment			
11910 1000	Cooking Ranges Electric			
1001	Residential Elect Range, 30" Free Standing w/1 Oven	EA	831.38	45.50
1002	Residential Elect Range, 30" Free Standing w/2 Ovens	EA	1,540.93	44.39
1003	Residential Elect Range, 21" Free Standing w/1 Oven	EA	877.18	95.95
1004	Resid Elect Range, 30" Built-In w/1 Oven	EA	1,343.37	133.02
1005	Resid Elect Range, 30" Built-In w/2 Ovens	EA	1,535.97	132.08
1006	Resident Elec Range, Counter Top Standard w/4 Burners	EA	496.45	50.50
1007	Resident Elec Range, Counter Top Standard w/4 Burners & w/Grill	EA	975.40	49.36
11910 2000	Combination Range, Refrigerator, And Sink			
2001	Combination Range, Refr & Sink 30" (76cm) Wide Unit	EA	2,964.99	155.20
2002	Combination Range, Refr & Sink 60" (152cm) Wide Unit	EA	4,300.80	107.41

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2003	Combination Range, Refr & Sink 72" (183cm) Wide Unit	EA	4,599.47	127.48
2004	Combination Range, Refr & Sink 48" (122cm) Wide Unit	EA	3,965.92	76.53
2005	Combination Range, Refr & Sink 48" (122cm) Wide Unit, w/o Range	EA	3,782.19	64.22
11910 3000	Trash Compactor			
3001	Trash Compactor, 4to1 Compaction	EA	968.13	41.28
11910 4000	Cooking Ranges Gas			
4001	Residential Gas Range, 30" Free Standing w/1 Oven	EA	763.58	
4002	Residential Gas Range, 30" Free Standing w/2 Ovens	EA	2,481.51	
4003	Residential Gas Range, 21" Free Standing w/1 Oven	EA	1,016.99	
4004	Residential Gas Range, 27" Built -In w/1 Oven	EA	2,504.09	
4005	Residential Gas Range, Countertop w/4 Burners	EA	829.73	
11910 5000	Dishwasher, Built In			
5001	Dishwasher, Built-In, 2 Cycles	EA	648.77	64.03
5002	Dishwasher, Built-In, 7 Cycles	EA	970.60	69.84
11910 6000	Disposal			
6001	Garbage Disposal, 1/2 Hp Insul	EA	228.09	62.58
6002	Garbage Disposal, 1/3 Hp Insul	EA	164.73	
11910 7000	Hood For Range, 2 Speed, Vented			
7001	30"(76cm)Wide Range Hood 2 Speed & Vented	EA	293.33	60.19
7002	40"(106cm)Wide Range Hood 2 Speed & Vented	EA	344.01	59.13
11910 8000	Removal & Reinstallation Of Residential Kitchen			
Note: Equipment. Including Storage, Cleaning And Final Connections.				
8001	Remove & Reinstall Garbage Disposer	EA	57.05	
8002	Remove & Reinstall Stove/Range	EA	85.23	
8003	Remove & Reinstall Dishwasher	EA	123.57	
8004	Remove & Reinstall Range Hood	EA	52.98	
11910 9000	Ice Maker, Automatic			
9001	Auto Ice Maker, 30# (13.6kg)/Day	EA	1,929.55	21.37
9002	Auto Ice Maker, 50# (22.7kg)/Day	EA	2,090.68	77.10
11920	Residential Washing Equipment			
11920 2000	Residential Washer/Dryer			
2001	Residential Washer - 4 Cycle	EA	523.32	
2002	Residential Dryer - Electric	EA	453.32	
2003	Residential Dryer - Gas	EA	485.63	
11920 3000	Water Softener, Automatic (See Csi 15253)			
3001	Automatic Water Softener 30 Grains/Gallon	EA	993.51	58.96
3002	Automatic Water Softener 70 Grains/Gallon	EA	1,840.58	73.06
11930	Residential Environmental Equipment			
11930 1000	Heaters, Electric, Built-In (See Csi 15741)			
1001	Electric Heater, 1250 Watt Built-In Ceiling Type	EA	281.05	57.09
1002	Electric Heater, 1250 Watt Built-In Wall Mtd	EA	281.05	57.09
1003	Electric Heater, 1500 Watt Built-In Wall Type w/Blower	EA	279.21	37.73
1004	Electric Heater, 3000 Watt Built-In Wall Type w/Blower	EA	448.30	55.24
11940 1000	Folding Access Stairs Disappearing			
11940 1010	Metal Frame Metal Stair			
1011	Folding Access Stair, 24"x48"x8' Disappearing w/Metal Frame&Stair	EA	1,197.63	29.39
1012	Folding Access Stair, 24"x48"x9' Disappearing w/Metal Frame&Stair	EA	1,237.44	29.39
1013	Folding Access Stair, 24"x48"x11' Disappearing w/Metal Frame&Stai	EA	1,237.44	29.39
1014	Folding Access Stair, 24"x48"x12' Disappearing w/Metal Frame&Stai	EA	1,717.28	29.29
1015	Folding Access Stair, 24"x54"x10' Disappearing w/Metal Frame&Stai	EA	1,276.21	29.36
1016	Folding Access Stair, 24"x54"x11' Disappearing w/Metal Frame&Stai	EA	1,679.56	29.29
1017	Folding Access Stair, 28"x54"x10' Disappearing w/Metal Frame&Stai	EA	1,276.21	29.36
1018	Folding Access Stair, 28"x54"x11' Disappearing w/Metal Frame&Stai	EA	1,679.56	29.29
11940 1020	Wood Frame Wood Stair			
1021	Folding Access Stair, 24"x54"x9' Disappearing w/Wood Frame&Stairs	EA	376.14	16.75
1022	Folding Access Stair, 25"x54"x9' Disappearing w/Wood Frame&Stairs	EA	390.46	16.72
1023	Folding Access Stair, 25"x54"x10' Disappearing w/Wood Frame&Stair	EA	404.79	16.72

11980 Rifle Range Equipment
11980 Rifle Range Equipment

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
11980 1000	Rifle Range 600 In Usar Firing Range			
	Note: Escalator Type Bullet Trap Assembly Control Panel, Overhead Target Carrier, (Rail Or Trolley With Hand Crank			
1001	3 Position Range	EA	22,358.98	933.33
1002	4 Position Range	EA	28,630.93	936.03
1003	5 Position Range	EA	34,383.06	934.92
1004	6 Position Range	EA	40,041.46	933.77

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
12300 Manufactured Cabinets/Casework				
12301 Metal Casework				
12301 1000 Key Cabinet				
1001	Wall Munted Key Cabinet, Up To 60 Keys	EA	129.95	
1002	Wall Munted Key Cabinet, Up To 1200 Keys	EA	1,192.45	
1003	Drawer Type Key Cabinet, Up To 6 00 Keys	EA	1,274.07	
1004	Drawer Type Key Cabinet, Up To 2 400 Keys	EA	2,882.23	
1005	Tray Type Key Cabinet, Up To 20 Keys	EA	63.64	
1006	Tray Type Key Cabinet, Up To 50 Keys	EA	90.88	
12500 Window Treatment				
12501 Draperies				
12501 2000 Draperies, Lined Overtaps And Returns				
Note: Material Only				
12501 2100 32" Thru 48" Wide				
2101	26" to 39" Long	EA	89.92	
2102	40" to 63" Long	EA	93.97	
2103	64" to 72" Long	EA	100.54	
2104	73" to 81" Long	EA	103.06	
2105	82" to 90" Long	EA	109.12	
2106	91" to 99" Long	EA	117.20	
2107	100" to 108" Long	EA	122.26	
2108	109" to 120" Long	EA	129.33	
2109	121" to 130" Long	EA	140.44	
12501 2200 48" Thru 72" Wide				
2201	26" to 39" Long	EA	131.35	
2202	40" to 63" Long	EA	140.44	
2203	64" to 72" Long	EA	147.52	
2204	73" to 81" Long	EA	153.58	
2205	82" to 90" Long	EA	167.72	
2206	91" to 99" Long	EA	174.80	
2207	100" to 108" Long	EA	180.86	
2208	109" to 120" Long	EA	193.99	
2209	121" to 130" Long	EA	208.14	
12501 2300 54" Thru 96" Wide				
2301	26" to 39" Long	EA	174.80	
2302	40" to 63" Long	EA	187.93	
2303	64" to 72" Long	EA	193.99	
2304	73" to 81" Long	EA	208.14	
2305	82" to 90" Long	EA	221.27	
2306	91" to 99" Long	EA	234.41	
2307	100" to 108" Long	EA	241.48	
2308	109" to 120" Long	EA	255.63	
2309	121" to 130" Long	EA	274.82	
12501 2400 80" Thru 120" Wide				
2401	26" to 39" Long	EA	221.27	
2402	40" to 63" Long	EA	234.41	
2403	64" to 72" Long	EA	241.48	
2404	73" to 81" Long	EA	261.69	
2405	82" to 90" Long	EA	274.82	
2406	91" to 99" Long	EA	288.97	
2407	100" to 108" Long	EA	308.17	
2408	109" to 120" Long	EA	323.32	
2409	121" to 130" Long	EA	333.43	
12501 2500 96" Thru 144" Wide				
2501	26" to 39" Long	EA	261.69	
2502	40" to 63" Long	EA	280.89	
2503	64" to 72" Long	EA	287.96	
2504	73" to 81" Long	EA	308.17	
2505	82" to 90" Long	EA	328.37	
2506	91" to 99" Long	EA	348.58	
2507	100" to 108" Long	EA	368.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2508	109" to 120" Long	EA	389.00	
2509	121" to 130" Long	EA	414.26	
12501 2600	122" Thru 168" Wide			
2601	26" to 39" Long	EA	308.17	
2602	40" to 63" Long	EA	328.37	
2603	64" to 72" Long	EA	343.53	
2604	73" to 81" Long	EA	363.74	
2605	82" to 90" Long	EA	383.95	
2606	91" to 99" Long	EA	409.20	
2607	100" to 108" Long	EA	429.41	
2608	109" to 120" Long	EA	449.62	
2609	121" to 130" Long	EA	484.98	
12501 2700	128" Thru 192" Wide			
2701	26" to 39" Long	EA	348.58	
2702	40" to 63" Long	EA	373.84	
2703	64" to 72" Long	EA	389.00	
2704	73" to 81" Long	EA	414.26	
2705	82" to 90" Long	EA	434.46	
2706	91" to 99" Long	EA	459.72	
2707	100" to 108" Long	EA	500.14	
2708	109" to 120" Long	EA	515.29	
2709	121" to 130" Long	EA	550.66	
12501 2800	144" Thru 216" Wide			
2801	26" to 39" Long	EA	394.05	
2802	40" to 63" Long	EA	414.26	
2803	64" to 72" Long	EA	434.46	
2804	73" to 81" Long	EA	464.78	
2805	82" to 90" Long	EA	495.09	
2806	91" to 99" Long	EA	525.40	
2807	100" to 108" Long	EA	550.66	
2808	109" to 120" Long	EA	575.92	
2809	121" to 130" Long	EA	621.38	
12501 2900	160" Thru 240" Wide			
2901	26" to 39" Long	EA	434.46	
2902	40" to 63" Long	EA	469.83	
2903	64" to 72" Long	EA	484.98	
2904	73" to 81" Long	EA	515.29	
2905	82" to 90" Long	EA	550.66	
2906	91" to 99" Long	EA	580.97	
2907	100" to 108" Long	EA	611.28	
2908	109" to 120" Long	EA	641.59	
2909	121" to 130" Long	EA	692.11	
12501 3000	Install Draperies			
3001	Install Draperies	LF	6.70	
12510	Blinds			
12510 4300	Blinds			
4300	Mni Blinds 1"	SF	8.26	
4301	Vertical Blinds 2 1/2"W with Fab ric Inserts	SF	24.65	
4303	Solid Colors, 1"Horiz Alum Slats Custom Min	SF	3.30	
4304	Solid Colors, 1"Horiz Alum Slats Custom Max	SF	8.40	
4305	Solid Colors, 2"Horiz Alum Slats Custom Min	SF	4.61	
4306	Solid Colors, 2"Horiz Alum Slats Custom Max	SF	7.32	
4307	Solid Colors, 2"Horiz Alum Slats Stock Min	SF	3.11	
4308	Solid Colors, 2"Horiz Alum Slats Stock Max	SF	5.57	
4309	Solid Colors, 2"Horiz Steel Slat s Stock Min	SF	1.68	
4310	Solid Colors, 2"Horiz Steel Slat s Stock Max	SF	4.46	
4311	Solid Colors, 2"Horiz Steel Slat s Custom Min	SF	1.68	
4312	Solid Colors, 2"Horiz Steel Slat s Custom Max	SF	7.15	
4313	Solid Colors, Vertical 3"-5" PVC Or Cloth Strips Min	SF	7.46	
4314	Solid Colors, Vertical 3"-5" PVC Or Cloth Strips Max	SF	12.23	
4315	Solid Colors, 4" Alum Slats Min	SF	4.19	
4316	Solid Colors, 4" Alum Slats Max	SF	7.91	
4320	Mylar Mirror Finish Strips to 8" Wide Min	SF	12.74	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4321	Mylar Mirror Finish Strips to 8" Wide Max	SF	19.00	
12520 Lightproof Shades				
12520 1000 Non-Motorized Lightproof Shades				
1001	Non-Motorized Lightproof Shades	SF	5.48	
12520 4301 Cubical Curtains				
4302	Cubical Curtains	SF	12.29	
12520 6000 Motorized Lightproof Shades				
6001	Motorized Lightproof Shades	SF	15.46	
12530 Drape/Curtain Hardware				
12531 0010 Drapery hardware				
12531 3999 Traverse rods, adjustable				
4000	Drapery hardware, traverse rods, adjustable, 28" to 48"	EA	30.25	9.28
4020	Drapery hardware, traverse rods, adjustable, 48" to 84"	EA	34.87	9.78
4060	Drapery hardware, traverse rods, adjustable, 84" to 156"	EA	43.59	10.32
4080	Drapery hardware, traverse rods, adjustable, 100" to 180"	EA	52.19	11.28
4090	Drapery hardware, traverse rods, adjustable, 156" to 228"	EA	61.15	11.71
4200	Drapery hardware, 30" to 48", traverse rods, double rods,	EA	71.06	15.41
4220	Drapery hardware, 48" to 86", traverse rods, double rods,	EA	87.32	15.14
4240	Drapery hardware, 86" to 150", traverse rods, double rods,	EA	96.27	14.51
4260	Drapery hardware, 100" to 180", traverse rods, double rods,	EA	104.14	15.97
12531 4299 Tray and curtain rod, adjustable				
4300	Drapery hardware, 30" to 48", tray & curtain rod, adjustable	EA	55.02	15.01
4320	Drapery hardware, 48" to 86", tray & curtain rod, adjustable	EA	61.26	15.17
4340	Drapery hardware, 86" to 150", tray & curtain rod, adjustable	EA	72.55	15.08
4360	Drapery hardware, 100" to 180", tray & curtain rod, adjustable	EA	88.14	17.57
12628 Modular Furniture/Furnishing				
12628 Modular furniture & Furnishings				
12628 1000 Modular Furniture and Furnishings				
1000	Modular Furniture Based On GSA Schedule	LS	1.08	
1001	Reception/Administrative Work- Station W/ Sys. Furniture Comp.	SF	84.77	
1002	Managerial Work Station With Systems Furniture Components	SF	95.27	
12670 Rugs And Mats				
12675 Floor Mats				
12675 1000 Recessed Floor Mats, In-Laid Black Rubber				
1001	3/8" thick Solid Floor Mats	SF	12.32	
1002	1/2" thick Solid Floor Mats	SF	15.77	
1003	3/8" Thick Perforated Floor Mats	SF	13.18	
1004	1/2" Thick Perforated Floor Mats	SF	16.63	
12675 2000 Link Mats, Aluminum Including Nosings				
2001	3/8" Link Mats	SF	9.47	
2002	Black Rubber Link Mats With Galv Tie Rods	SF	10.60	
2003	3/8" Thick Galvanized Steel Link Mats	SF	4.94	
2004	Vinyl Link Mats, Color	SF	11.62	
2005	Rubber Nosings	LF	3.09	
12675 3000 Recessed Frames				
3001	Aluminum Recessed Frame	LF	5.94	
3002	Bronze Recessed Frame	LF	9.71	
12675 4000 Skate Lock Tile				
4001	24"x24"x1/2" Rubber Tile Black	SF	6.99	
4002	24"x24"x1/2" Rubber Tile Color	SF	10.70	
4003	12"x24" Border Black	LF	12.93	
4004	12"x24" Border Color	LF	13.41	
4005	12"x12" Outside Corner, Black	SF	6.35	
4006	12"x12" Outside Corner, Color	SF	7.91	
12675 5000 Duckboard				
5001	Aluminum Slats, Duckboard	SF	13.54	
5002	Hardwood Strips on Rubber Base, Duckboard	SF	10.31	
5003	Assembled With Brass Rods And Vinyl Spears, Duckboard	SF	11.66	
5004	Tire Fabric, 3/4" Thick, Duckboard	SF	6.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5005	Vinyl 36" Wide, Hollow Top and Bottom Duckboard	SF	4.23	
5006	Vinyl 36" Wide, Solid Top and Bottom Duckboard	SF	6.65	

12700 Systems Furniture

12710 Panel Hung Systems

12710 6500 Furniture, Office Systems

6501	Acoustic panel, 43" high, 24" wide, NRC .85	EA	193.84	
6502	Acoustic panel, 43" high, 30" wide, NRC .85	EA	216.45	
6503	Acoustic panel, 43" high, 36" wide, NRC .85	EA	239.07	
6504	Acoustic panel, 43" high, 48" wide, NRC .85	EA	286.45	
6505	Acoustic panel, 64" high, 30" wide, NRC .85	EA	257.38	
6506	Acoustic panel, 64" high, 36" wide, NRC .85	EA	275.68	
6507	Acoustic panel, 64" high, 42" wide, NRC .85	EA	319.84	
6508	Acoustic panel, 64" high, 42" wide, NRC .85	EA	339.22	
6509	Acoustic panel, 64" high, 60" wide, NRC .85	EA	371.53	
6510	bookshelf, 36" W, 13-3/4"D, 8" H	EA	89.92	
6511	Systems office components, bookshelf, 42"W, 13-3/4"D, 16"H	EA	94.23	
6512	System office components, bookshelf, 48" W, 13-3/4" D, 8" H	EA	96.92	
6513	cantilever bracket, 20" deep, 2 4" deep	EA	30.15	
6514	Systems office components, countertop bracket, per pair	EA	12.60	
6515	Systems office components, flat bracket, 20" deep, 24" wide	EA	15.56	
6516	Systems office components, worksurface kit, per pair	EA	12.60	
6517	Systems office components, connector kit, ell, 43"H, 90" D	EA	54.38	
6518	Systems office components, connector kit, ell, 64"H, 90" D	EA	31.77	
6519	Systems office components, connector kit, straight, 43" H	EA	22.08	
6520	Systems office components, connector kit, straight, 64" H	EA	22.08	
6521	support column for peninsula, 2 9-1/2" H	EA	78.07	
6522	Systems office components, countertop, 15"D, 36" W	EA	102.30	
6523	Systems office components, countertop, 15"D, 48" W	EA	114.15	
6524	Systems office components, duplex receptacle circuit 1	EA	11.15	
6525	Systems office components, duplex receptacle circuit 2	EA	11.15	
6526	Systems office components, electric power harness, 36" wide	EA	72.69	
6527	Systems office components, electric power harness, 42" wide	EA	152.92	
6528	Systems office components, electric power harness, 60" wide	EA	76.46	
6529	Systems office components, panel end cover, 43" high	EA	22.08	
6530	Systems office components, panel end cover, 64" high	EA	22.08	
6531	finish end cover, 2-way, variable height	EA	33.38	
6532	Systems office components, overhead cabinet with door, 42" wide	EA	209.99	
6533	Systems office components, overhead cabinet with door, 60" wide	EA	318.76	
6534	Systems office components, pedestal spacer, 22" deep, 15" wide	EA	36.08	
6535	Systems office components, pedestal spacer, 28" deep, 15" wide	EA	43.61	
6536	pedestal box, box, file, 22" deep, 26" high	EA	254.15	
6537	pedestal box, box, file, 28" deep, 26" high	EA	264.91	
6538	pedestal file, file, 22" deep, 26" high	EA	236.92	
6539	pedestal lateral file, 2 drawer, 30" wide	EA	333.84	
6540	Systems office components, base in-feed power cable	EA	80.77	
6541	Systems office components, task light, 30" - 36" wide	EA	98.54	
6542	Systems office components, task light, 42" - 48" wide	EA	106.61	
6543	Systems office components, task light, 60" wide	EA	115.23	
6544	worksurface, radius edge, 24" deep, 36" wide	EA	106.07	
6545	worksurface, radius edge, 24" deep, 42" wide	EA	130.30	
6546	worksurface, radius edge, 24" deep, 48" wide	EA	138.92	
6547	worksurface, radius edge, 24" deep, 60" wide	EA	174.46	
6548	worksurface, radius edge, 24" deep, 72" wide	EA	197.07	
6549	worksurface, radius edge, 30" deep, 42" wide	EA	166.92	
6550	worksurface, radius edge, 30" deep, 60" wide	EA	194.92	
6551	worksurface, radius edge, 30" deep, 72" wide	EA	221.84	
6552	worksurface, radius edge, corner, 24"D, 36"W	EA	255.22	
6553	worksurface, radius edge, corner, 24"D, 42"W	EA	289.68	
6554	Systems office components, worksurface, peninsula, 36"W, 66" L	EA	333.84	

12720 Free Standing Systems

12720 5000 Furniture, Office Systems

5001	Office furniture, freestanding systems, desk table, 24"D x 48"W	EA	276.76	
5002	Office furniture, freestanding systems, desk table, 30"D x 48"W	EA	355.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5003	Office furniture, freestanding systems, desk table, 30"D x 60"W	EA	382.30	
5004	Office furniture, freestanding systems, desk table, 30"D x 72"W	EA	414.60	
5005	freestanding systems, file, mobile, 2-drawer, 22"D	EA	371.53	
5006	freestanding systems, file, suspend, 2-drawer, 22"D	EA	303.68	
5007	freestanding systems, file, undercounter, 2-draw, 22"D	EA	344.60	
5008	freestanding systems, file, undercounter, 2box, 1file, 22"D	EA	366.14	
5009	freestanding systems, keyboard platform w/articulating arm	EA	217.53	
5010	Office furn, freestanding systems, end support leg	EA	145.38	
5011	Office furn, freestanding systems, modesty panel, 48" W	EA	61.38	
5012	Office furn, freestanding systems, modesty panel, return	EA	66.77	
5013	Office furn, freestanding systems, pencil/utility drawer	EA	110.92	
5014	Office furn, freestanding systems, privacy screen, 48"Wx17-20"	EA	178.76	
5015	Office furn, freestanding systems, privacy screen, 72"Wx17-20"	EA	244.45	
5016	Office furn, freestanding systems, printer stand, 30"D x 36" W	EA	376.91	
5017	Office furn, freestanding systems, printer stand, universal	EA	527.68	
5018	Office furn, freestanding systems, paper basket	EA	44.69	
5019	Office furn, freestanding systems, storage unit w/doors, 60"W	EA	603.06	
5020	Office furn, freestanding systems, storage unit w/doors, 72"W	EA	705.36	
5021	Office furn, freestanding systems, peninsula table, 30" x 72"	EA	398.45	
5022	Office furn, freestanding systems, return table, 24" x 48"	EA	289.68	
5023	freestanding systems, round conference return, 42" dia	EA	333.84	
5024	Office furn, freestanding systems, work surface, 24"D x 48" W	EA	205.69	
5025	Office furn, freestanding systems, work surface, 30"D x 30" W	EA	194.92	
5026	Office furn, freestanding systems, work surface, 30"D x 60" W	EA	267.07	
5027	Office furn, freestanding systems, work surface, 30"D x 72" W	EA	278.91	
5028	Office furn, freestanding systems, corner bridge, 30" x 42"	EA	306.91	
5029	freestanding systems, work surface, peninsula, 30" x 60"	EA	425.37	
5030	Office furn, freestanding systems, work surface, connector plat	EA	11.15	

12740 Desk System Furniture

12740 8000 Systems Furniture

8001	Systems furniture, secretarial work station, minimum	EA	2,557.61	
8002	Systems furniture, secretarial work station, maximum	EA	8,722.81	
8003	Systems furniture, management work station, minimum	EA	2,907.60	
8004	Systems furniture, management work station, maximum	EA	9,395.87	
8005	Systems furniture, executive work station, minimum	EA	6,461.34	
8006	Systems furniture, executive work station, maximum	EA	16,584.11	

12800 Auditorium Seating

12810 Auditorium Seating

12810 1000 Auditorium Seating

1002	Mlded Plywood Seating	EA	73.78	
1003	Semi-Upholstered Seating	EA	105.17	
1004	Upholstered Seating	EA	125.69	
1005	Mlded Fiberglass Seating	EA	65.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
13001 Special Construction				
13030 Special Purpose Rooms				
13035 Special Purpose Rooms				
13035 7000 Refrigeration				
7001	REFRIGERATION Curbs, 12" high, 4 " thick, concrete finishes, 2 coat portland cemen t plaster, 1/2" thick	LF	4.40	
7002	Refrigeration, finishes, for gal vanized reinforcing mesh, add	SF	1.76	
7003	Refrigeration, finishes, 3/16" t hick latex cement finishes, for glass cloth reinf orced ceilings, add	SF	0.68	
7004	Refrigeration, finishes, fiberagl ass panels, 1/8" thick	SF	2.01	
7005	Refrigeration, finishes, polystyrene, plastic finish clg, 1" thick	SF	2.24	
7006	Refrigeration, finishes, polystyrene, plastic finish clg, 2" thick	SF	1.99	
7007	Refrigeration, finishes, polystyrene, plastic finish clg, 4" thick	SF	2.24	
7008	Refrigeration, finishes, floors, concrete, 4" thick	SF	2.52	
7009	Refrigeration, finishes, floors, concrete, 6" thick	SF	1.24	
7010	Refrigeration, insulation, 1" to 6" thick, cork	SF	1.74	
7011	Refrigeration, insulation, 1" to 6" thick, urethane	BF	0.86	
7012	Refrigeration, insulation, 1" to 6" thick, polystyrene, regular	BF	0.85	
7013	insulation, 1" to 6" thick, pol ystyrene, bead board	BF	0.58	
7014	Refrigeration, insulation, insta llation of above, add per layer	BF	0.44	
7015	Refrigeration, insulation, wall and ceiling juncture	SF	0.37	
7016	Refrigeration, partitions, galv sandwich panels, 4" thick, stock	LF	1.60	
7017	Refrigeration, partitions, alumi num or fiberglass	SF	6.12	
7018	prefab walk-in, 7' -6"h, alum Wdr&flr, no ptn, refr, 6'x6' od	SF	6.71	
7019	prefab, 7' -6"h, alum Wdr&flr, no p tn, refr, 10'x10' od nom	SF	105.67	
7020	prefab, 7' -6"h, alum Wdr&flr, no p tn, refr, 12'x14' od nom	SF	84.81	
7021	prefab, 7' -6"h, alum Wdr&flr, no p tn, refr, 12'x20' od nom	SF	75.99	
7022	rule of thumb for compl units, W o drs&refrig, cooler	SF	66.30	
7023	rule of thumb for compl units, dr &refr not incl, freezer	SF	95.23	
7024	Refrigeration, shelving, plated or galvanized, steel wire type	SF	112.61	
7025	Refrigeration, shelving, plated or galvanized, slat shelf type	SF	8.47	
7026	Refrigeration, vapor barrier, on wood walls	SF	10.41	
7027	Refrigeration, vapor barrier, on masonry walls	SF	0.16	
7028	Refrigeration, vapor barrier, on masonry walls	SF	0.36	
7029				
13081 1000 Acoustical				
1001	encl, 4" thk wl and clg pnls, 8 # per S.F., up to 12' span	SF	28.31	
1002	encl, 4" thk wl & clg pnls, btr qual pnls, 10.5# per S.F.	SF	31.71	
1003	Acoustical, reverb-chamber, 4" t hick, parallel walls	SF	33.97	
1004	reverb-chamber, skewed wall, pa rallel roof, 4" thick pnls	SF	34.12	
1005	reverb-chamber,skewed wl,skewed rf,4" layers,4" air SP	SF	40.31	
1006	sound-absorbing pnls, pntd mtl, 2'-6"x8', under 1,000 SF	SF	10.22	
1007	sound-absorbing pnls, pntd mtl, 2'-6"x8', over 1000 S.F.	SF	9.79	
1008	Acoustical, sound-absorbing pane ls, fabric faced	SF	8.23	
1009	Acoustical, flexible transparent curtain, clear	SF	6.55	
1010	Acoustical, flexible transparent curtain, clear, 50% foam	SF	8.97	
1011	Acoustical, flexible transparent curtain, clear, 75% foam	SF	8.97	
1012	Acoustical, flexible transparent curtain, clear, 100% foam	SF	8.97	
1013	aud mask sys, Wspkrs, amplificati on&sig gen, clg mtd, 5,000sf	SF	1.06	
1014	aud mask sys, Wspkrs, amplificati on&sig gen, clg mtd, 10,000sf	SF	0.87	
1015	aud mask sys, Wspkrs, amplificat& sig gen, plenum mtd, 5,000sf	SF	0.89	
1016	aud mask sys, Wspkrs, amplificat& sig gen, plenum mtd, 10,000sf	SF	0.60	
13090 Radiation Protection				
13090 2000 X-Ray Viewing Panels, Clear Lead Plastic				
2001	7mm Thk, .3mm LE, 2.3#/SF	SF	87.01	
2002	12mm Thk, .5mm LE, 3.9#/SF	SF	118.07	
2003	18mm Thk, .8mm LE, 5.9#/SF	SF	132.66	
2004	22mm Thk, 1mm LE, 7.2#/SF	SF	137.77	
2005	35mm Thk, 1.5mm LE, 11.5#/SF	SF	160.20	
2006	46mm Thk, 2mm LE, 15#/SF	SF	211.24	
13090 3000 X-Ray Barriers, Mbdular, Panels Munted Within F				
13090 3100 1-Section Barrier, 36"W&84"H				
3101	0.5mm LE Panels	EA	2,058.54	
3102	0.8mm LE Panels	EA	2,184.84	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3103	1.0mm LE Panels	EA	2,253.02	
3104	1.5mm LE Panels	EA	2,404.58	
13090 3200	2-Section Barrier, 72"Wx84"H			
3201	0.5mm LE Panels	EA	4,410.14	
3202	0.8mm LE Panels	EA	4,586.96	
3203	1.0mm LE Panels	EA	4,730.94	
3204	1.5mm LE Panels	EA	5,102.21	
13090 3300	3-Section Barrier, 108"Wx84"H			
3301	0.5mm LE Panels	EA	6,693.56	
3302	0.8mm LE Panels	EA	7,021.93	
3303	1.0mm LE Panels	EA	7,183.55	
3304	1.5mm LE Panels	EA	7,706.37	
13090 4000	X-Ray Barriers, Mobile, Mounted Within Framework			
13090 4100	30"Wx75"H, Incl. Framework			
4101	24"H Upper W0.5mm LE, 48"H Lower W0.8mm LE	EA	1,406.01	
13090 4200	48"Wx75"H, Incl. Framework			
4201	36"H Upper W0.5mm LE, 36"H Lower W0.8mm LE	EA	2,492.17	
4202	36"H Upper W1.0mm LE, 36"H Lower W0.8mm LE	EA	2,997.37	
13090 4300	72"Wx75"H, Incl. Framework			
4301	36"H Upper W0.5mm LE, 36"H Lower W0.8mm LE	EA	2,946.85	
4302	36"H Upper W1.0mm LE, 36"H Lower W0.8mm LE	EA	3,729.89	
13091 0010	Shielding lead			
13091 0499	Lead shielding			
0500	Shielding lead, 1/4" thick	SF	15.25	
0550	Shielding lead, 1/2" thick	SF	27.71	
13091 0800	Lead glass			
0801	Shielding lead, lead glass, 1/4" thick	SF	407.33	
13093 0010	Shielding, radio frequency			
13093 0199	RF modular shielding panels			
13093 0199	Walls & ceilings			
0200	Shielding, RF, walls & ceilings, modular panels	SF	18.45	3.65
13093 0209	Floor liner			
0210	Shielding, floor liner, steel sheet, 14 ga	SF	3.39	1.25
0215	Shielding, floor liner, steel sheet, 11 ga	SF	8.66	0.41
13093 0219	Wall liner			
0220	Shielding, wall liner, steel sheet, 14 ga	SF	6.60	2.78
0225	Shielding, wall liner, steel sheet, 11 ga	SF	8.66	4.07
0230	Shielding, wall liner, steel plate, 1/4"	SF	14.22	7.01
13093 0234	Ceiling liner			
0235	Shielding, ceiling liner, steel sheet, 14 ga	SF	6.60	2.78
0250	Shielding, RF, modular panels, ceiling hangers	EA	43.66	16.47
0275	Shielding, RF, modular panels, wall supports	EA	43.66	16.47
13093 0299	Shielding transition			
0300	Shielding, RF, 11 ga preformed angles, transition	LF	22.27	0.62
0350	Shielding, RF, w/steel bar, transition, 11 ga galv	LF	3.26	1.04
0400	Shielding, RF, single door, transition, tubing sub frame	EA	777.42	384.61
0450	Shielding, RF, double door, transition, tubing sub frame	EA	1,260.40	668.35
13093 0499	Radiation protection			
0500	Shielding, RF, single door, radiation protection	EA	5,692.73	
0550	Shielding, RF, double door, radiation protection	EA	10,315.95	
13093 0599	Wave guide vents			
0600	Shielding, RF, wave guide vents, 2" dia	EA	38.84	
0610	Shielding, RF, wave guide vents, 12" dia	EA	245.87	
0620	Shielding, RF, wave guide vents, 12" x 6"	EA	294.33	
0630	Shielding, RF, wave guide vents, 12" x 12"	SF	369.71	
0640	Shielding, RF, wave guide vents, 15" x 15"	EA	410.09	
0650	Shielding, RF, wave guide vents, 30" x 14"	EA	746.12	
0660	Shielding, RF, wave guide vents, 48" x 15"	EA	1,017.17	
0670	Shielding, RF, wave guide vents, 60" x 14"	EA	1,243.32	
13093 0699	RF filter			
0700	Shielding, RF, filter, 2 x 30 amp, 100 dB	EA	618.96	53.94

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0710	Shielding, RF, filter, 3 x 60 amp, 100 dB	EA	1,814.31	114.65
0720	Shielding, RF, filter, 6 x 10 amp, 100 dB	EA	1,673.24	81.39
0730	Shielding, RF, filter, 4 x 200 amp, 100 dB	EA	4,260.46	39.66
0740	Shielding, RF, filter, 4 x 100 amp, 100 dB	EA	2,875.05	31.22
0750	Shielding, RF, filter, 3 x 100 amp, 100 dB	EA	2,197.68	25.50
0760	Shielding, RF, filter, 2 x 100 amp, 100 dB	EA	1,520.32	22.42
13093 0799	Prefabricated shielded module			
0800	Shielding, RF, 24' x 12' x 8' high, prefabricated module	EA	26,623.96	6,261.03
13093 0899	Signal entry box			
0900	Shielding, RF, signal entry box, 18" x 14"	EA	519.92	50.78
13093 0949	Pull box			
0950	Shielding, RF, pull box	EA	464.85	19.41
13093 0999	Hi-hat for lighting			
1000	Shielding, RF, hi-hat for lighting	EA	611.99	50.78
13093 1049	Set-up panel			
1050	Shielding, RF, set-up panel	EA	544.15	50.78
13094	Intergrated Ceiling			
13094 R.F. Shielded Room, Prefabricated				
13094 1000 R.F. Shielded Room Prefabricated Includes: Ceil				
1001	RF Sheilded Room Complete.	CF	12.03	
13094 2000 Tempest Rated R.F. Doors				
2001	3' -0"x7' -0" Sgl R.F. Door	EA	861.71	
2002	6' -0"x7' -0" Dbl R.F. Door	EA	1,741.54	
13094 3000 Testing/Certification				
3001	Testing/Certification	DAY	2,038.63	
13094 4000 R.F. Shielding Wall Coverings, Fabric, Conductiv				
4001	40dB Shielding Wall Covering	SF	4.40	
4002	60dB Shielding Wall Covering	SF	6.11	
4003	80dB Shielding Wall Covering	SF	7.83	
13095 Intergrated Ceiling				
13095 1000 5'x5' Intergrated Ceiling Lighting, Ventilation				
13095 1100 Luminaire, including Connections				
1101	5'x5' Luminaires, 50% Lighted	SF	6.94	
1102	5'x5' Luminaires,100% Lighted	SF	11.64	
1103	Supply Diffuser	EA	69.13	
1104	5'x5' Grid System & Ceiling Tile Only, Mineral Fiber Panels,50%Lt	SF	3.17	
1105	5'x5' Grid System & Ceiling Tile Only, Glass Fiber Panels,50% Lt	SF	3.33	
1106	5'x5' Mdules, 50% Lighted, Vault ed Coffe	SF	3.98	
13100 Pre-Eng Structure (Metal Buildings)				
13108 Pre-Engineered Buildings, no foundation or slab				
NOTE: Base Buildings Have A Live Load Of 30 Psf And A Wind Load Of 20 Psf and a roof slope of 1 in 12.				
13112 0010 Pre-engineered steel bldg				
NOTE: Live load 30 psf on roof and 20 psf for wind.				
13112 0055 Rigid clear span frame with openings				
NOTE: (Excludes Foundation, Elect Plumbing, Hvac, Interior Finish And Furnishings)				
0060	PESB, 26 ga clrd rfg & sdg, 50' x 70' w/opngs, rigid clear span	EA	23,935.00	3,830.46
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		718.05	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		2,448.14	
0070	PESB,26ga clrd rfg & sdg, 50'x80',16' eave w/2-3' dr & 1-10,	EA	27,308.58	4,327.89
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		819.26	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		2,797.83	
13112 0100 Rigid clear span frame, Colored roofing & siding				
0212	PESB, 26ga 30' to 40' Wide Clear Span, 10' Eave Height	SF	6.28	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.67	
0214	PESB, 26ga 50' to 100' Wide Clear Span, 10' Eave Height	SF	5.96	0.80
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.18	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.62	
0312	PESB, 26ga 30' to 40' Wide Clear Span, 14' Eave Height	SF	6.34	0.91

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.68	
0314	PESB, 26ga 50' to 100' Wide Clear Span, 14' Eave Height	SF	5.97	0.80
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.18	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.62	
0412	PESB, 26ga 30' to 40' Wide Clear Span, 16' Eave Height	SF	7.22	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.22	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.73	
0414	PESB, 26ga 50' to 100' Wide Clear Span, 16' Eave Height	SF	6.80	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.67	
0512	PESB, 26ga 30' to 40' Wide Clear Span, 20' Eave Height	SF	8.59	1.60
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.26	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.80	
0514	PESB, 26ga 50' to 100' Wide Clear Span, 20' Eave Height	SF	7.99	1.60
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.24	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.71	
0612	PESB, 26ga 30' to 40' Wide Clear Span, 24' Eave Height	SF	9.72	1.60
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.29	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.97	
0614	PESB, 26ga 50' to 100' Wide Clear Span, 24' Eave Height	SF	8.64	1.60
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.26	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.81	
13112 1000 Clear span tapered beam frame				
NOTE: Colored Roofing and Siding				
1012	PESB, 26ga 30' Wide Clear Span, Tapered Beam 10' Eave Height	SF	6.70	0.80
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.73	
1014	PESB, 26ga 40' Wide Clear Span, Tapered Beam 10' Eave Height	SF	6.31	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.68	
1016	PESB, 26ga 50 to 80' Wide, Clear Span, Tapered Beam 10' Eave Ht	SF	6.34	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.68	
1112	PESB, 26ga 30' Wide Clear Span, Tapered Beam 14' Eave Height	SF	7.30	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.22	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.82	
1114	PESB, 26ga 40' Wide Clear Span, Tapered Beam 14' Eave Height	SF	6.71	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.74	
1116	PESB, 26ga 50 to 80' Wide, Clear Span, Tapered Beam 14' Eave Ht	SF	6.43	0.91
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.69	
1212	PESB, 26ga 30' Wide Clear Span, Tapered Beam 16' Eave Height	SF	8.31	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.25	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.90	
1214	PESB, 26ga 40' Wide Clear Span, Tapered Beam 16' Eave Height	SF	7.48	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.22	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.77	
1216	PESB, 26ga 50 to 80' Wide, Clear Span, Tapered Beam 16' Eave Ht	SF	7.14	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.21	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.72	
1312	PESB, 26ga 30' Wide Clear Span, Tapered Beam 20' Eave Height	SF	9.99	1.18
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.30	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		1.01	
1314	PESB, 26ga 40' Wide Clear Span, Tapered Beam 20' Eave Height	SF	8.97	1.18
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.27	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.86	
1316	PESB, 26ga 50 to 80' Wide, Clear Span, Tapered Beam 20' Eave Ht	SF	8.97	1.18
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.27	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.86	
13112 2500 Single post frame, Colored roofing and siding				
3012	PESB, 80' Wide, 14' Eave Height, Single Post Frame, 26Ga	SF	5.61	1.01
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.17	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.57	
3014	PESB, 100' Wide, 14' Eave Height, Single Post Frame, 26Ga	SF	5.34	1.01
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.16	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.53	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3016	PESB, 120' Wide, 14' Eave Height, Single Post Frame, 26Ga	SF	5.41	1.01
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.16	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.54	
3112	PESB, 80' Wide, 16' Eave Height, Single Post Frame, 26Ga	SF	6.39	1.28
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.61	
3114	PESB, 100' Wide, 16' Eave Height, Single Post Frame, 26Ga	SF	6.26	1.28
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.19	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.59	
3116	PESB, 120' Wide, 16' Eave Height, Single Post Frame, 26Ga	SF	6.07	1.28
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.18	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.56	
3212	PESB, 80' Wide, 20' Eave Height, Single Post Frame, 26Ga	SF	7.62	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.65	
3214	PESB, 100' Wide, 20' Eave Height, Single Post Frame, 26Ga	SF	7.60	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.65	
3216	PESB, 120' Wide, 20' Eave Height, Single Post Frame, 26Ga	SF	7.24	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.22	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.60	
3312	PESB, 80' Wide, 24' Eave Height, Single Post Frame, 26Ga	SF	8.03	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.24	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.72	
3314	PESB, 100' Wide, 24' Eave Height, Single Post Frame, 26Ga	SF	7.83	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.69	
3316	PESB, 120' Wide, 24' Eave Height, Single Post Frame, 26Ga	SF	7.69	1.82
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.66	
13112 3800 Double post frame, Colored roofing and siding				
3912	PESB, 150' Wide, 14' Eave Height, Double Post Frame, 26Ga	SF	5.17	1.12
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.16	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.50	
4012	PESB, 150' Wide, 16' Eave Height, Double Post Frame, 26Ga	SF	5.66	1.44
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.17	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.50	
4112	PESB, 150' Wide, 20' Eave Height, Double Post Frame, 26Ga	SF	6.77	1.98
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.53	
4212	PESB, 150' Wide, 24' Eave Height, Double Post Frame, 26Ga	SF	7.70	1.98
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.67	
13112 4300 Triple post frame, Colored roofing and siding				
4412	PESB, 160' Wide, 14' Eave Height, Triple Post Frame, 26Ga	SF	4.90	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.15	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.46	
4414	PESB, 200' Wide, 14' Eave Height, Triple Post Frame, 26Ga	SF	4.93	1.17
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.15	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.47	
4512	PESB, 160' Wide, 16' Eave Height, Triple Post Frame, 26Ga	SF	5.55	1.55
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.17	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.48	
4514	PESB, 200' Wide, 16' Eave Height, Triple Post Frame, 26Ga	SF	5.61	1.55
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.17	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.49	
4612	PESB, 160' Wide, 20' Eave Height, Triple Post Frame, 26Ga	SF	6.77	2.14
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.53	
4614	PESB, 200' Wide, 20' Eave Height, Triple Post Frame, 26Ga	SF	6.77	2.14
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.20	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.53	
4712	PESB, 160' Wide, 24' Eave Height, Triple Post Frame, 26Ga	SF	7.52	2.14
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.23	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.64	
4714	PESB, 200' Wide, 24' Eave Height, Triple Post Frame, 26Ga	SF	7.09	2.14
8700	PESB, for increase in roof slope from 1 in 12 to 4 in 12, add		0.21	
8785	PESB, for aluminized steel 24 ga standing seam roof, add		0.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
13112 5700 Pre Engineered Metal Building Accessories				
5710	PESB, Eave Overhang, 26Ga, 2' Wide With Soffit	LF	17.72	
5715	PESB, Eave Overhang, 26Ga, 4' Wide With Soffit	LF	27.70	
5720	PESB, Eave Overhang, 26Ga, 6' Wide With Soffit	LF	39.96	
5725	PESB, End Wall Roof Overhang, 4' Wide With Soffit	LF	17.60	
5730	PESB, Entrance Canopy Including Frame, 4' x 4'	EA	280.22	
5735	PESB, Entrance Canopy Including Frame, 4' x 8'	EA	435.53	
5740	PESB, Framing Only for 2' x 2' Window (2020)	OPN	205.37	
5745	PESB, Framing Only for 4' x 3' Window (4030)	OPN	228.37	
5750	PESB, access, HM dr fr & hdw, sgl leaf 3' x 7' econ	OPN	405.65	
5950	PESB, access, HM dr fr & hdw, dbl leaf 6' x 7'	OPN	790.57	
5960	PESB, Framing Only for 3' x 7' openings	OPN	215.07	
5970	PESB, Framing Only for 10' x 10' openings	OPN	343.01	
5980	PESB, Gutter, Eave Type, 26Ga Painted	LF	4.21	
5990	PESB, Gutter, Eave Type, 26Ga Galvanized	LF	4.05	
13112 6750 Insulation				
6800	PESB, insulation, 1.5" thk, rated 0.6# density, vinyl faced,	SF	0.38	0.10
6825	PESB, insulation, 2" thk, rated 0.6# density, vinyl faced, R6	SF	0.79	0.10
6850	PESB, insulation, 3" thk, rated 0.6# density, vinyl faced, R10	SF	0.52	0.10
6900	PESB, insulation, 4" thk, rated 0.6# density, vinyl faced, R11	SF	0.57	0.13
6920	PESB, insulation, 6" thk, rated 0.6# density, vinyl faced, R19	SF	0.70	0.13
13112 6950 Pre Engineered Steel Building				
Note: By SF of Floor Area				
6955	Building Shell Only 26Ga Colored Roof & Siding, - Max	SF	9.37	
7610	PESB, louver, fixed, zinc aluminum finish, 4' x 3'	OPN	242.03	
7650	PESB, sash, single slide, glazed, w/ screens, 2020 (2' x	OPN	140.19	
7750	PESB, sash, single slide, glazed, w/ screens, 4030 (4' x	OPN	296.14	
8200	PESB, skylite, fiberglass panels to 30 SF	EA	164.48	
8400	PESB, roof vent, 26 ga, painted, 12" dia	EA	190.42	
8450	PESB, roof vent, 26 ga, painted, 20" dia	EA	240.45	
8455	PESB, roof vent, 26 ga, 10' x 9" wide, continuous	EA	363.05	
8460	PESB, roof vent, 26 ga, 10' x 12" wide, continuous	EA	410.52	
13112 8600 Kiosks				
8601	Kiosks round, 5' diameter, 8' hi gh, 1/4" fiberglass wall	EA	5,922.90	
8602	rnd, 5' dia, 8' hi, 1/4" fbgl w l, 1" insulated dbl wl, fbgl	EA	6,730.56	
8603	Kiosks, rectangular, 5' x 9', 7' -6" high, 1/4" fiberglass wall	EA	8,615.12	
8604	rectangular, 5' x 9', 7' -6" hig h, 1" insulated dbl wall, fbgl	EA	10,230.46	
8710	Building Shell Only 26Ga Colored Roofing & Siding -Min	SF	4.55	
13112 8800 Shelters				
8801	SHELTERS Aluminum frame, acrylic glazing, 3' x 9' x 8' high	EA	2,809.00	
8802	Shelters, aluminum frame, acryli c glazing, 9' x 12' x 8' high	EA	4,675.05	
13150 Aquatic Facilities & Ice Rinks				
13151 Swimming Pools				
13153 0009 Swimming pool equipment				
13153 0009 Diving stand				
0010	Swimming pool eqpt, diving stand, sst, 3 meter	EA	6,660.73	361.92
0015	Diving Stand, 3 M Galv Steel Swimming Pool Equipment	EA	10,240.18	837.00
0300	Swimming pool eqpt, diving stand, sst, 1 meter	EA	4,064.32	142.47
0305	Diving Stand, 1 M Galv Steel Swimming Pool Equipment	EA	6,161.55	334.80
0400	Diving Stand, 1/2M Galv STL W SS Rails	EA	2,232.63	155.35
0600	Swimming pool eqp, diving board, aluminum, 16' long	EA	1,435.63	120.37
2011	Wheel Adjuster, Add		84.86	
0800	Swimming pool eqpt, diving board, aluminum, 14' long	EA	1,779.16	120.37
2011	Wheel Adjuster, Add		84.86	
0850	Swimming pool eqpt, diving board, fiberglass, 14' long	EA	1,419.12	125.80
2011	Wheel Adjuster, Add		84.86	
0860	8' (2.4m) Long, Fiberglass Diving Board	EA	603.06	102.79
2011	Wheel Adjuster, Add		85.04	
0870	10' Long, Fiberglass Diving Board	EA	775.23	109.82
2011	Wheel Adjuster, Add		85.83	
0880	12' Long, Fiberglass Diving Board	EA	943.27	117.18
2011	Wheel Adjuster, Add		86.61	
13153 1199 Ladders, heavy duty				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1200	Swimming pool eqpt, ladders, heavy dty, sst, 2 tread	EA	302.22	12.78
1250	Ladders, 2 Tread, Galvanized Stl Swimming Pool Equipment	EA	549.72	36.90
1500	Swimming pool eqpt, ladders, heavy dty, sst, 4 tread	EA	391.36	15.54
1550	Ladders, 4 Tread, Galvanized Stl Swimming Pool Equipment	EA	630.52	42.62
13153 1799 Lifeguard chair				
1800	Swimming pool eqpt, lifeguard chair, sst, fixed	EA	1,197.64	59.97
1850	Lifeguard Chair, Galvanized Swimming Pool Equipment	EA	1,311.40	95.79
13153 2099 Lights, underwater				
2100	Swimming pool eqpt, 12 V, 300 watt, w/transformer, lights,	EA	1,016.11	411.12
2200	Swimming pool eqpt, 110 V, 500 watt, std, lights, underwater	EA	856.73	343.75
13153 2899 Ground fault interrupter				
2900	Swimming pool eqpt, ground fault interrupter, 110 V/light	EA	232.20	105.57
13153 2999 Pool covers				
3000	Swimming pool eqpt, cover, reinforced vinyl, material only	SF	0.16	
3100	Swimming pool eqpt, cover, vinyl water tube, matl only	SF	0.22	
13153 3299 Slides				
3300	Swimming pool eqpt, straight, slide, fbgl, al hndrl & lad, 6'-0"	EA	1,285.85	
3420	Swimming pool eqpt, str, fbgl, al hndrl & lad, 12'-0", w/platform	EA	1,294.47	
13154 Pool Equipment				
13154 1000 Swimming Pool Heaters For 1 Deg F/Hr Rise				
Note: Pricing Does Not Include Wiring, External Piping, Base Or Pad. Commercial Pools				
13154 1100 Electric Heaters				
1101	12KW Htr(1Deg/Hr), f/4800Gal Pool	EA	3,648.68	43.12
1102	18KW Htr(1Deg/Hr), f/7200Gal Pool	EA	4,084.41	52.19
1103	24KW Htr(1Deg/Hr), f/9600Gal Pool	EA	4,526.65	60.73
1104	30KW Htr(1Deg/Hr), 12000 Gal Pool	EA	4,692.81	64.67
1105	36KW Htr(1Deg/Hr), 14400 Gal Pool	EA	4,903.85	81.21
1106	60KW Htr(1Deg/Hr), 24000 Gal Pool	EA	5,291.87	108.66
13154 1200 Gas Fired Heaters				
1201	Gas Fired Pool Htr, 120MBH Output	EA	2,653.38	109.99
1202	Gas Fired Pool Htr, 180MBH Output	EA	3,021.67	129.69
1203	Gas Fired Pool Htr, 240MBH Output	EA	3,428.40	146.76
1204	Gas Fired Pool Htr, 300MBH Output	EA	5,113.82	463.06
1205	Gas Fired Pool Htr, 360MBH Output	EA	8,496.50	1,254.16
1206	Gas Fired Pool Htr, 400MBH Output	EA	9,323.39	1,363.82
13154 2000 Surge Tank W100 Gpm Vertical Pump W 2 Hp Mtor And Electronic Float Switch				
Note: Prices Shown Are For 1 Ft 0 In To 5 Ft 0 In Sump Depth For Pump				
2001	1000Gal Surge Tk, w/2HP Mtor w/100GPM Vert Pump&Elec Float Sw	EA	6,843.73	218.14
2002	1500Gal Surge Tk, w/2HP Mtor w/100GPM Vert Pump&Elec Float Sw	EA	7,686.22	218.80
2003	2000Gal Surge Tk, w/2HP Mtor w/100GPM Vert Pump&Elec Float Sw	EA	9,176.32	275.84
2004	5000Gal Surge Tk, w/2HP Mtor w/100GPM Vert Pump&Elec Float Sw	EA	12,079.28	448.33
13155 Circulation And Filtration Equipment				
13155 1000 Filter System Diatomite Type				
1001	35000 Gal Filter Sys, Diatomite	EA	4,864.61	782.28
1002	45000 Gal Filter Sys, Diatomite	EA	4,959.02	867.60
13155 2000 Inline Water Filter				
Note: 3/8" NPT Threaded Inlet And Outlet, 125 Psi, Includes One Filter Cartridge				
2001	2 Gpm Water Filter, 100Deg Temp, 8"x5"Dia, Plastic Body	EA	121.97	23.17
2002	6 Gpm Water Filter, 250Deg Temp, 12"x5"Dia, Stainless Steel Body	EA	266.87	23.45
13156 Pool Drains, Inlet, And Outlets				
13156 1000 Pool Drains				
13156 1100 Cast Iron Pool Drain With Bottom Outlet, Large				
Note: Square Top And 24 In Loose Set Round Super-Flo Grate				
1101	CI Pool Drain, 4"-8"Bottom Outlet Lg Sq Top & 24" Super-Flo Grate	EA	840.63	
13156 1300 Cast Iron Pool Drain With Waterproof Flange,				
Note: Bottom Outlet 14 In Sq Top And Loose Set Square Flange				
1301	CI Pool Drain, 2"-4"Bottom Outlet w/Waterproof Flg & 14"Square To	EA	242.23	
13156 2000 Pool Supply Fittings				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
13156 2100 Cast Iron Fitting WPolished Bronze Head And W				
Note: Anchor Flange And Adjustable V-Ported Valve Insert And Threaded Inlet				
2101	CI Pool Fitting for 2" Pipe	EA	310.86	
2102	CI Pool Fitting for 3" Pipe	EA	310.86	
13157 Pool Cleaning Equipment				
13157 1000 Electric Powered Portable Vacuum Cleaner Pump W 75 Ft Of 3 Wire Electric Safety Cord				
1001	1HP Elect Port Vac Cleaner Pump With 75' of 3-Wire Safety Cord	EA	207.88	13.71
1002	1-1/2HP El Port Vac Cleaner Pump With 75' of 3-Wire Safety Cord	EA	451.16	13.16
13157 2000 Gasoline Driven Portable Vacuum Cleaner Pump				
2001	3 HP Gas Port Vac Cleaner Pump	EA	2,522.62	12.82
13158 Chemical Treatment Equipment				
13158 1000 Swimming Pool Chlorinators				
1001	Swim Pool Chlorinator, 50-100 PPD Direct Cyl Mtd Gas Chlorinator	EA	658.90	38.90
13200 Liquid and Gas Storage Tanks				
13203 8000 Tank Removal/Accessories				
13203 8100 Tank Transportation				
Note: Includes loading, hauling and off loading one time. Includes traffic permitting. Pilot vehicles and all the equipment required for oversized loads. Haul distance upto 25 miles.				
8101	Up To 10,000 Gal		891.88	
8102	10,001 To 30,000 Gal		1,300.66	
8103	30,001 To 50,000 Gal		1,858.09	
13203 8200 Purging Tanks And Rendering Them Unusable				
Note: Without remanufacturing. Purging can be with H2O, CO, CO2, or other inert gas. Includes disposal in landfill or other.				
8201	Up To 10,000 Gal		0.16	
8202	10,001 To 30,000 Gal		0.13	
8203	30,001 To 50,000 Gal		0.11	
13203 8300 Tank Cleaning				
Note: Includes fuel And waste oil tanks only. Assumes tanks have been pumped except for 1% of capacity. Degree of cleaning is swab cleaning. Suitable for disposal as scrap. Sludge and oily waste to be put in barrels furnished and disposed of by others. Excludes cutting of large tanks for hauling and or disposal.				
8301	100 Gal		573.98	
8302	500 Gal		650.44	
8303	1000 Gal		768.90	
8304	3000 Gal		887.36	
8305	5000 Gal		1,005.82	
8306	7500 Gal		1,242.73	
8307	10000 Gal		1,420.42	
8308	20000 Gal		4,141.72	
8309	25000 Gal		5,325.22	
8311	30000 Gal		7,099.94	
8312	40000 Gal		9,170.80	
8313	50000 Gal		10,000.00	
13203 8400 Liquid Level Meters				
Note: Includes indicating panel manometer level indicator and tank assembly unit. Price does not include copper tubing or supply air tubing.				
8401	Hand Pump Mdel/Up To 1000 Gal		1,040.28	
8402	Hand Pump Mdel/Up To 10,000 Gal		1,343.96	
8403	Compressed Air Mdel/Up To 1000 Gal		1,140.43	
8404	Compressed Air Mdel/Up To 10,000 Gal		1,427.96	
13203 8500 Tank Overfill Alarm				
Note: With audible and visual indication and tank assembly. Does not include wiring or conduit.				
8501	Tank Overfill Alarm		955.20	
13203 8600 Site Assessment, Closure, & Remediation Documentation				
Note: Includes collect and transport samples (18 AAC 78)				
8601	Site Assessor		82.50	
13203 8700 Tank Cleaning, Plastic Media Bead Blasting Method				
Note: Assumes tanks have been pumped except for 1% capacity. Degree of cleaning: Suitable for disposal as scrap, certificate of disposal to be provided. Sludge and oily waste to be put in barrels furnished and disposed of by others.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
13203 8710 Tanks Used For Diesel Family & M6-Gas				
Note: Including leaded gas.				
8711	100 To 500 Gallon Tank		570.75	
8712	501 To 1000 Gallon Tank		826.51	
8713	1001 To 1500 Gallon Tank		1,082.27	
8714	1501 To 2000 Gallon Tank		1,321.88	
8715	2001 To 3000 Gallon Tank		1,556.11	
8716	3001 To 5000 Gallon Tank		1,801.10	
8717	5001 To 10000 Gallon Tank		2,046.09	
13203 8720 Tanks Used For Mixed Fuels And Slop Tank				
8721	100 To 500 Gallon Tank		913.20	
8722	501 To 1000 Gallon Tank		1,322.42	
8723	1001 To 1500 Gallon Tank		1,731.64	
8724	1501 To 2000 Gallon Tank		2,115.01	
8725	2001 To 3000 Gallon Tank		2,489.77	
8726	3001 To 5000 Gallon Tank		2,881.76	
8727	5001 To 10000 Gallon Tank		3,273.75	
13204 Ground Storage Tanks				
13205 0010 Tanks				
NOTE: Roof Does Not Include Foundation/Pads. Price Includes Material, Fabrication, And Field Erection.				
13205 0899 Steel, ground level				
0900	Tanks, no pipe/pumps, 100000 gal, steel, gnd lvl, no fdn	EA	87,272.72	
1000	Tanks, no pipe/pumps, 250000 gal, steel, gnd lvl, no fdn	EA	126,000.00	
1200	Tanks, no pipe/pumps, 500000 gal, steel, gnd lvl, no fdn	EA	159,000.00	
1250	Tanks, no pipe/pumps, 750000 gal, steel, gnd lvl, no fdn	EA	180,000.00	
1300	Tanks, no pipe/pumps, 1000000 gal, steel, gnd lvl, no fdn	EA	203,000.00	
1500	Tanks, no pipe/pumps, 2000000 gal, steel, gnd lvl, no fdn	EA	291,000.00	
1600	Tanks, no pipe/pumps, 4000000 gal, steel, gnd lvl, no fdn	EA	435,000.00	
1800	Tanks, no pipe/pumps, 6000000 gal, steel, gnd lvl, no fdn	EA	570,000.00	
1850	Tanks, no pipe/pumps, 8000000 gal, steel, gnd lvl, no fdn	EA	781,000.00	
13205 2100 Steel, standpipes				
Note: No Foundations. Price Includes Material, Fabrication, And Field Erection.				
2200	Tanks, steel standpipes, 500000 gal, 100' to overflow, no fdn	EA	167,000.00	
2400	Tanks, steel standpipes, 750000 gal, 100' to overflow, no fdn	EA	189,000.00	
2500	Tanks, steel standpipes, 1000000 gal, 100' to overflow, no fdn	EA	213,000.00	
2700	Tanks, steel standpipes, 1500000 gal, 100' to overflow, no fdn	EA	265,000.00	
2800	Tanks, steel standpipes, 2000000 gal, 100' to overflow, no fdn	EA	305,000.00	
13205 3000 Steel, storage above ground				
3040	Tanks, stl, 275 gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	367.96	65.36
3060	Tanks, stl, 550 gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	1,454.06	122.02
3080	Tanks, stl, 1000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	2,075.03	285.27
3100	Tanks, stl, 1500gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	2,283.89	144.24
3120	Tanks, stl, 2000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	2,292.02	148.97
3130	Tanks, stl, 3000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	3,626.36	166.94
3140	Tanks, stl, 5000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	4,891.94	214.06
3145	Tanks, stl, 8000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	7,410.51	299.18
3150	Tanks, stl, 10000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	8,020.94	342.43
3155	Tanks, stl, 12000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	9,566.28	364.28
3160	Tanks, stl, 15000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	11,097.35	402.80
3170	Tanks, stl, 20000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	13,026.05	472.13
3190	Tanks, stl, 30000gal cap, stor, abv gnd, w/sprt, ctg, ftg, no	EA	19,380.58	622.57
13205 4000 Fixed roof oil storage tanks w/ tdn 3' D x 1' W				
NOTE: Cost Provides Erection Of Tank Foundation Cost Is Not Included Cost Includes 1/4 In Bottom, 3/1 Roof, Shell And Roof Manways, Ladder, Level Indicator, Nozzels And Gage Hatch. Cost Does Not Include Sand Blasting Or Painting. Capacities Are Nominal Bbls Price Includes Material, Fabrication And Field Erection. Field Erection Derived As Percent Of Total Cost				
4050	Tank, stl, 15' x16' cone, 500bbl, incl fdn, fab&erect, fixed roof oil	EA	98,000.00	
4100	Tank, stl, 25' x24' cone, 2000bbl, incl fdn, fab&erect, fixed roof	EA	112,000.00	
4200	Tank, stl, 40' x24' cone, 5000bbl, incl fdn, fab&erect, fixed roof	EA	142,000.00	
4210	Tank, stl, 60' x24' cone, 12000bbl, incl fdn, fab&erect, fixed roof	EA	195,000.00	
4220	Tank, stl, 60' x40' cone, 20000bbl, incl fdn, fab&erect, fixed roof	EA	227,000.00	
4230	Tank, stl, 70' x32' cone, 24000bbl, incl fdn, fab&erect, fixed roof	EA	247,000.00	
4350	Tank, stl, 80' x40' cone, 36000bbl, incl fdn, fab&erect, fixed roof	EA	322,000.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4400	Tank, stl, 90' x40' cone, 45000bbl, incl fdn, fab&erect, fixed roof	EA	373,000.00	
4510	Tank, stl, 100' x40' cone, 56000bbl, incl fdn, fab&erect, fixed roof	EA	421,000.00	
4520	Tank, stl, 120' x32' cone, 64000bbl, incl fdn, fab&erect, fixed roof	EA	485,000.00	
4530	Tank, stl, 120' x40' cone, 80000bbl, incl fdn, fab&erect, fixed roof	EA	536,000.00	
4540	Tank, stl, 140' x32' cone, 88000bbl, incl fdn, fab&erect, fixed roof	EA	605,000.00	
4650	Tank, stl, 140' x40' cone, 110000bbl, incl fdn, fab&erect, fixed roof	EA	677,000.00	
4700	Tank, stl, 160' x40' cone, 143000bbl, incl fdn, fab&erect, fixed roof	EA	839,000.00	
4810	Tank, stl, 180' x40' cone, 180000bbl, incl fdn, fab&erect, fixed roof	EA	1,016,000.00	
4820	Tank, stl, 200' x40' cone, 224000bbl, incl fdn, fab&erect, fixed roof	EA	1,225,000.00	
13205 5899	Nitrous oxide tank, 6 ton capacity			
5900	Tanks, ground storage, nitrous oxide, 6 ton capacity	EA	35,476.99	
13205 7709	Plastic, ground level, horizontal cylinder			
Note: Includes Holddown Straps And Lifting Lugs. Each Tank Shall Include One 22" Manhole And 4" NPT Connectors As Follows: 550Gal Or 1000Gal, 4 Each: All Others 6 Each. Prices Do Not Include Excavation, Backfill Or Piping.				
7710	Tanks, gnd stor, 550 gal, 4" NP conn, plastic, horiz cyl	EA	1,248.65	
7720	Tanks, gnd stor, 1000 gal, 4" NP conn, plastic, horiz cyl	EA	1,582.70	
7730	Tanks, gnd stor, 2000 gal, 6" NP conn, plastic, horiz cyl	EA	2,343.45	
7740	Tanks, gnd stor, 4000 gal, 6" NP conn, plastic, horiz cyl	EA	3,246.15	
7750	Tanks, gnd stor, 6000 gal, 6" NP conn, plastic, horiz cyl	EA	4,055.35	
7760	Tanks, gnd stor, 8000 gal, 6" NP conn, plastic, horiz cyl	EA	4,366.45	
7770	Tanks, gnd stor, 10000 gal, 6" NP conn, plastic, horiz cyl	EA	5,009.05	
7780	Tanks, gnd stor, 12000 gal, 6" NP conn, plastic, horiz cyl	EA	5,669.50	
7790	Tanks, gnd stor, 15000 gal, 6" NP conn, plastic, horiz cyl	EA	11,282.05	
7800	Tanks, gnd stor, 20000 gal, 6" NP conn, plastic, horiz cyl	EA	12,574.90	
7810	Tanks, gnd stor, 25000 gal, 6" NP conn, plastic, horiz cyl	EA	20,261.45	
7820	Tanks, gnd stor, 30000 gal, 6" NP conn, plastic, horiz cyl	EA	30,275.30	
7830	Tanks, gnd stor, 40000 gal, 6" NP conn, plastic, horiz cyl	EA	33,589.45	
7840	Tanks, gnd stor, 48000 gal, 6" NP conn, plastic, horiz cyl	EA	50,085.40	
7850	Tanks, gnd stor, 50000 gal, 6" NP conn, plastic, horiz cyl	EA	53,996.25	
7860	Tanks, gnd stor, 1000 gal, plastic, horiz cyl, double wall	EA	3,850.50	
13205 8009	Steel, ground level, horizontal water tank			
8010	Tanks, gnd stor, steel, horizontal water tank, 5000 gal	EA	4,659.00	
8020	Tanks, gnd stor, steel, horizontal water tank, 10000 gal	EA	7,470.50	
8030	Tanks, gnd stor, steel, horizontal water tank, 20000 gal	EA	11,427.00	
8040	Tanks, gnd stor, steel, horizontal water tank, 35000 gal	EA	23,340.50	
13205 9009	Steel, galvanized, ground level, vertical water			
9010	Tanks, gnd stor, 5000 gal, steel, galv, vertical water tank	EA	4,376.00	
9020	Tanks, gnd stor, 10000 gal, steel, galv, vertical water tank	EA	7,194.00	
9030	Tanks, gnd stor, 20000 gal, steel, galv, vertical water tank	EA	10,525.00	
9040	Tanks, gnd stor, 35000 gal, steel, galv, vertical water tank	EA	16,055.00	
9050	Tanks, gnd stor, 250000 gal, steel, galv, vertical water tank	EA	79,134.00	
9060	Tanks, gnd stor, 500000 gal, steel, galv, vertical water tank	EA	91,168.00	
13206 1000	Wood Tanks Ground Level			
1001	3000 Gal, Cypress	EA	9,503.40	
1002	10000 Gal, Cypress	EA	18,767.60	
1003	20000 Gal, Redwood Or Fir	EA	23,433.99	
1004	30000 Gal, Redwood Or Fir	EA	31,426.22	
1005	45000 Gal, Redwood Or Fir	EA	38,663.07	
13206 9000	Nickelshield Storage Tanks			
9001	325 Gal	EA	4,981.87	
9002	490 Gal	EA	6,948.60	
9003	605 Gal	EA	7,959.52	
9004	740 Gal	EA	9,429.60	
9005	940 Gal	EA	10,987.71	
9006	1505 Gal	EA	14,225.54	
9007	1615 Gal	EA	16,063.71	
9008	2275 Gal	EA	22,049.43	
9009	3815 Gal	EA	28,489.96	
13207 1000	Aboveground Concrete Vaulted Storage Tanks Paint			
1001	500Gal Agnd Dbl Wall Stl Tank Pa inted, In Place w/Stand	EA	8,701.75	
1002	1000Gal Agnd Dbl Wall Stl Tank P ainted, In Place w/Stand	EA	10,956.70	
1003	2000Gal Agnd Dbl Wall Stl Tank P ainted, In Place w/Stand	EA	19,425.94	
1004	4000Gal Agnd Dbl Wall Stl Tank P ainted, In Place w/Stand	EA	30,796.01	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1005	5000Gal Agnd Dbl Wall Stl Tank P ainted,In Place w/Stand	EA	35,178.95	
1006	6000Gal Agnd Dbl Wall Stl Tank P ainted,In Place w/Stand	EA	39,590.26	
1007	8000Gal Agnd Dbl Wall Stl Tank P ainted,In Place w/Stand	EA	43,994.17	
1008	10000Gal Agnd Dbl Wall Stl Tank Painted,In Place w/Stand	EA	48,395.77	

13210 Elevated Storage Tanks

13210 0010 Tanks

13210 3000 Elevated water tanks, incl painting

Note: Capacity Line. Price Includes Material, Fabrication, And Field Erection.

3010	Tanks, no pipe/pumps, 50000gal, elev water tk,100' to bot cap	EA	230,000.00	
3300	Tanks, no pipe/pumps, 100000gal, elev water tk,100' to bot cap	EA	272,000.00	
3400	Tanks, no pipe/pumps, 250000gal, elev water tk,100' to bot cap	EA	390,000.00	
3600	Tanks, no pipe/pumps, 500000gal, elev water tk,100' to bot cap	EA	569,000.00	
3700	Tanks, no pipe/pumps, 750000gal, elev water tk,100' to bot cap	EA	800,000.00	
3900	Tanks, no pipe/pumps,1000000gal, elev water tk,100' to bot cap	EA	1,021,000.00	

13210 3999 Tank tower

4000	Elevated water tank tower, no pipe/pumps, for 5,000 gal	EA	4,416.21	
4100	Elevated water tank tower, no pipe/pumps, for 10,000 gal	EA	4,852.35	
4200	Elevated water tank tower, no pipe/pumps, for 20,000 gal	EA	5,713.86	
4300	Elevated water tank tower, no pipe/pumps, for 35,000 gal	EA	6,704.60	

13212 3000 Flexible Product and Containment Pipe Systems

Note: For underground storage tanks, oil or gasoline (Environflex or equal)

3001	Flexible Secondary Containment P iple 4.5"		8.08	
3002	Flexible Secondary Containment a nd Vent Pipe, 2-1/2"		7.54	
3003	Flexible Product Pressure Pipe f or Oil or Gasoline 1/2"		8.08	
3004	Flexible Product Pressure Pipe f or Oil or Gasoline 3/4"		8.62	
3005	Flexible Product Pressure Pipe f or Oil or Gasoline 1-1/2"		18.85	
3006	Flexible Product Pressure Pipe f or Oil or Gasoline 2-1/2"		29.61	
3007	Flexible Product Pressure Pipe C oupling With Washer 1/2"		61.38	
3008	Flexible Product Pressure Pipe C oupling With Washer 3/4"		64.61	
3009	Flexible Product Pressure Pipe C oupling With Washer 1-1/2"		113.56	
3010	Flexible Product Pressure Pipe C oupling With Washer 2-1/2"		143.23	
3011	Product Pressure Pipe Adapters 1 /2" Flex x 3/4" NPT		17.18	
3012	Product Pressure Pipe Adapters 3 /4" Flex x 3/4" NPT		16.48	
3013	Product Pressure Pipe Adapters 1 -1/2" Flex x 3/4" NPT		68.92	
3014	Product Pressure Pipe Adapters 2 -1/2" Flex x 3/4" NPT		80.77	
3015	Product Pressure Pipe Fittings 1 -1/2" Tee		89.92	
3016	Product Pressure Pipe Fittings 2 -1/2" Tee		123.84	
3017	Product Pressure Pipe Fittings 1 -1/2" Ell		57.45	
3018	Product Pressure Pipe Fittings 2 -1/2" Ell		75.38	
3019	Secondary Bulkhead 4-1/2" Contai nment Pipe Adapters		64.61	
3020	Secondary Bulkhead 2-1/2" Contai nment Pipe Adapters		52.77	
3021	Secondary Bulkhead 4-1/2" Condui t Adapters		42.00	
3022	Manhole Mounting Nipple, 4"		96.92	
3023	Termination Assenbly With Plug, 4-1/2"		91.54	
3024	Steel Duplex Tank Plug, 4"		48.46	

13214 Underground Storage Tanks

13214 0010 Tanks, fiberglass and steel

13214 2210 Fiberglass, underground, single wall

2225	Tank,550gal, UL listed, no manway, w/hold-down strap, fbgl,ugnd,sg	EA	1,754.76	
2230	Tank,1000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	2,147.64	
2240	Tank,2000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	3,376.60	
2245	Tank,3000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	3,708.67	
2255	Tank,5000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	4,898.88	
2270	Tank,8000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	5,666.39	
2280	Tank,10000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	7,202.79	
2282	Tank,12000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	7,175.83	
2284	Tank,15000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	11,115.95	
2290	Tank,20000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	14,308.24	
2320	Tank,30000gal, UL listed, no manway, w/hold-down strap, fbgl,sg	EA	35,007.45	

13214 3020 Fiberglass, underground, double wall

3035	Tank, 550gal, UL listed, w/manway & hold-down strap, fbgl,ugnd,dbl	EA	3,606.56	
3050	Tank, 1000gal, UL listed, w/manway & hold-down strap, fbgl,ugnd,db	EA	5,602.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3055	Tank, 2000gal, UL listed, w/manway & hold-down strap, fbgl's, ugn'd, db	EA	5,972.25	
3070	Tank, 3000gal, UL listed, w/manway & hold-down strap, fbgl's, ugn'd, db	EA	8,442.90	
3080	4000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	13,539.20	
3085	Tank, 5000gal, UL listed, w/manway & hold-down strap, fbgl's, ugn'd, db	EA	9,739.58	
3090	6000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	15,309.32	
3100	Tank, 8000gal, UL listed, w/manway & hold-down strap, fbgl's, ugn'd, db	EA	11,695.94	
3110	Tank, 10000gal, UL listed, w/manway & hold-down strap,	EA	13,646.88	
3120	Tank, 12000gal, UL listed, w/manway & hold-down strap,	EA	16,600.85	
3122	Tank, 15000gal, UL listed, w/manway & hold-down strap,	EA	20,505.46	
3124	Tank, 20000gal, UL listed, w/manway & hold-down strap,	EA	25,249.29	
3126	25000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	67,332.67	
3128	Tank, 30000gal, UL listed, w/manway & hold-down strap,	EA	40,729.29	
3130	40000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	117,034.68	
3132	48000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	52,536.89	
3134	50000Gal Horiz Cylind Plastic Tk With 6" NPT Connection	EA	55,370.03	
13214 5000 Steel, underground, single wall				
5335	10000 Gal Sgl Wall Stl Stor Tk, Ugn'd, w/Coating, Fitngs & Straps	EA	8,389.88	
5510	Tk, 500 gal, 7 ga, sti-P3, in place, no exc/pad/pmp/pp, stl ugn'd, sgl	EA	1,069.61	
5520	Tk, 1000gal, 7 ga, sti-P3, in place, no exc/pad/pmp/pp, stl ugn'd, sgl	EA	1,923.17	
5535	Tk, 2500gal, 7 ga, sti-p3, in place, no exc/pad/pmp/pp, stl ugn'd, sgl	EA	3,166.83	
5540	Tank, 5000 gal, 1/4" thk shell, sti-P3, in place, stl ugn'd, sgl	EA	5,118.08	
5560	Tank, 10000 gal, 1/4" thk shell, sti-P3, in place, stl ugn'd, sgl	EA	6,752.90	
5600	Tank, 20000 gal, 5/16" thk shell, sti-P3, in place, stl ugn'd, sgl	EA	14,921.38	
5620	Tank, 30000 gal, 3/8" thk shell, sti-P3, in place, stl ugn'd, sgl	EA	25,949.61	
13214 5700 Steel, underground, w/coating, straps & fittings				
5705	Tank, 550 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	1,353.51	
5710	Tank, 2000 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	2,868.39	
5720	Tank, 3000 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	3,964.20	
5730	Tank, 8000 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	6,382.90	
5740	Tank, 12000 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	8,232.82	
5750	Tank, 15000 gal, stl, ugn'd, sti-P3, w/coating, straps &	EA	11,872.37	
13214 5800 Saw Cut End Out Of Old Tank For Disposal				
5810	Saw Cut End Out Of Tank	LF	16.51	
13214 7000 Steel, underground, lox tank				
7020	Tanks, underground storage, 3000 gallon LOX tank	EA	42,182.49	
7040	Tank, underground storage, 6000 gallon LOX tank	EA	60,043.06	
13214 8019 Oxygen vaporizer				
8020	Tank, ugn'd storage, water bath oxygen vaporizer, 5000 SCFH	EA	12,682.52	
13214 9010 Steel, underground, double wall coated				
Note: Pricing Includes Setting In Place W/hold Down Bars. Excavation, Pad, Plastic Lining Pumps And Piping Not Included				
9080	Tk, stl, 500 gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	2,534.34	
9120	Tk, stl, 1000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	3,569.52	
9140	Tk, stl, 2000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	4,620.69	
9180	Tk, stl, 3000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	5,884.28	
9200	Tk, stl, 4000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	7,038.09	
9220	Tk, stl, 5000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	8,363.22	
9240	Tk, stl, 6000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	9,918.96	
9260	Tk, stl, 8000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	10,387.87	
9280	Tk, stl, 10000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	11,719.39	
9300	Tk, stl, 12000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	14,026.99	
9320	Tk, stl, 15000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	19,561.98	
9340	Tk, stl, 20000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	23,934.17	
9360	Tk, stl, 25000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	30,728.99	
9380	Tk, stl, 30000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	36,926.03	
9400	Tk, stl, 40000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	47,374.19	
9420	Tk, stl, 48000gal cap, dbl wall ugn'd, w/sti-p3 crsn prot & hold	EA	60,319.78	
13214 9500 EPA Required Fittings Standard For 4" NPT Piping.				
9510	Fill Pipe Spill Containment Manhole (5 Gal)	EA	429.37	
9520	Over-fill Prevention Valve	EA	660.21	
9530	Fuel Oil Contaminated Soil Disposal, Haul Included	CY	54.21	
9540	Steam Clean Tank & Dispose Of Residue	EA	374.38	

13215 L.P.G. Tanks, Controls, And Piping

Set On Concrete Pad.

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
13215 1000 L. P. G. Tanks With Regulator And Safety Controls				
1001	250Gal LP Gas Storage Tank	EA	523.40	
1002	500Gal LP Gas Storage Tank	EA	764.36	
1003	1000Gal LP Gas Storage Tank	EA	1,276.59	
13216 Steel dike				
13216 0010 Steel dike for storage tanks				
0020	Steel dike for storage tank, primed, 550 gallon capacity	EA	990.52	
0040	Steel dike for storage tank, primed, 1000 gallon capacity	EA	1,665.09	
0060	Steel dike for storage tank, primed, 2000 gallon capacity	EA	3,029.83	
0080	Steel dike for storage tank, primed, 3000 gallon capacity	EA	4,099.88	
0100	Steel dike for storage tank, primed, 5000 gallon capacity	EA	5,353.92	
0120	Steel dike for storage tank, primed, 6000 gallon capacity	EA	6,014.81	
0140	Steel dike for storage tank, primed, 8000 gallon capacity	EA	7,234.06	
0160	Steel dike for storage tank, primed, 10000 gallon capacity	EA	8,416.70	
0180	Steel dike for storage tank, primed, 12000 gallon capacity	EA	8,954.93	
0200	Steel dike for storage tank, primed, 15000 gallon capacity	EA	10,418.59	
0220	Steel dike for storage tank, primed, 20000 gallon capacity	EA	13,539.95	
13219 Tank leak detection				
13219 0010 Tank leak detection system				
13219 0169 Integrated control panel				
0180	Integrated cont panel, 1-2 dbl wall tank, w/monitoring sys &	EA	1,757.18	105.64
0181	Integrated cont panel, 1-8 sgl wall tank, w/monitoring sys &	EA	1,757.18	105.64
0190	Integrated cont panel, 2-8 dbl wall tank, w/monitoring sys &	EA	2,919.17	105.63
13219 0200 Probes				
0240	Tank leak detect, hydrocarbon vap, float mtd, well monitoring,	EA	581.52	
0310	Tank leak detect, pipe trench/ manway sump, 2nd contain, liq ph,	EA	376.91	
0330	Tk leak detect, dbl w fbgls annular sp, 2nd contain, liq ph,	EA	376.91	
13400 Clean Rooms				
13410 Clean Rooms				
13410 1000 Ceiling Systems Including Grid, Blank Panels, HE				
1001	Class 10000 (30% HEPA)	SF	32.31	
1002	Class 100 (90% HEPA)	SF	59.23	
1003	100% HEPA	SF	75.38	
1004	Channel Seat, Class 100	SF	80.77	
1005	Channel Seat, Class 10	SF	96.92	
1006	Hooded Filter Type 100	SF	37.69	
1007	Ceiling Frid Support, Slotted Ch annel Struts 4' OC Each Way	SF	5.65	
1008	Polyester Coated Alum Wa&Pnl Sys , Including Channel Strut Frame	SF	18.95	
1009	Porcelain Coated Alum Wa&Pnl Sys , Including Channel Strut Frame	SF	29.61	
13600 Solar And Wind Energy Equipment				
13630 Solar Collector Components				
13630 2000 Solar Energy				
2001	lo temp, 1 collector, circulator, fittings, 65 gal tank	EA	1,624.70	
2002	lo temp, 2 collectors, circulator, ftngs, 120 gal. tk	EA	2,286.64	
2003	lo temp, 3 collectors, circulator, ftngs, 120 gal. tk	EA	2,744.32	
2004	Solarht pkg 1panl, pump, 80g tank med	EA	1,759.31	
2005	med temp pkg, 2 collectors, circulator, ftngs, 120 gal. tk	EA	2,448.18	
2006	med temp pkg, 3 collectors, circulator, ftng, 120 gal. tk	EA	4,350.09	
2007	Solar engy, std pkg, com/prcs, f or ea addl 120 gal. tk, add	EA	775.36	
2008	Solar energy, controller, liquid temperature	EA	106.63	
2009	Solar energy, circulators, air, 100-300 S.F. system, 1/10 HP	EA	142.16	
2010	Solar energy, circulators, air, 300-500 S.F. system, 1/5 HP	EA	195.22	
2011	Solar energy, circulators, air, two speed, 100-300 S.F., 1/10 HP	EA	142.78	
2012	circulators, air, reversible fan, 20" diameter, 2 speed	EA	113.68	
2013	circulators, air, space & DHW system, less duct work	EA	1,645.83	
2014	Solar energy, circulators, booster fan, 6" diameter, 120 CFM	EA	39.86	
2015	Solar energy, circulators, booster fan, 6" diameter, 225 CFM	EA	47.93	
2016	Solar energy, circulators, booster fan, 8" diameter, 150 CFM	EA	44.16	
2017	Solar energy, circulators, booster fan, 8" diameter, 310 CFM	EA	66.32	
2018	Solar energy, circulators, booster fan, 8" diameter, 425 CFM	EA	73.86	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2019	Solar energy, circulators, rheos tat	EA	17.18	
2020	Solar energy, circulators, shutt er/damper	EA	54.22	
2021	Solar energy, circulators, shutt er motor	EA	108.78	
2022	Solar energy, circulators, liqui d, 1/25 HP, 5.3 GPM	EA	155.79	
2023	Solar energy, circulators, liqui d, 1/20 HP, 17 GPM	EA	164.35	
2024	circulators, liquid, 1/20 HP, 1 7 GPM stainless steel	EA	254.80	
2025	Solar energy, circulators, liqui d, 1/12 HP, 30 GPM	EA	347.77	
2026	coll pnls,air W/alum absorber,fl t bk,plstc glazing,4'x8'	EA	657.65	
2027	coll pnls,air W/alum absorber,fl t bk,plstc glazing,4'x10'	EA	810.72	
2028	Solar engy, coll pnls, air Walu m absorber, 10' to 16' x 22" W	LF	157.95	
2029	coll pnls, air Walum absorber, manf, by L.F. wd of coll	LF	29.51	
2030	Solar engy, coll pnls, liq, alum . FR, 4' x 8', 5/32" sgl glazin	EA	595.90	
2031	coll pnls, liq, alum FR, 4' x 10', 5/32" sgl glazing	EA	714.22	
2032	collector panels, liq, W/cu abs orber,bk, alum FR, 3'x8'	EA	472.56	
2033	collector panels, liq, W/cu abs orber,bk, alum FR,4'x8.5'	EA	543.22	
2034	collector panels, liq,Wcu abso rber,bk,alum FR,4'x10.5'	EA	649.30	
2035	collector panels, liq,Wcu abso rber,bk,alum FR,4'x12.5'	EA	808.60	
2036	coll pnls, liq, tube absorber p l, alum FR 4'x8' tmpd gl	EA	541.61	
2037	collector panels, liquid with v acuun tubes, 4' x 6'-10"	EA	919.47	
2038	coll pnls, liq, full wetted, pl stc, alum FR, 3' x 10'	EA	227.08	
2039	Solar energy, collector panel mo unting, flat roof or ground rac	EA	81.67	
2040	Solar energy, collector panel mo unting, roof clamps	SET	2.95	
2041	Solar energy, collector panel mo unting, roof strap, teflon	LF	10.41	
2042	differential controller Wtwo s ensors, thermostat, HD wrd	EA	103.80	
2043	diff controller Wtwo snsr, the rmo, line cord & recept	EA	86.61	
2044	Solar engy, diff controller Wtwo o snsr, pool V sys, 2" pipe siz	EA	229.43	
2045	diff cont Wtwo snsr, pool V sy s, 1-1/2" pipe (copper)	EA	294.59	
2046	diff controller Wtwo sensors, pool P sys, 2" pipe size	EA	178.60	
2047	diff controller Wtwo sensors, 5 sta Wdigital read-out	EA	230.14	
2048	Solar engy, diff controller Wtwo o snsr, snsr, brs plug, 1/2" MP	EA	19.06	
2049	diff controller Wtwo sensors, sensors, brs plug, rvsd	EA	25.41	
2050	diff controller Wtwo sensors, sensors, freeze prevention	EA	22.72	
2051	diff controller Wtwo sensors, sensors, screw attached	EA	12.11	
2052	differential controller Wtwo s ensors, sensors, brs, imrs	EA	27.56	
2053	Solar energy, heat exchanger, fl uid to air coil, up flow, 45 MB	EA	321.81	
2054	Solar energy, heat exchanger, fl uid to air coil, up flow, 70 MB	EA	363.63	
2055	Solar energy, heat exchanger, fl uid to air coil, up flow, 80 MB	EA	480.77	
2056	ht exch, fld to fld pkg incl tw o circulating ps, exp tk	EA	782.62	
2057	ht transfer fld, propylene glyc ol, inhibited anti-freeze	GAL	10.83	
2058	solar stor tk, knocked dn, air, 4' hi, 4'x4', = 64 C.F./450 gal	EA	1,892.18	
2059	solar stor tk, knocked dn, air, 4'x8' = 128 C.F./900 gal	EA	2,469.06	
2060	solar stor tk, knocked dn, air, 4'x12' = 190 C.F./1300 gal	EA	3,283.81	
2061	solar stor tk, knocked dn, air, 8'x8' = 250 C.F./1700 gal	EA	3,676.67	
2062	solar stor tk, knocked dn, air, 7'x7' = 306 C.F./2000 gal	EA	8,865.39	
2063	stor tk, knocked dn, air, 7'x10 '-6" = 459 C.F./3000 gal	EA	11,225.08	
2064	Solar engy, stor tk, knocked dn, air, 7'x14' = 613 C.F./4000 gal	EA	13,100.16	
2065	stor tk,knocked dn,air,10'-6"x10 '-6" = 689 C.F./4500 gal	EA	13,566.42	
2066	stor tk, knocked dn, air, 10'-6 "x14' = 919 C.F./6000 gal	EA	15,988.81	
2067	stor tk, knocked dn, air, 14'x1 4' = 1225 C.F./8000 gal	EA	18,777.04	
2068	stor tk,knocked dn,air,14'x17'-6 " = 1531 C.F./10,000 gal	EA	21,156.21	
2069	stor tk,knocked dn,air,17'-6"x17 '-6" = 1914 C.F./12,500 gal	EA	24,917.26	
2070	stor tk,knocked dn,air,17'-6"x21 ' = 2297 C.F./15,000 gal	EA	27,862.07	
2071	stor tk, knocked dn, air, 21'x2 1' = 2756 C.F./18,000 gal	EA	31,923.49	
2072	solar stor tk, knocked dn, air, 4' hi 4' x 4' = 64 C.F./450 gal	EA	1,919.10	
2073	solar stor tk, knocked dn, air, 4'x8' = 128 C.F./900 gal	EA	2,899.82	
2074	solar stor tk, knocked dn, air, 4'x12' = 190 C.F./1300 gal	EA	3,849.18	
2075	solar stor tk, knocked dn, air, 8'x8' = 250 C.F./1700 gal	EA	4,295.88	
2076	solar stor tk, knocked dn, air, 7'x7' = 306 C.F./2000 gal	EA	9,457.68	
2077	stor tk, knocked dn, air, 7'x10 '-6" = 459 C.F./3000 gal	EA	11,548.14	
2078	Solar engy, stor tk, knocked dn, air, 7'x14' = 613 C.F./4000 gal	EA	13,423.23	
2079	stor tk,knocked dn,air,10'-6"x10 '-6" = 689 C.F./4500 gal	EA	13,889.48	
2080	stor tk, knocked dn, air, 10'-6 "x14' = 919 C.F./6000 gal	EA	16,419.57	
2081	stor tk, knocked dn, air, 14'x1 4' = 1225 C.F./8000 gal	EA	19,207.80	
2082	stor tk,knocked dn,air,14'x17'-6 " = 1531 C.F./10,000 gal	EA	21,586.96	
2083	stor tk,knocked dn,air,17'-6"x17 '-6" = 1914 C.F./12,500 gal	EA	25,455.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2084	stor tk, knocked dn, air, 17'-6"x21' = 2297 C.F./15,000 gal	EA	28,723.58	
2085	stor tk, knocked dn, air, 21'x21' = 2756 C.F./18,000 gal	EA	32,892.69	
2086	solar control valves and vents, air purger, 1" pipe size	EA	47.30	
2087	solar control vs & vents, air eliminator, auto 3/4" size	EA	30.26	
2088	solar control vs & vents, air vent, automatic, 1/8" ftng	EA	11.30	
2089	solar control valves and vents, air vent, man, 1/8" NPT	EA	3.40	
2090	solar cont vs & vents, backflow preventer, 1/2" pipe size	EA	63.20	
2091	solar cont vs & vents, backflow preventer, 3/4" pipe size	EA	64.28	
2092	solar control vs and vents, balancing V, 3/4" pipe size	EA	23.97	
2093	Solar engy, solar control vs and vents, drdown V, 1/2" cu tube	EA	205.58	
2094	solar control vs & vents, flow control V, 1/2" pipe size	EA	52.87	
2095	solar control valves and vents, exp tank, up to 5 gal.	EA	63.64	
2096	solar control valves and vents, hydronic controller	EA	45.11	
2097	solar control valves and vents, pressure gauge, 2" dial	EA	23.79	
2098	solar cont vs&vents, rlf V, temp.&press 3/4" pipe size	EA	9.50	
2099	solar cont vs & vents, solenoid V, NC, brs, 3/4" NPT, 24v	EA	232.50	
2100	solar cont vs & vents, solenoid V, NC, brs, 1" NPT, 24v	EA	232.50	
2101	solar control vs and vents, vac rlf V, 3/4" pipe size	EA	27.56	
2102	thermometers, digital temperature monitoring, 4 locations	EA	160.51	
2103	Solar energy, thermometers, inline, upright, 1/2" NPT	EA	32.19	
2104	Solar energy, thermometers, remote probe, 2" dial	EA	35.96	
2105	Solar energy, thermometers, stem, 2" dial, 9" stem	EA	22.82	
2106	wtr stor tk Wht exch, 66 gal. W2" x 1/2 LB dens insul	EA	368.24	
2107	wtr stor tk Wht exch, 66 gal. W2" x 2 LB dens insul	EA	723.62	
2108	wtr stor tk Wht exch, 80 gal. W2" x 1/2 LB dens insul	EA	411.32	
2109	wtr stor tk Wht exch, 80 gal. W2" x 2 LB dens insul	EA	825.92	
2110	wtr stor tk Wht exch, 120 gal. W2" x 1/2 LB dens insul	EA	447.00	
2111	wtr stor tk Wht exch, 120 gal. W2" x 2 LB dens insul	EA	931.60	
2112	Solar engy, wtr tk Wht exch, 120gal W2"x2lb insul, 40sf coil	EA	1,066.21	
2113	water storage module, plastic, tubular, 12" dia, 4' high	EA	76.07	
2114	water storage module, plastic, tubular, 12" dia, 8' high	EA	112.83	
2115	water storage module, plastic, tubular, 18" dia, 5' high	EA	124.72	
2116	water storage module, plastic, tubular, 18" dia, 10' high	EA	164.73	
2117	water storage module, plastic, tubular, 58" dia, 5' high	EA	497.45	
2118	Solar energy, water storage module, plastic, cap, 12" diameter	EA	11.31	
2119	Solar energy, water storage module, plastic, cap, 18" diameter	EA	14.00	

13800 Vaults

13800 Vaults

13800 1000 Floor Safes

1001	Floor Safes, Class C 1.3 CF	EA	2,393.27	21.80
1002	Floor Safes, Class C 1.9 CF	EA	3,163.38	28.79
1003	Floor Safes, Class C 5.2 CF	EA	2,831.64	28.82
1004	Floor Safes, Class D 1.0 CF	EA	1,498.76	14.84

13947 Building Automation Systems

13947 Energy Monitor And Control Systems

Note: For Reference to Apply Pricing See Emcs Cost Estimating Guidelines 83-048. Fwb 1983 Line item notes subordinate to the notes of the major heading the item is within.

13947 1000 General Cost

Note: 1) Price per point. 2) Cost for 1st year's maintenance and service, Based on hardware material prices including central gear, field gear, sensors and controls, but not software or wiring. 3) Price shown plus \$5 per point.

13947 1400 System Test

13947 1450 Field Test

1451	EMCS Filed Test - See note 1	SET	32.80	
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13947 1500 Checkout And Startup

13947 1510 Existing Controls

1511	EMCS Checkout/Startup of Control See Note 1	EA	40.72	
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13947 7000 Sensors, Actuators And Control Devices

Note: 1) Sensors, Actuators And Control Devices Note: 1) Sensor alone: Price does not include Thermowell. 2) Prices include required current and potential transformer. 3) Price based on 12Kv to adjust, add or subtract \$92 Per Kv from material cost. 4) Price is based on 34.5 K to adjust, add or subtract \$253 per Kv from material cost. 5) More poles require proportionally more labor cost.

13947 7100 Sensors

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7101	EMCS Space Temperature Sensor Field Equipment, Sensors	EA	103.22	
7102	EMCS OA Temperature, Sensor Field Equipment, Sensors	EA	83.98	
7103	EMCS Dust Temperature, Sensor Field Equipment, Sensors	EA	102.10	
7104	EMCS Avg Temperature, Sensor Field Equipment, Sensors	EA	93.98	
7105	EMCS Liquid Temperature, Sensor Field Equipment, Sensors	EA	98.74	
7106	EMCS Relative Humidity, Sensor Field Equipment, Sensors	EA	167.72	
7107	EMCS Dewpoint Sensor Field Equipment, Sensors	EA	371.33	
7108	EMCS Solar Radiation Sensor Field Equipment, Sensors	EA	1,046.72	
7109	EMCS Wind Speed And Direction Field Equipment, Sensors	EA	524.75	
7111	EMCS Position Measurement Field Equipment, Sensors	EA	117.63	
7112	EMCS O2 Analyzer Field Equipment, Sensors	EA	4,990.75	
7113	EMCS Freezstat Field Equipment, Sensors	EA	114.56	
13947 7200 Electric Meters				
7201	EMCS, One Phase, Under 600V Field Equipment, Electric Meters	EA	1,113.69	
7211	EMCS, Three Phase, Under 600V Field Equipment, Electric Meters	EA	1,494.13	
7221	EMCS, Three Phase, 600V to 25Kv Field Equipment, Electric Meters	EA	5,029.37	
7231	EMCS, Three Phase, Over 25Kv Field Equipment, Electric Meters	EA	26,531.93	
13947 7300 Switches				
7301	EMCS, Temperature Switch Field Equipment, Switches	EA	73.94	
7302	EMCS, Air Pressure Switch Field Equipment, Switches	EA	70.43	
7304	EMCS, Water Pressure Switch Field Equipment, Switches	EA	79.59	
7305	EMCS, Barometric Pressure Switch Field Equipment, Switches	EA	1,491.17	
13947 7400 Msc Devices				
7401	EMCS Copper Thermowell Field Equipment, Misc Devices	EA	151.92	
7402	EMCS Stainless Steel Thermowell Field Equipment, Misc Devices	EA	208.46	
7403	EMCS Contactor 60 Amp Field Equipment, Misc Devices	EA	399.30	
7404	EMCS Contactor 100 Amp Field Equipment, Misc Devices	EA	567.48	
7405	EMCS EP Valve Field Equipment, Misc Devices	EA	82.69	
7406	EMCS EP Transducer Field Equipment, Misc Devices	EA	216.59	
7407	EMCS PE Transducer Field Equipment, Misc Devices	EA	383.99	
13947 7800 Relay Devices				
7801	EMCS Control Relay, Dpdt Field Equipment, Relay Devices	EA	67.84	
7802	EMCS Power Relay, Field Equipment, Relay Devices	EA	116.96	
7803	EMCS Time Delay Relay, Field Equipment, Relay Devices	EA	94.88	
7804	EMCS Latching Relay, Field Equipment, Relay Devices	EA	117.50	
7805	EMCS Read Relay, Field Equipment, Relay Devices	EA	60.94	
7806	EMCS Auxillary Contacts Field Equipment, Relay Devices	EA	81.06	
13947 7900 Damper Actuators				
7901	EMCS Pneumatic Damper Actuator Field Equipment, Damper Actuator	EA	128.03	
7902	EMCS Pneumatic With Positioner Field Equipment, Damper Actuator	EA	191.00	
7903	EMCS 2 Position Electric Field Equipment, Damper Actuator	EA	208.25	
7904	EMCS 2 Modulating Electric Field Equipment, Damper Actuator	EA	377.98	
7905	EMCS Pneumatic Controller Field Equipment, Damper Actuator	EA	181.95	
7906	EMCS Electric Controller Field Equipment, Damper Actuator	EA	187.94	
13947 8000 Wire & Cable				
Note: 1) Prices of conduit are for Wire & Cable Note: 1) Prices of conduit are for exposed installations. 2) Prices per box. 3) Only required for outside wiring. 4) Cost for protection on both ends, including metallic enclosure.				
13947 8100 Control Wiring				
8101	EMCS Digital Control Wiring	LF	0.44	
8111	EMCS Analog (18 AWG) Control Wiring	LF	0.56	
8121	EMCS Analog (20 AWG) Control Wiring	LF	0.49	
13947 8200 Conduit				
8201	EMCS 1/2" EMT Conduit	LF	2.07	
8211	EMCS 3/4" EMT Conduit	LF	2.55	
8221	EMCS 1" EMT Conduit	LF	3.11	
8231	EMCS 1-1/2" EMT Conduit	LF	3.80	
13947 8300 Surge Protection				
8301	EMCS Power Line Surge Protection	EA	369.22	
8311	EMCS Sensor Wiring Surge Protection	EA	266.77	
8321	EMCS Communication Links Surge Protection	EA	266.77	
13947 9000 Data Transmission Media				
Note: The majority of large, medium and small EMCS systems will utilize phone line. Details below are for other methods of communications. 1) A duplexer can be used in lieu of two antennas. A duplexer is used only on two-way systems. 2) Price is for broadband YagiW9.5Db Used when field located 15-20 miles from central control. 3) Prices for 2.5 Db whip				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
antennas used when field is within 2 to 5 mile from central control. 4) Price is for 25 watt transceiver at field two-way system only. 5) Used in simplex systems (one-way) to control equipment as commanded by central control. 6) Receiver with audio output. 7) Two modems are required for two-way communication between central control and field. 8) Distance between repeaters generally 3300 feet. 9) Applicable only when fiber optic equipment is integral part of field/Imux. 10) 200 micrometer, LED Powered For cable runs to 1 mile.				
13947 9100 Phone Lines				
9101	EMCS Aerial Phone Lines	MF	1,365.62	
9102	EMCS Direct Burial Phone Lines	MF	2,056.70	
9103	Existing Duct Bank Coaxial Cable	MF	2,062.65	
9104	EMCS Indoor Phone Lines	MF	1,659.90	
9105	EMCS Modem Phone Lines	EA	631.66	
9106	EMCS Line Driver Phone Lines	EA	416.93	
13947 9200 Coaxial Cable				
9201	EMCS Aerial Coaxial Cable	MF	1,349.02	
9202	EMCS Direct Burial Coaxial Cable	MF	2,056.70	
9203	Existing Duct Bank Coaxial Cable	MF	2,062.65	
9204	EMCS Indoor Coaxial Cable	MF	1,948.08	
9205	EMCS Coaxial Cable Modem	EA	977.86	
9206	EMCS Coaxial Amplifier	EA	1,463.17	
13947 9300 Power Line Carrier				
9301	Power Line Carrier, Multiplexer ECMS	EA	458.86	
9302	Power Line Transmitter, Multiplexer ECMS	EA	362.22	
9303	Power Carrier Receiver Relay ECMS	EA	142.57	
9304	Power Line Carrier Repeater ECMS	EA	298.28	
9305	Power Line Carrier Modem ECMS	EA	1,039.18	
13947 9400 Radio Frequency Carrier				
9401	EMCS Headend Transceiver Radio Frequency Carrier	EA	5,078.19	
9402	EMCS Headend Antenna 19Db Radio Frequency Carrier	EA	632.16	
9403	EMCS Radio Tower 100' Radio Frequency Carrier	EA	3,856.08	
9404	EMCS Coax Cable To Tower 1-1/2" Foam Installed	LF	2.95	
9405	EMCS Duplexer Radio Frequency Carrier	EA	803.68	
9406	EMCS Remote Antenna Radio Frequency Carrier	EA	253.24	
9408	EMCS Remote Transceiver Radio Frequency Carrier	EA	744.97	
9409	EMCS Receiver Relay Radio Frequency Carrier	EA	138.89	
9411	EMCS Repeater Radio Frequency Carrier	EA	6,864.49	
13947 9500 Fiber Optics				
9501	EMCS Modem Fiber Optics	EA	1,124.13	
9502	EMCS Repeater Fiber Optics	EA	445.44	
9503	EMCS Transmitter Module Fiber Optics	EA	140.31	
9504	EMCS Receiver Module Fiber Optic	EA	178.69	
13947 9600 Fiber Optic Cable				
9601	EMCS Aerial Fiber Optic Cable	MF	2,020.39	
9602	EMCS Trench Fiber Optic Cable	MF	2,607.54	
9603	EMCS Existing Duct Bank Fiber Optic Cable	MF	2,140.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
14100 Dumbwaiters				
14100 Dumbwaiters				
14100 1000 Dumbwaiters				
1011	Dumbwaiter, 2 Stop, No Doors, 20 0# 24"X24"	EA	6,609.13	
1012	Dumbwaiter, 2 Stop, No Doors, 50 0# 36"X36"	EA	9,662.97	
1013	Dumbwaiter, 2 Stop, Man. Doors, 2 00# 24"X24"	EA	10,494.70	
1014	Dumbwaiter, 2 Stop, Man. Doors, 5 00# 36"X36"	EA	12,253.35	
14200 Elevators				
Note: Prices Are Based On Unit WCab Sized 5 Ft By 8 Ft X 6 Stops WGalvanized Primed Shaft Door With Cab Allowances As Listed Below. 2000 Lb Capacity With At Least 100 Fpm Speed.				
14204 Collective Elevators				
14204 1000 Selective-Collective Passenger Elevators Baked E				
1001	AC Rheostatic Elev, 2000#x50 Fpm Collective Passenger Elevators	EA	97,551.75	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1002	AC Rheostatic Elev,2000#x100 Fpm Collective Passenger Elevators	EA	99,777.94	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1003	AC Rheostatic Elev,2000#x150 Fpm Collective Passenger Elevators	EA	102,065.57	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1004	Var Voltage Elev, 2500#x150 Fpm Collective Passenger Elevators	EA	86,086.80	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1005	Var Voltage Elev, 3000#x150 Fpm Collective Passenger Elevators	EA	89,258.72	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1006	Var Voltage Elev, 4000#x150 Fpm Collective Passenger Elevators	EA	91,807.49	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1007	Var Voltage Elev, 2500#x200 Fpm Collective Passenger Elevators	EA	93,436.09	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1008	Var Voltage Elev, 3000#x200 Fpm Collective Passenger Elevators	EA	97,173.53	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1009	Var Voltage Elev, 4000#x200 Fpm Collective Passenger Elevators	EA	103,193.45	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1011	Var Voltage Elev, 2500#x250 Fpm Collective Passenger Elevators	EA	94,291.96	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1012	Var Voltage Elev, 3000#x250 Fpm Collective Passenger Elevators	EA	98,029.39	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1013	Var Voltage Elev, 4000#x250 Fpm Collective Passenger Elevators	EA	104,049.31	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1014	Var Voltage Elev, 2500#x300 Fpm Collective Passenger Elevators	EA	95,249.75	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic LaminateAnd Half Stainless Steel Interio		5,750.00	
1214	For Stainless Steel Cab InteriorAdd For Each Cab		8,438.00	
1015	Var Voltage Elev, 3000#x300 Fpm Collective Passenger Elevators	EA	99,264.96	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1213	For Custom Half Plastic Laminate And Half Stainless Steel Interior		5,750.00	
1214	For Stainless Steel Cab Interior Add For Each Cab		8,438.00	
1016	Var Voltage Elev, 4000#x300 Fpm Collective Passenger Elevators	EA	105,180.77	
1201	For Each Addtl. 50 Fpm Add Per Story		2,164.00	
1202	For Each Addtl. 500 Lb Add Per Story		2,164.00	
1203	For Each Addtl. Opening Add Per Story		5,101.00	
1204	For Each Addtl. Stop Add Per Story		4,500.00	
1205	For Bonderized Steel Door Add Per Opening		155.00	
1206	For Color Aluminum Doors Add Per Opening		927.00	
1207	For Stainless Steel Doors Add Per Opening		464.00	
1208	For Cast Bronz Doors Add Per Opening		1,000.00	
1209	For Two Speed Doors Add Per Opening		155.00	
1211	For Two Speed Bi-Parting Doors Add Per Opening		1,100.00	
1212	For Custom Plastic Laminated Cab Interiors Add Per Cab		1,500.00	
1213	For Custom Half Plastic Laminate And Half Stainless Steel Interior		5,750.00	
1214	For Stainless Steel Cab Interior Add For Each Cab		8,438.00	

14205 Automatic Elevators

14205 1000 Selectomatic-Automatic Passenger Elevators Baked

1001	Auto Pass Elev, 3000 # x 300 Fpm	EA	198,906.41	
1002	Auto Pass Elev, 3500 #x 300 Fpm	EA	204,101.38	
1003	Auto Pass Elev, 4000 #x 300 Fpm	EA	205,879.79	
1004	Auto Pass Elev, 5000 #x 300 Fpm	EA	214,456.38	
1005	Auto Pass Elev, 3000 #x 400 Fpm	EA	202,499.87	
1006	Auto Pass Elev, 3500 #x 400 Fpm	EA	208,905.88	
1007	Auto Pass Elev, 4000 #x 400 Fpm	EA	214,070.38	
1008	Auto Pass Elev, 5000 #x 400 Fpm	EA	221,802.60	
1009	Auto Pass Elev, 3000 #x 600 Fpm	EA	301,845.85	
1011	Auto Pass Elev, 3500 #x 600 Fpm	EA	370,825.38	
1012	Auto Pass Elev, 4000 #x 600 Fpm	EA	424,352.55	
1013	Auto Pass Elev, 5000 #x 600 Fpm	EA	440,396.52	
1014	Auto Pass Elev, 3000 #x 800 Fpm	EA	320,983.55	
1015	Auto Pass Elev, 3500 #x 800 Fpm	EA	454,858.63	
1016	Auto Pass Elev, 4000 #x 800 Fpm	EA	463,822.01	
1017	Auto Pass Elev, 5000 #x 800 Fpm	EA	479,410.65	

14206 Hydraulic Elevators

14206 1000 Hydraulic Passenger Elevators Baked Enamel Shaft

1001	Hyd Pass Elev, 2000 # x 50 Fpm	EA	42,159.45	
1002	Hyd Pass Elev, 2500 # x 50 Fpm	EA	44,885.94	
1003	Hyd Pass Elev, 3000 # x 50 Fpm	EA	47,724.98	
1004	Hyd Pass Elev, 2000 # x 100 Fpm	EA	44,885.94	
1005	Hyd Pass Elev, 2500 # x 100 Fpm	EA	47,777.57	
1006	Hyd Pass Elev, 3000 # x 100 Fpm	EA	50,602.78	
1007	Hyd Pass Elev, 2000 # x 150 Fpm	EA	50,105.79	
1008	Hyd Pass Elev, 2500 # x 150 Fpm	EA	53,133.82	
1009	Hyd Pass Elev, 3000 # x 150 Fpm	EA	56,191.57	

14206 2000 Hydraulic Freight Elevators Painted Metal Shaft

2001	Hyd Frt Elev, 3000 # x 50 Fpm	EA	61,723.41	
2002	Hyd Frt Elev, 4000 # x 50 Fpm	EA	64,547.70	
2003	Hyd Frt Elev, 6000 # x 50 Fpm	EA	71,192.73	
2004	Hyd Frt Elev, 3000 # x 100 Fpm	EA	66,943.26	
2005	Hyd Frt Elev, 4000 # x 100 Fpm	EA	71,068.27	
2006	Hyd Frt Elev, 6000 # x 100 Fpm	EA	76,472.45	
2007	Hyd Frt Elev, 3000 # x 150 Fpm	EA	73,419.21	
2008	Hyd Frt Elev, 4000 # x 150 Fpm	EA	77,613.22	
2009	Hyd Frt Elev, 6000 # x 150 Fpm	EA	89,501.99	

14207 Small Elevators

14207 1000 Small Elevators, 4 To 6 Passenger Capacity

1001	2 Stop Per Shaft, Electric, Push Small Elevators, 4 To 6 Passenger	EA	38,480.24	
1002	3 Stop Per Shaft, Electric, Push Small Elevators, 4 To 6 Passenger	EA	43,598.95	
1003	4 Stop Per Shaft, Electric, Push Small Elevators, 4 To 6 Passenger	EA	48,828.93	

14210 Freight Elevators

14211 0012 Elevators or lifts

NOTE: Enamel Shaft Doors & Plastic Laminated Trimed Cab, Allowance Of \$4000. Unit Prices Based On A Shaft Of 6 Stops And 6 Openings.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
14211 0449	Hydraulic passenger, standard cab			
0450	Elevators, hydraulic passenger, 2000 lb cap, 3 stop, 50 FPM	EA	42,829.97	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0455	Elevators, hydraulic passenger, 2500 lb cap, 3 stop, 50 FPM	EA	43,249.96	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0460	Elevators, hydraulic passenger, 3000 lb cap, 3 stop, 50 FPM	EA	44,692.99	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0465	Elevators, hydraulic passenger, 2000 lb cap, 3 stop, 100 FPM	EA	52,651.21	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0470	Elevators, hydraulic passenger, 2500 lb cap, 3 stop, 100 FPM	EA	53,728.10	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0475	Elevators, hydraulic passenger, 3000 lb cap, 3 stop, 100 FPM	EA	54,804.99	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0480	Elevators, hydraulic passenger, 2000 lb cap, 3 stop, 150 FPM	EA	49,447.46	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int,add		1,100.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0485	Elevators, hydraulic passenger, 2500 lb cap, 3 stop, 150 FPM	EA	50,039.75	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int, add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0490	Elevators, hydraulic passenger, 3000 lb cap, 3 stop, 150 FPM	EA	50,773.65	
0500	Elev, hydr pass, for each additional 50 fpm over 150 fpm add		1,600.00	
0502	Elev, hydr pass, for each additional 500 lb over 3000 lb, add		1,600.00	
0508	Elev, hydr pass, for bonderized steel door, add		350.00	
0510	Elev, hydr pass, for colored aluminum doors, add		475.00	
0512	Elev, hydr pass, for stainless steel doors, add		2,225.00	
0514	Elev, hydr pass, for cast bronze doors, add		875.00	
0520	Elev, hydr pass, for custom plastic laminated cab interior, add		250.00	
0522	Elev, hydr pass, for cust half plastic lam half sst cab int, add		1,100.00	
0524	Elev, hydr pass, for stainless steel cab interior, add		2,175.00	
0504	Elev, hydr pass, for each additional opening, add	EA	2,889.95	
0506	Elev, hydr pass, for each additional foot of travel, add	LF	302.02	
0516	Elev, hydr pass, for side opening two speed doors, add	OPN	5,795.45	
0518	Elev, hydr pass, for center opening two speed doors, add	OPN	1,929.42	
14211 1304	Hydraulic freight, std freight cab, power doors			
1305	Elevators, hydraulic freight, 3000 lb cap, 3 stop, 50 FPM	EA	46,222.18	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-3,664.66	
1310	Elevators, hydraulic freight, 4000 lb cap, 3 stop, 50 FPM	EA	52,651.21	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,307.56	
1315	Elevators, hydraulic freight, 6000 lb cap, 3 stop, 50 FPM	EA	54,804.99	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,522.94	
1320	Elevators, hydraulic freight, 3000 lb cap, 3 stop, 100 FPM	EA	46,803.70	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-3,722.81	
1325	Elevators, hydraulic freight, 4000 lb cap, 3 stop, 100 FPM	EA	53,728.10	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,415.25	
1330	Elevators, hydraulic freight, 6000 lb cap, 3 stop, 100 FPM	EA	54,804.99	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,522.94	
1335	Elevators, hydraulic freight, 3000 lb cap, 3 stop, 150 FPM	EA	48,451.34	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-3,887.57	
1340	Elevators, hydraulic freight, 4000 lb cap, 3 stop, 150 FPM	EA	55,881.88	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,630.63	
1345	Elevators, hydraulic freight, 6000 lb cap, 3 stop, 150 FPM	EA	56,958.77	
1350	Elev, hydr freight, for each additional 25 fpm over 150 fpm add		1,080.00	
1352	Elev, hydr freight, for each additional 1000 lb over 6000 lb, add		1,800.00	
1358	Elev, hydr freight, for elevator w/ manual door, deduct		-4,738.32	
1354	Elev, hydr freight, for each additional opening, add	EA	2,857.65	
1356	Elev, hydr freight, for each additional foot of travel, add	FT	302.02	
14211 1399	Hydraulic cylinder drilling			
1400	Elevators, drilling for piston, casing included, 18" diameter	FT	54.34	
14211 1481	Electric freight, manual control, std freight cab			
1482	Elevators, elec freight, 3500 lb cap, mnl cont, 6 stop, 50 FPM	EA	90,846.87	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-10,822.74	
1484	Elevators, elec freight, 4000 lb cap, mnl cont, 6 stop, 50 FPM	EA	92,139.14	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,016.59	
1486	Elevators, elec freight, 5000 lb cap, mnl cont, 6 stop, 50 FPM	EA	93,108.34	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,161.97	
1488	Elevators, elec freight, 3500 lb cap, mnl cont, 6 stop, 100 FPM	EA	91,923.76	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-10,984.28	
1490	Elevators, elec freight, 4000 lb cap, mnl cont, 6 stop, 100 FPM	EA	93,431.41	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,210.43	
1492	Elevators, elec freight, 5000 lb cap, mnl cont, 6 stop, 100 FPM	EA	95,692.88	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,549.65	
1494	Elevators, elec freight, 3500 lb cap, mnl cont, 6 stop, 200 FPM	EA	96,231.32	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,630.41	
1496	Elevators, elec freight, 4000 lb cap, mnl cont, 6 stop, 200 FPM	EA	98,169.72	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-11,921.17	
1498	Elevators, elec freight, 5000 lb cap, mnl cont, 6 stop, 200 FPM	EA	99,677.37	
1500	<i>Elev, elec freight, for elevator w/ manual door, deduct</i>		-12,147.32	
1510	Elev, elec freight, for variable voltage control, add	EA	13,594.45	
14211 1604 Electric freight				
NOTE: collective, standard freight cab Rheostatic. Painted Metal Shaft Doors And Steel Painted Cab. Unit Prices Are Based On Shaft Of 8 Stops And 8 Openings W/Power Doors				
1605	Elevators, elec cltv freight, 4000 lb cap, 8 stop, 100 FPM	EA	108,895.69	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
2001	<i>For Each Addtl. 50 Fpm Add Per Story</i>		2,165.00	
2002	<i>For Each Addtl. 500 Lb Add Per Story</i>		619.00	
2003	<i>For Each Addtl. Opening Add Per Story</i>		10,664.00	
2004	<i>For Each Addtl. Stop Add Per Story</i>		5,407.50	
1607	Elevators, elec cltv freight, 6000 lb cap, 8 stop, 100 FPM	EA	114,266.68	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1609	Elevators, elec cltv freight, 8000 lb cap, 8 stop, 100 FPM	EA	119,179.99	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1611	Elevators, elec cltv freight, 4000 lb cap, 8 stop, 150 FPM	EA	109,972.58	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1613	Elevators, elec cltv freight, 6000 lb cap, 8 stop, 150 FPM	EA	114,805.13	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1615	Elevators, elec cltv freight, 8000 lb cap, 8 stop, 150 FPM	EA	119,179.99	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1617	Elevators, elec cltv freight, 4000 lb cap, 8 stop, 200 FPM	EA	110,403.34	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1619	Elevators, elec cltv freight, 6000 lb cap, 8 stop, 200 FPM	EA	115,235.88	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1621	Elevators, elec cltv freight, 8000 lb cap, 8 stop, 200 FPM	EA	119,072.30	
1700	<i>Elev, elec coll freight, for each addl 50 fpm over 200 fpm add</i>		4,050.00	
1702	<i>Elev, elec coll freight, for each addl 4000 lb over 8000 lb, add</i>		4,950.00	
1704	Elev, elec coll freight, for each additional opening, add	EA	4,376.06	
1706	Elev, elec coll freight, for each additional foot of travel,	FT	183.56	
1708	Elev, elec coll freight, for variable voltage control, add	EA	13,594.45	
14211 2080 Electric passenger, cltv, var voltage, std cab				
2081	Elevators, elec pass, 2500 lb cap, var V cltv, 6 stop,150 FPM	EA	104,846.44	
2100	<i>Elev,elec pass,for each addl 50 fpm over 300 up to 400 fpm add</i>		1,400.00	
2102	<i>Elev,elec pass,var V coll,for each addl 500 lb over 4000 lb, add</i>		1,725.00	
2108	<i>Elev,elec pass,var V coll,for bonderized steel door, add</i>		350.00	
2110	<i>Elev,elec pass,var V coll,for colored aluminum doors, add</i>		475.00	
2112	<i>Elev,elec pass,var V coll,for stainless steel doors, add</i>		690.00	
2114	<i>Elev,elec pass,var V coll,for cast bronze doors, add</i>		875.00	
2120	<i>Elev,elec pass,for custom plastic laminated cab intr, add</i>		250.00	
2122	<i>Elev,pass, for cust half plastic lam half sst cab interior, add</i>		1,100.00	
2124	<i>Elev,elec pass,var V coll,for stainless steel cab interior, add</i>		2,175.00	
2082	Elevators, elec pass, 3000 lb cap, var V cltv, 6 stop,150 FPM	EA	106,515.62	
2100	<i>Elev,elec pass,for each addl 50 fpm over 300 up to 400 fpm add</i>		1,400.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2083	Elevators, elec pass, 4000 lb cap, var V cltv, 6 stop, 150 FPM	EA	108,184.80	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2084	Elevators, elec pass, 2500 lb cap, var V cltv, 6 stop, 200 FPM	EA	106,246.40	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2085	Elevators, elec pass, 3000 lb cap, var V cltv, 6 stop, 200 FPM	EA	107,080.99	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2086	Elevators, elec pass, 4000 lb cap, var V cltv, 6 stop, 200 FPM	EA	109,584.76	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2087	Elevators, elec pass, 2500 lb cap, var V cltv, 6 stop, 250 FPM	EA	110,338.58	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2088	Elevators, elec pass, 3000 lb cap, var V cltv, 6 stop, 250 FPM	EA	111,200.09	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2089	Elevators, elec pass, 4000 lb cap, var V cltv, 6 stop, 250 FPM	EA	112,061.60	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2090	Elevators, elec pass, 2500 lb cap, var V cltv, 6 stop, 300 FPM	EA	113,569.25	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2091	Elevators, elec pass, 3000 lb cap, var V cltv, 6 stop, 300 FPM	EA	115,184.58	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2092	Elevators, elec pass, 4000 lb cap, var V cltv, 6 stop, 300 FPM	EA	116,153.79	
2100	Elev, elec pass, for each addl 50 fpm over 300 up to 400 fpm add		1,400.00	
2102	Elev, elec pass, var V coll, for each addl 500 lb over 4000 lb, add		1,725.00	
2108	Elev, elec pass, var V coll, for bonderized steel door, add		350.00	
2110	Elev, elec pass, var V coll, for colored aluminum doors, add		475.00	
2112	Elev, elec pass, var V coll, for stainless steel doors, add		690.00	
2114	Elev, elec pass, var V coll, for cast bronze doors, add		875.00	
2120	Elev, elec pass, for custom plastic laminated cab intr, add		250.00	
2122	Elev, pass, for cust half plastic lam half sst cab interior, add		1,100.00	
2124	Elev, elec pass, var V coll, for stainless steel cab interior, add		2,175.00	
2104	Elev, elec pass, var V coll, for each additional opening, add	EA	4,720.67	
2106	Elev, elec pass, var V coll, for each additional foot of travel,	LF	183.56	
2116	Elev, elec pass, var V coll, for side opening two speed doors,	OPN	5,795.45	
2118	Elev, elec pass, var V coll, for center opening two speed doors,	OPN	1,929.42	
14211 2181	Electric passenger, automatic, standard cab			
2182	Elevators, elec pass, 3000 lb cap, automatic, 8 stop, 300 FPM	EA	125,210.58	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2184	Elevators, elec pass, 3500 lb cap, automatic, 8 stop, 300 FPM	EA	125,533.64	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2186	Elevators, elec pass, 4000 lb cap, automatic, 8 stop, 300 FPM	EA	126,287.47	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2188	Elevators, elec pass, 5000 lb cap, automatic, 8 stop, 300 FPM	EA	127,364.36	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2190	Elevators, elec pass, 3000 lb cap, automatic, 8 stop, 400 FPM	EA	136,356.39	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2192	Elevators, elec pass, 3500 lb cap, automatic, 8 stop, 400 FPM	EA	137,217.90	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2194	Elevators, elec pass, 4000 lb cap, automatic, 8 stop, 400 FPM	EA	137,971.72	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2196	Elevators, elec pass, 5000 lb cap, automatic, 8 stop, 400 FPM	EA	139,694.75	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2198	Elevators, elec pass, 3000 lb cap, automatic, 8 stop, 600 FPM	EA	145,940.71	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2200	Elevators, elec pass, 3500 lb cap, automatic, 8 stop, 600 FPM	EA	146,802.22	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2202	Elevators, elec pass, 4000 lb cap, automatic, 8 stop, 600 FPM	EA	147,556.05	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2204	Elevators, elec pass, 5000 lb cap, automatic, 8 stop, 600 FPM	EA	149,171.38	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2206	Elevators, elec pass, 3000 lb cap, automatic, 8 stop, 800 FPM	EA	154,663.52	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2208	Elevators, elec pass, 3500 lb cap, automatic, 8 stop, 800 FPM	EA	155,525.03	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2210	Elevators, elec pass, 4000 lb cap, automatic, 8 stop, 800 FPM	EA	156,924.99	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2212	Elevators, elec pass, 5000 lb cap, automatic, 8 stop, 800 FPM	EA	158,648.01	
2300	Elev, pass, auto, for each addl 100 fpm over 800 up to 1000 fpm add		4,000.00	
2302	Elev, elec pass, auto, for each additional 500 lb over 5000 lb, add		1,725.00	
2310	Elev, elec pass, auto, for bonderized steel door, add		350.00	
2312	Elev, elec pass, auto, for colored aluminum doors, add		475.00	
2314	Elev, elec pass, auto, for stainless steel doors, add		690.00	
2316	Elev, elec pass, auto, for cast bronze doors, add		875.00	
2320	Elev, elec pass, auto, for custom plastic laminated cab intr, add		250.00	
2322	Elev, hydr pass, for cust half plastic lam half sst cab intr, add		1,100.00	
2324	Elev, elec pass, auto, for stainless steel cab interior, add		2,175.00	
2304	Elev, elec pass, auto, for each additional opening, add	EA	4,720.67	
2306	Elev, elec pass, auto, for each additional foot of travel, add	LF	183.56	
2308	Elev, elec pass, auto, for each by-passed floor, add	OPN	997.09	
2318	Elev, elec pass, auto, for center opening two speed doors, add	OPN	1,929.42	
14211 7349	Electric Passenger, pushbutton, 4 to 6 passenger			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7350	Elevators, elec, small, 2 stop, 4 to 6 passenger, pushbutton	EA	38,588.30	
7355	Elevators, elec, small, 3 stop, 4 to 6 passenger, pushbutton	EA	45,961.88	
7360	Elevators, elec, small, 4 stop, 4 to 6 passenger, pushbutton	EA	53,385.31	
14211 7709	Residential chair lift/stair climber			
7710	Elevators, residential chair lift/stair climber, per story	EA	3,957.96	99.48
14215	Elevator Maintenance			
14215 1000	Elevator Maintenance			
1001	Regular Elevator Inspection, Electric	EA	292.06	
1002	Elevator Servicing, Labor Only Manhours Based On Crew Size	HR	36.50	
1003	Elevator Maintenance Contract For Passenger Elevator	MD	375.60	
1004	Regular Elevator Inspection, Hydraulic	EA	69.36	
14215 2000	Elevator Modernization			
2001	4" Piston Hoisting Unit Up To 6 Stories	EA	17,176.51	
2002	New Walls & Platform Plastic Laminate	EA	7,225.60	
2003	New Walls & Platform Plastic Laminate W Shell	EA	10,483.98	
2004	New Lighting	EA	451.56	
2005	New Doors, Baked Enamel	EA	7,320.58	
2006	New Reopening Device, Manual	EA	1,765.39	
2007	New Reopening Device, Automatic	EA	10,443.16	
2008	Convert From Manual To Automatic	EA	15,746.37	
2009	New Controls	EA	15,950.48	
2011	New Door Opening, Excluding Buildback	EA	4,291.01	
2012	Reprogram Existing Controller, Signal Fixtures	EA	11,254.04	
14315 1000	Maintenance			
1001	Regular Inspection	EA	82.66	
1002	Hoist or Crane Servicing, Labor Only, Manhours Based On Crew	HR	21.08	
1003	Hoist or Crane Maintenance Contract	MDN	246.08	
14400	Lifts			
14401	Personnel Lifts			
14401 1000	Personnel Lifts Electrically Operated 1 Or 2			
	Note: Person Lift By Vertical Belt WAttached Foot Platforms Average Of 36 In Dia. Openings			
1001	Pers Lifts, Elec, 1-2 Pers, 3 Stops	EA	15,858.06	
1002	Pers Lifts, Elec, 1-2 Pers, 5 Stops	EA	16,681.85	
1003	Pers Lifts, Elec, 1-2 Pers, 7 Stops	EA	17,505.65	
14402 2000	Wheelchair Lift			
2001	Wheelchair Porch Lift	EA	9,354.70	
14405	Commercial Lifts			
14405 1000	Commercial Lifts Vertical Transport Of Office Papers, Mails, Parcels, Etc.			
1001	Commercial Lift, 100#Cap Hand Opr Vert Transport Of Office Papers	EA	3,661.67	
1002	Commercial Lift, 100#Cap Elec Opr Vert Transport Of Office Papers	EA	7,209.40	
1003	Commercial Lift, 150#Cap Hand Opr Vert Transport Of Office Papers	EA	3,806.87	
1004	Commercial Lift, 150#Cap Elec Opr Vert Transport Of Office Papers	EA	7,930.22	
14410	Lifts			
14416 0199	Hydraulic			
14416 0199	Auto/truck			
0200	Lifts, hydraulic, auto/truck, double post, 9000 lb frame	EA	6,215.08	187.82
0300	Lifts, hydraulic, auto/truck, double post, 12000 lb frame	EA	9,785.69	411.66
0400	Lifts, hydraulic, auto/truck, double post, 26000 lb frame	EA	27,277.44	703.92
0500	Lifts, hydraulic, auto/truck, four post, 50000 lb frame	EA	57,481.85	1,113.21
14500	Material Handling Systems			
14550	Conveyors			
14550 9000	Vertical Conveyor			
9001	Vertical conveyor, auto selective, to 10 floors, base price	FLO	25,174.72	
9002	Vertical conveyor, add for electrical hook-up and testing	FLO	141.84	
14551 0011	Material handling			
14551 4399	Overhead monorail system			
4400	Mtl handling, overhead monorail system w/auto switches & stops	LF	170.15	
4500	Mtl handling, overhead monorail system access, monorail carts	EA	3,239.24	

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
14561 Linen Chutes				
14561 1000 Linen Chutes				
1001	Linen Chutes, SST 18" (46cm) Dia W /Supports	LF	84.78	
1002	Linen Chutes, SST 24" (61cm) Dia W /Supports	LF	115.90	
1003	Linen Chutes, SST 30" (76cm) Dia W /Supports	LF	124.16	
1004	Linen Chute Hopper	EA	2,124.36	
1005	Linen Chute Skylight	EA	1,000.98	
1006	Linen Chutes, Sprinkler Unit @Top	EA	350.27	
14564 Trash Chutes				
14564 1000 Trash Chutes				
1001	18" Dia Galv Trash Chute, 18 Ga (46cm)Dia, Duct w/Supports	LF	10.10	
1002	24" Dia Galv Trash Chute, 18 Ga (61cm)Dia, Duct w/Supports	LF	13.28	
1003	30" Dia Galv Trash Chute, 18 Ga (76cm)Dia, Duct w/Supports	LF	14.68	
1004	36" Dia Galv Trash Chute, 18 Ga (91cm)Dia, Duct w/Supports	LF	23.23	
1005	Trash Chutes, Hopper	EA	303.68	
1006	Trash Chutes, Skylight	EA	122.59	
1007	Trash Chutes, Sprinkler Unit @Top	EA	68.32	
1008	Trash Chutes, Sprinkler Unit At I ntake Hopper	EA	15.54	
1009	Refuse Type Bottom Storage Hoppe r Unit	EA	218.28	
1011	Refuse Bottom Hopper, Aluminum S teel, 18" Diameter	EA	1,061.60	
14568 1000 Gravity Type 2" Rollers, 3" O.C.				
14568 1100 50 Lb/LF Capacity				
1101	15" Wide Conveyers	LF	345.62	
1102	27" Wide Conveyers	LF	398.27	
14568 1200 100 Lb/LF Capacity				
1201	15" Wide Conveyor	LF	387.40	
1202	27" Wide Conveyor	LF	465.18	
1203	33" Wide Conveyor	LF	484.71	
14568 2000 Horizontal Belt, Center Drive, 45 F.P.M				
2001	16" Belt, Horz. Conveyor	LF	76.68	
2002	24" Belt, Horz. Conveyor	LF	89.21	
14568 3000 Inclined Belt, 25" Incline Wth Horizontal Load				
3001	14" Belt Inclined Conveyor	LF	197.21	
3002	18" Belt Inclined Conveyor	LF	247.16	
3003	24" Belt Inclined Conveyor	LF	301.18	
14568 4000 Overhead Conveyor				
4001	Overhead Conveyor, Automatic, Chain, 125 Lb/LF Cap.	LF	78.91	
14580 8000 Pneumatic Tube System				
8001	1 tube, 2 stations, blower, 100 ' L, stock, 3" dia	TOT	5,743.47	
8002	1 tube, 2 stations, blower, 100 ' L, stock, 4" dia	TOT	6,598.09	
8003	twin tube, 2 sta. or more, cvnt l sys, 2-1/2" rnd	LF	11.49	
8004	twin tube, 2 sta. or more, cvnt l sys, 3" rnd	LF	13.50	
8005	twin tube, 2 sta. or more, cvnt l sys, 4" rnd	LF	14.61	
8006	twin tube, 2 sta. or more, cvnt l sys, 4" x 7" oval	LF	21.12	
8007	Pneumatic tube system, twin tube , add for blower	SYS	4,076.16	
8008	Pneumatic tube system, twin tube , for each round station, add	EA	462.37	
8009	Pneumatic tube system, twin tube , for each oval station, add	EA	462.37	
8010	alternate pricing method: base cost, minimum	TOT	5,054.54	
8011	alternate pricing method: base cost, maximum	TOT	10,129.18	
8012	alt price method:base cost,plus tot sys lg,add,min	LF	7.16	
8013	alt price method:base cost,plus tot sys lg,add,max	LF	20.80	
8014	Pneumatic tube sys, comply auto matic sys, 4" rnd, 15 to 50 sta	STA	15,875.74	
8015	comply automatic sys, 4" rnd, 51 to 144 stas	STA	12,297.55	
8016	comply auto sys, 6" rnd or 4"x7" oval, 15 to 50 stas	STA	19,806.88	
8017	comply auto sys, 6"rnd or 4"x7" oval, 51 to 144 stas	STA	16,697.60	

14600 Hoists & Cranes

14610 Hoists & Cranes

14611 0010 Mterial handling

14611 3109 Hbists

14611 3109 Air powered hoist, beans not included

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3110	Material handling, air powered hoist, 500 lb cap	EA	2,254.77	
3120	Material handling, air powered hoist, 1000 lb cap	EA	2,296.69	
3130	Material handling, air powered hoist, 2000 lb cap	EA	2,466.56	
3140	Material handling, air powered hoist, 4000 lb cap	EA	3,705.21	
3160	Material handling, air powered hoist, 6000 lb cap	EA	5,807.22	
3180	Material handling, air powered hoist, 8000 lb cap	EA	5,842.85	
3190	Material handling, air powered hoist, 10000 lb cap	EA	5,859.17	
14611 3199	Industrial chain hoist, no beams, electric opn			
3200	Matl handling, 500 lb cap, light/medium duty, incl chain	EA	988.35	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-665.47	
3299	Matl handling, incl hoists, for structural steel beams, add		195.73	
3205	Matl handling, 1000 lb cap, light/medium duty, incl chain	EA	1,780.86	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-1,324.22	
3299	Matl handling, incl hoists, for structural steel beams, add		389.48	
3207	Matl handling, 2000 lb cap, light/medium duty, incl chain	EA	2,064.16	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-1,550.92	
3299	Matl handling, incl hoists, for structural steel beams, add		456.15	
3215	Matl handling, 4000 lb cap, light/medium duty, incl chain	EA	2,612.52	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-1,987.54	
3299	Matl handling, incl hoists, for structural steel beams, add		584.57	
3220	Matl handling, 6000 lb cap, light/medium duty, incl chain	EA	3,423.34	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-2,661.86	
3299	Matl handling, incl hoists, for structural steel beams, add		782.90	
3225	Matl handling, 7500 lb cap, light/medium duty, incl chain	EA	4,733.07	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-3,761.20	
3299	Matl handling, incl hoists, for structural steel beams, add		1,106.24	
3227	Matl handling, 10000 lb cap, light/medium duty, incl chain	EA	4,709.23	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-3,711.47	
3299	Matl handling, incl hoists, for structural steel beams, add		1,091.61	
3230	Matl handling, 15000 lb cap, light/medium duty, incl chain	EA	6,268.66	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-5,021.65	
3299	Matl handling, incl hoists, for structural steel beams, add		1,476.96	
3235	Matl handling, 20000 lb cap, light/medium duty, incl chain	EA	7,002.11	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-5,630.36	
3299	Matl handling, incl hoists, for structural steel beams, add		1,655.99	
3240	Matl handling, 25000 lb cap, light/medium duty, incl chain	EA	12,434.33	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-10,233.69	
3299	Matl handling, incl hoists, for structural steel beams, add		3,009.91	
3245	Matl handling, 30000 lb cap, light/medium duty, incl chain	EA	12,847.91	
3250	Matl handling, incl hoist, light/med, for hand operation, deduct		-10,570.08	
3299	Matl handling, incl hoists, for structural steel beams, add		3,108.85	
14611 3254	Industrial wire rope hoist			
3255	Matl handling, 1000 lb cap, heavy duty, incl wire rope hoist	EA	7,777.34	
3299	Matl handling, incl hoists, for structural steel beams, add		1,888.60	
3260	Matl handling, 2000 lb cap, heavy duty, incl wire rope hoist	EA	7,793.93	
3299	Matl handling, incl hoists, for structural steel beams, add		1,888.60	
3265	Matl handling, 3000 lb cap, heavy duty, incl wire rope hoist	EA	8,056.29	
3299	Matl handling, incl hoists, for structural steel beams, add		1,949.71	
3270	Matl handling, 4000 lb cap, heavy duty, incl wire rope hoist	EA	8,612.60	
3299	Matl handling, incl hoists, for structural steel beams, add		2,084.59	
3275	Matl handling, 5000 lb cap, heavy duty, incl wire rope hoist	EA	9,633.36	
3299	Matl handling, incl hoists, for structural steel beams, add		2,337.66	
3280	Matl handling, 6000 lb cap, heavy duty, incl wire rope hoist	EA	10,144.21	
3299	Matl handling, incl hoists, for structural steel beams, add		2,463.12	
3290	Matl handling, 10000 lb cap, heavy duty, incl wire rope hoist	EA	10,462.34	
3299	Matl handling, incl hoists, for structural steel beams, add		2,529.89	
3292	Matl handling, 15000 lb cap, heavy duty, incl wire rope hoist	EA	10,984.36	
3299	Matl handling, incl hoists, for structural steel beams, add		2,655.88	
3294	Matl handling, 20000 lb cap, heavy duty, incl wire rope hoist	EA	12,159.34	
3299	Matl handling, incl hoists, for structural steel beams, add		2,945.30	
3296	Matl handling, 25000 lb cap, heavy duty, incl wire rope hoist	EA	12,615.25	
3299	Matl handling, incl hoists, for structural steel beams, add		3,055.14	
3297	Matl handling, 30000 lb cap, heavy duty, incl wire rope hoist	EA	16,286.96	
3299	Matl handling, incl hoists, for structural steel beams, add		3,968.61	
3298	Matl handling, incl hoist, for structural steel beams, add	LB	0.71	
3299	Matl handling, incl hoists, for structural steel beams, add		0.15	
14611 3599	Ash hoist			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3600	Material handling, ash hoist, hand operated, 250 lb cap	EA	2,593.96	
3700	Material handling, 250 lb cap, ash hoist, electrically operated	EA	4,526.90	
14660 0010	Overhead bridge cranes			
Note: Note Under Hung Hoist, Elec Opn. Overhead Traveling Bridge Crane Under Hung-Hoist Included Ac-Electrically Pendant Operated				
14660 0099	1 girder			
0100	Overhead bridge crane, 1 girder, 3 ton, 20' span	EA	15,355.88	
0125	Overhead bridge crane, 1 girder, 5 ton, 20' span	EA	16,694.46	
0150	Overhead bridge crane, 1 girder, 7.5 ton, 20' span	EA	19,623.06	
0175	Overhead bridge crane, 1 girder, 10 ton, 20' span	EA	25,869.28	
0200	Overhead bridge crane, 1 girder, 15 ton, 20' span	EA	32,815.22	
0225	Overhead bridge crane, 1 girder, 3 ton, 30' span	EA	15,917.48	
0250	Overhead bridge crane, 1 girder, 5 ton, 30' span	EA	17,375.59	
0275	Overhead bridge crane, 1 girder, 7.5 ton, 30' span	EA	20,569.11	
0300	Overhead bridge crane, 1 girder, 10 ton, 30' span	EA	26,710.86	
0325	Overhead bridge crane, 1 girder, 15 ton, 30' span	EA	34,201.71	
14660 0349	2 girder			
0350	Overhead bridge crane, 2 girder, 3 ton, 40' span	EA	26,950.33	
0375	Overhead bridge crane, 2 girder, 5 ton, 40' span	EA	28,094.53	
0400	Overhead bridge crane, 2 girder, 7.5 ton, 40' span	EA	30,548.22	
0425	Overhead bridge crane, 2 girder, 10 ton, 40' span	EA	35,940.64	
0450	Overhead bridge crane, 2 girder, 15 ton, 40' span	EA	47,664.74	
0475	Overhead bridge crane, 2 girder, 25 ton, 40' span	EA	56,831.76	
0500	Overhead bridge crane, 2 girder, 3 ton, 50' span	EA	30,331.23	
0525	Overhead bridge crane, 2 girder, 5 ton, 50' span	EA	31,421.58	
0550	Overhead bridge crane, 2 girder, 7.5 ton, 50' span	EA	33,448.82	
0575	Overhead bridge crane, 2 girder, 10 ton, 50' span	EA	38,835.86	
0600	Overhead bridge crane, 2 girder, 15 ton, 50' span	EA	49,758.21	
0625	Overhead bridge crane, 2 girder, 25 ton, 50' span	EA	59,344.68	
14660 0649	Rail with splice bars			
0650	Overhead bridge crane rail w/splice bars	LB	0.69	
14660 1000	Single Girder 20Ft. Span			
1001	Ovhd Br Crane, 3 Tn,1 Girder 20' Overhead Traveling Bridge Crane	EA	6,830.31	
1002	Ovhd Br Crane, 5 Tn,1 Girder 20' Overhead Traveling Bridge Crane	EA	7,169.97	
1003	Ovhd Br Crane,10 Tn,1 Girder 20' Overhead Traveling Bridge Crane	EA	7,688.76	
1004	Ovhd Br Crane,15 Tn,1 Girder 20' Overhead Traveling Bridge Crane	EA	8,028.42	
1005	Ovhd Br Crane,7.5Tn,1 Girder 20' Overhead Traveling Bridge Crane	EA	7,509.61	
14660 2000	Single Girder 30Ft. Span			
2001	Ovhd Br Crane, 3 Tn,1 Girder 30' Overhead Traveling Bridge Crane	EA	7,509.61	
2002	Ovhd Br Crane, 5 Tn,1 Girder 30' Overhead Traveling Bridge Crane	EA	7,849.27	
2003	Ovhd Br Crane,10 Tn,1 Girder 30' Overhead Traveling Bridge Crane	EA	8,707.70	
2004	Ovhd Br Crane,15 Tn,1 Girder 30' Overhead Traveling Bridge Crane	EA	8,707.70	
2005	Ovhd Br Crane,7.5Tn,1 Girder 30' Overhead Traveling Bridge Crane	EA	8,188.91	
14660 3000	Double Girder 40Ft. Span			
3001	Ovhd Br Crane, 3 Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	23,967.32	
3002	Ovhd Br Crane, 5 Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	23,967.32	
3003	Ovhd Br Crane,10 Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	28,475.24	
3004	Ovhd Br Crane,15 Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	32,979.70	
3005	Ovhd Br Crane,25 Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	35,153.07	
3006	Ovhd Br Crane,7.5Tn,2 Girder 40' Overhead Traveling Bridge Crane	EA	26,593.10	
14660 4000	Double Girder 50Ft. Span			
4001	Ovhd Br Crane,3 Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	26,875.76	
4002	Ovhd Br Crane,5 Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	28,168.41	
4003	Ovhd Br Crane,10 Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	32,887.37	
4004	Ovhd Br Crane,15 Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	37,015.90	
4005	Ovhd Br Crane,25 Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	39,373.95	
4006	Ovhd Br Crane,7.5Tn,2 Girder 50' Overhead Traveling Bridge Crane	EA	32,712.44	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15049 Water Treatment Plants				
15049 1000 Package Plants				
1001	360 GPD Pkgd Water Treatment Plant	EA	2,259.45	
1002	720 GPD Pkgd Water Treatment Plant	EA	2,768.46	
1003	2880 GPD Pkgd Water Treatment Plant	EA	4,577.32	
1004	6480 GPD Pkgd Water Treatment Plant	EA	7,232.81	
1005	12,240 GPD Pkgd Water Treatment Plant	EA	12,180.21	
1006	24,480 GPD Pkgd Water Treatment Plant	EA	22,269.78	
1007	36,000 GPD Pkgd Water Treatment Plant	EA	33,756.57	
15050 Organic Water System Equipment				
15050 1000 Organic Water System Equipment				
Note: Milli-Q Or Equal. Mounted And Final Connections, No Piping Included.				
1001	#ZD60115, Milli-Q UV Plus Ultra- low Organic Water Sys. W/o Qpak	EA	7,719.71	
1002	P31708 Spare UV Lamp W/ Quartz Sleeve	EA	465.39	
1003	CMQK05R1 Purification Kit	EA	565.75	
1004	CPMQK05D2 Purification Kit	EA	565.75	
1005	CPMQ004R1 Purification Pack Qpak 1	EA	510.48	
1006	CPMQ004D2 Purification Pack Qpak 2	EA	510.48	
1007	MPGL04SK2 Millpak Filter Unit	EA	117.80	
1008	CDEXPOLUV Polisher Cartridge	EA	85.80	
1009	ZFMQ000PR Inlet Pressure Regulator or Accessories	EA	209.42	
1011	ZFMQ00WMB System Wall Mounting Bracket Accessories	EA	283.61	
15051 Commercial Service Centrifugal Separators				
15051 1000 Commercial Service Centrifugal Separators For Wa				
1001	4" Unit 200-350 Gpm	EA	4,882.73	
1002	5" Unit 320-540 Gpm	EA	6,263.55	
1003	6" Unit 510-840 Gpm	EA	6,405.32	
1004	8" Unit 820-1360 Gpm	EA	8,196.17	
15051 2000 Commercial Service Centrifugal Separators For Wa				
2001	4" Unit 200-350 Gpm	EA	7,051.28	
2002	5" Unit 320-540 Gpm	EA	8,581.43	
2003	6" Unit 510-840 Gpm	EA	8,924.47	
2004	8" Unit 820-1360 Gpm	EA	10,838.68	
15052 Water Filters				
15052 1000 Filter, High Flow Water w/Cartridges, 5 Micron,				
1001	Filter 24 GPM Water, 5 Micron	EA	914.53	
1002	Filter 48 GPM Water, 5 Micron	EA	1,063.37	
1003	Filter 72 GPM Water, 5 Micron	EA	1,145.39	
15053 Chemical Waste Drainage System				
15053 1000 Neutralization Tank				
15053 4000 Acid Neutralization Tank				
4001	30 Gal Cap Acid Neut Tank	EA	1,003.49	
4002	55 Gal Cap Acid Neut Tank	EA	1,174.74	
4003	100 Gal Cap Acid Neut Tank	EA	1,358.78	
15054 Special Piping Systems				
15054 1000 Tfe Lined Piping System				
15054 1100 Tfe Lined Pipe & Fittings				
15054 1110 Pipe				
1111	3/4" Tfe Pipe	LF	60.75	
1112	1" Tfe Pipe	LF	90.95	
1113	1-1/4" Tfe Pipe	LF	101.58	
1114	1-1/2" Tfe Pipe	LF	112.12	
1115	2" Tfe Pipe	LF	122.69	
1116	2-1/2" Tfe Pipe	LF	161.96	
1117	3" Tfe Pipe	LF	194.64	
1118	4" Tfe Pipe	LF	280.51	
1119	6" Tfe Pipe	LF	526.20	
1121	8" Tfe Pipe	LF	941.19	
15054 1130 90 Degree Elbows				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1131	3/4" 90 Degree Elbow, Tfe	EA	411.53	
1132	1" 90 Degree Elbow, Tfe	EA	413.29	
1133	1-1/4" 90 Deg Elbow, Tfe	EA	430.24	
1134	1-1/2" 90 Deg Elbow, Tfe	EA	431.88	
1135	2" 90 Degree Elbow, Tfe	EA	495.98	
1136	2-1/2" 90 Deg Elbow, Tfe	EA	625.15	
1137	3" 90 Degree Elbow, Tfe	EA	754.11	
1138	4" 90 Degree Elbow, Tfe	EA	1,125.55	
1139	6" 90 Degree Elbow, Tfe	EA	1,767.06	
1141	8" 90 Degree Elbow, Tfe	EA	2,779.87	
15054 1150 45 Degree Elbows				
1151	3/4" 45 Degree Elbow, Tfe	EA	347.61	
1152	1" 45 Degree Elbow, Tfe	EA	349.37	
1153	1-1/4" 45 Deg Elbow, Tfe	EA	394.53	
1154	1-1/2" 45 Deg Elbow, Tfe	EA	396.17	
1155	2" 45 Degree Elbow, Tfe	EA	454.61	
1156	2-1/2" 45 Deg Elbow, Tfe	EA	606.36	
1157	3" 45 Degree Elbow, Tfe	EA	755.98	
1158	4" 45 Degree Elbow, Tfe	EA	995.84	
1159	6" 45 Degree Elbow, Tfe	EA	1,753.91	
1161	8" 45 Degree Elbow, Tfe	EA	2,688.85	
15054 1170 Tees				
1171	3/4" Tee, Tfe	EA	676.52	
1172	1" Tee, Tfe	EA	680.03	
1173	1-1/4" Tee, Tfe	EA	800.52	
1174	1-1/2" Tee, Tfe	EA	804.09	
1175	2" Tee, Tfe	EA	916.53	
1176	2-1/2" Tee, Tfe	EA	1,071.81	
1177	3" Tee, Tfe	EA	1,225.20	
1178	4" Tee, Tfe	EA	1,598.49	
1179	6" Tee, Tfe	EA	2,184.61	
1181	8" Tee, Tfe	EA	4,211.86	
15054 1190 Cross				
1191	3/4" Cross, Tfe	EA	960.30	
1192	1" Cross, Tfe	EA	964.05	
1193	1-1/4" Cross, Tfe	EA	1,172.71	
1194	1-1/2" Cross, Tfe	EA	1,175.83	
1195	2" Cross, Tfe	EA	1,324.69	
1196	2-1/2" Cross, Tfe	EA	1,522.90	
1197	3" Cross, Tfe	EA	2,019.36	
1198	4" Cross, Tfe	EA	2,260.51	
1199	6" Cross, Tfe	EA	4,015.49	
1211	8" Cross, Tfe	EA	5,093.97	
15054 1220 Reducers				
1221	1" Reducer, Tfe	EA	569.32	
1222	1-1/4" Reducer, Tfe	EA	573.11	
1223	1-1/2" Reducer, Tfe	EA	574.75	
1224	2" Reducer, Tfe	EA	676.45	
1225	2-1/2" Reducer, Tfe	EA	779.30	
1226	3" Reducer, Tfe	EA	866.89	
1227	4" Reducer, Tfe	EA	1,133.08	
1228	6" Reducer, Tfe	EA	1,569.67	
1229	8" Reducer, Tfe	EA	2,549.72	
15054 1240 Unions				
1241	3/4" Union	EA	515.31	
1242	1" Union	EA	590.86	
1243	1-1/4" Union	EA	1,160.82	
1244	1-1/2" Union	EA	1,314.66	
1245	2" Union	EA	1,778.94	
1246	2-1/2" Union	EA	2,588.26	
1247	3" Union	EA	3,305.12	
1248	4" Union	EA	5,134.77	
1249	6" Union	EA	6,880.27	
1251	8" Union	EA	11,321.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15054 1260 Blind Flanges				
1261	3/4" Blind Flanges	EA	71.18	
1262	1" Blind Flange	EA	74.69	
1263	1-1/4" Blind Flange	EA	84.28	
1264	1-1/2" Blind Flange	EA	87.85	
1265	2" Blind Flange	EA	100.66	
1266	2-1/2" Blind Flange	EA	126.22	
1267	3" Blind Flange	EA	149.88	
1268	4" Blind Flange	EA	188.56	
1269	6" Blind Flange	EA	284.02	
1271	8" Blind Flange	EA	423.84	
15054 1280 Filler Flanges				
1282	1" Filler Flange	EA	193.13	
1283	1-1/4" Filler Flange	EA	217.74	
1284	1-1/2" Filler Flange	EA	243.88	
1285	2" Filler Flange	EA	298.05	
1286	2-1/2" Filler Flange	EA	370.61	
1287	3" Filler Flange	EA	443.15	
1288	4" Filler Flange	EA	562.66	
1289	6" Filler Flange	EA	706.99	
1291	8" Filler Flange	EA	1,094.97	
15054 1700 Lined Gate Valves				
1702	1" Flanged Gate Valve	EA	970.79	
1703	1-1/4" Flg Gate Valve	EA	1,100.72	
1704	1-1/2" Flg Gate Valve	EA	1,248.97	
1705	2" Flanged Gate Valve	EA	1,483.93	
1706	2-1/2" Flg Gate Valve	EA	1,970.56	
1707	3" Flanged Gate Valve	EA	2,451.76	
1708	4" Flanged Gate Valve	EA	3,051.59	
1709	6" Flanged Gate Valve	EA	4,934.95	
1711	8" Flanged Gate Valve	EA	10,409.21	
15054 1800 Lined Check Valves				
1802	1" Flanged Check Valve	EA	1,101.89	
1803	1-1/4" Flg Check Valve	EA	1,248.72	
1804	1-1/2" Flg Check Valve	EA	1,416.14	
1805	2" Flanged Check Valve	EA	1,681.41	
1806	2-1/2" Flg Check Valve	EA	2,233.24	
1807	3" Flanged Check Valve	EA	2,779.64	
1808	4" Flanged Check Valve	EA	3,460.40	
1809	6" Flanged Check Valve	EA	5,605.06	
1811	8" Flanged Check Valve	EA	11,845.14	
15054 1900 Lined Plug Valves				
1902	1" Flanged Plug Valve	EA	963.48	
1903	1-1/4" Flg Plug Valve	EA	1,093.10	
1904	1-1/2" Flg Plug Valve	EA	1,239.08	
1905	2" Flanged Plug Valve	EA	1,472.66	
1906	2-1/2" Flg Plug Valve	EA	1,956.29	
1907	3" Flanged Plug Valve	EA	2,434.49	
1908	4" Flanged Plug Valve	EA	3,030.15	
1909	6" Flanged Plug Valve	EA	4,900.05	
1911	8" Flanged Plug Valve	EA	9,769.60	
15054 2000 Pp Lined Piping System				
15054 2100 Pp Lined Pipe & Fittings				
15054 2110 Pipe				
2111	3/4" Pp Pipe	LF	32.63	
2112	1" Pp Pipe	LF	32.75	
2113	1-1/4" Pp Pipe	LF	44.40	
2114	1-1/2" Pp Pipe	LF	44.44	
2115	2" Pp Pipe	LF	42.60	
2116	2-1/2" Pp Pipe	LF	62.59	
2117	3" Pp Pipe	LF	74.74	
2118	4" Pp Pipe	LF	110.19	
2119	6" Pp Pipe	LF	190.19	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2121	8" Pp Pipe	LF	295.71	
15054 2130	90 Degree Elbows			
2131	3/4" 90 Degree Elbow, Pp	EA	251.31	
2132	1" 90 Degree Elbow, Pp	EA	253.07	
2133	1-1/4" 90 Deg Elbow, Pp	EA	264.81	
2134	1-1/2" 90 Deg Elbow, Pp	EA	266.45	
2135	2" 90 Degree Elbow, Pp	EA	306.70	
2136	2-1/2" 90 Deg Elbow, Pp	EA	388.18	
2137	3" 90 Degree Elbow, Pp	EA	469.44	
2138	4" 90 Degree Elbow, Pp	EA	696.33	
2139	6" 90 Degree Elbow, Pp	EA	1,085.95	
2141	8" 90 Degree Elbow, Pp	EA	1,702.32	
15054 2150	45 Degree Elbows			
2151	3/4" 45 Degree Elbow, Pp	EA	221.88	
2152	1" 45 Degree Elbow, Pp	EA	223.64	
2153	1-1/4" 45 Deg Elbow, Pp	EA	253.52	
2154	1-1/2" 45 Deg Elbow, Pp	EA	255.16	
2155	2" 45 Degree Elbow, Pp	EA	293.47	
2156	2-1/2" 45 Deg Elbow, Pp	EA	392.41	
2157	3" 45 Degree Elbow, Pp	EA	489.94	
2158	4" 45 Degree Elbow, Pp	EA	643.67	
2159	6" 45 Degree Elbow, Pp	EA	1,123.88	
2161	8" 45 Degree Elbow, Pp	EA	1,716.36	
15054 2170	Tees			
2171	3/4" Tee, Pp	EA	338.99	
2172	1" Tee, Pp	EA	342.50	
2173	1-1/4" Tee, Pp	EA	403.87	
2174	1-1/2" Tee, Pp	EA	407.44	
2175	2" Tee, Pp	EA	465.53	
2176	2-1/2" Tee, Pp	EA	546.43	
2177	3" Tee, Pp	EA	625.44	
2178	4" Tee, Pp	EA	816.64	
2179	6" Tee, Pp	EA	1,113.84	
2181	8" Tee, Pp	EA	2,121.81	
15054 2190	Cross			
2191	3/4" Cross, Pp	EA	484.38	
2192	1" Cross, Pp	EA	488.13	
2193	1-1/4" Cross, Pp	EA	595.55	
2194	1-1/2" Cross, Pp	EA	598.67	
2195	2" Cross, Pp	EA	676.57	
2196	2-1/2" Cross, Pp	EA	783.95	
2197	3" Cross, Pp	EA	1,039.14	
2198	4" Cross, Pp	EA	1,165.80	
2199	6" Cross, Pp	EA	2,043.69	
2211	8" Cross, Pp	EA	2,587.59	
15054 2220	Reducers			
2221	1" Reducer, Pp	EA	447.70	
2222	1-1/4" Reducer, Pp	EA	451.49	
2223	1-1/2" Reducer, Pp	EA	453.13	
2224	2" Reducer, Pp	EA	533.61	
2225	2-1/2" Reducer, Pp	EA	616.05	
2226	3" Reducer, Pp	EA	686.51	
2227	4" Reducer, Pp	EA	896.37	
2228	6" Reducer, Pp	EA	1,239.51	
2229	8" Reducer, Pp	EA	2,008.55	
15054 2240	Unions			
2241	3/4" Union	EA	369.07	
2242	1" Union	EA	423.73	
2243	1-1/4" Union	EA	829.54	
2244	1-1/2" Union	EA	939.80	
2245	2" Union	EA	1,270.99	
2246	2-1/2" Union	EA	1,848.10	
2247	3" Union	EA	2,359.03	
2248	4" Union	EA	3,662.21	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2249	6" Union	EA	4,906.30	
2251	8" Union	EA	8,064.43	
15054 2260	Blind Flanges			
2261	3/4" Blind Flanges	EA	71.18	
2262	1" Blind Flange	EA	74.69	
2263	1-1/4" Blind Flange	EA	84.28	
2264	1-1/2" Blind Flange	EA	87.85	
2265	2" Blind Flange	EA	100.66	
2266	2-1/2" Blind Flange	EA	126.22	
2267	3" Blind Flange	EA	149.88	
2268	4" Blind Flange	EA	188.56	
2269	6" Blind Flange	EA	284.02	
2271	8" Blind Flange	EA	423.84	
15054 2280	Filler Flanges			
2282	1" Filler Flange	EA	268.32	
2283	1-1/4" Filler Flange	EA	336.18	
2284	1-1/2" Filler Flange	EA	375.48	
2285	2" Filler Flange	EA	429.64	
2286	2-1/2" Filler Flange	EA	496.56	
2287	3" Filler Flange	EA	561.58	
2288	4" Filler Flange	EA	698.01	
2289	6" Filler Flange	EA	955.14	
2291	8" Filler Flange	EA	1,341.24	
15054 2700	Lined Gate Valves			
2702	1" Flanged Gate Valve	EA	699.69	
2703	1-1/4" Flg Gate Valve	EA	794.73	
2704	1-1/2" Flg Gate Valve	EA	903.29	
2705	2" Flanged Gate Valve	EA	1,075.62	
2706	2-1/2" Flg Gate Valve	EA	1,427.42	
2707	3" Flanged Gate Valve	EA	1,773.78	
2708	4" Flanged Gate Valve	EA	2,206.27	
2709	6" Flanged Gate Valve	EA	3,549.37	
2711	8" Flanged Gate Valve	EA	7,440.11	
15054 2800	Lined Check Valves			
2802	1" Flanged Check Valve	EA	792.77	
2803	1-1/4" Flg Check Valve	EA	899.80	
2804	1-1/2" Flg Check Valve	EA	1,021.98	
2805	2" Flanged Check Valve	EA	1,215.83	
2806	2-1/2" Flg Check Valve	EA	1,613.92	
2807	3" Flanged Check Valve	EA	2,006.58	
2808	4" Flanged Check Valve	EA	2,496.54	
2809	6" Flanged Check Valve	EA	4,025.15	
2811	8" Flanged Check Valve	EA	8,459.61	
15054 2900	Lined Plug Valves			
2902	1" Flanged Plug Valve	EA	694.50	
2903	1-1/4" Flg Plug Valve	EA	789.32	
2904	1-1/2" Flg Plug Valve	EA	896.27	
2905	2" Flanged Plug Valve	EA	1,067.62	
2906	2-1/2" Flg Plug Valve	EA	1,417.29	
2907	3" Flanged Plug Valve	EA	1,761.53	
2908	4" Flanged Plug Valve	EA	2,191.06	
2909	6" Flanged Plug Valve	EA	3,524.59	
2911	8" Flanged Plug Valve	EA	6,985.98	
15054 3000	Saran Lined Piping System			
15054 3100	Saran Lined Pipe & Fittings			
15054 3110	Pipe			
3111	3/4" Saran Pipe	LF	21.21	
3112	1" Saran Pipe	LF	21.33	
3113	1-1/4" Saran Pipe	LF	23.88	
3114	1-1/2" Saran Pipe	LF	23.92	
3115	2" Saran Pipe	LF	26.38	
3116	2-1/2" Saran Pipe	LF	34.39	
3117	3" Saran Pipe	LF	41.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3118	4" Saran Pipe	LF	57.61	
3119	6" Saran Pipe	LF	92.18	
3121	8" SaranPipe	LF	142.67	
15054 3130	90 Degree Elbows			
3131	3/4" 90 Degree Elbow, Saran	EA	152.11	
3132	1" 90 Degree Elbow, Saran	EA	153.87	
3133	1-1/4" 90 Deg Elbow, Saran	EA	190.21	
3134	1-1/2" 90 Deg Elbow, Saran	EA	191.85	
3135	2" 90 Degree Elbow, Saran	EA	228.05	
3136	2-1/2" 90 Deg Elbow, Saran	EA	275.64	
3137	3" 90 Degree Elbow, Saran	EA	320.37	
3138	4" 90 Degree Elbow, Saran	EA	498.65	
3139	6" 90 Degree Elbow, Saran	EA	801.85	
3141	8" 90 Degree Elbow, Saran	EA	1,324.07	
15054 3150	45 Degree Elbows			
3151	3/4" 45 Degree Elbow, Saran	EA	182.40	
3152	1" 45 Degree Elbow, Saran	EA	184.16	
3153	1-1/4" 45 Deg Elbow, Saran	EA	203.82	
3154	1-1/2" 45 Deg Elbow, Saran	EA	205.46	
3155	2" 45 Degree Elbow, Saran	EA	248.13	
3156	2-1/2" 45 Deg Elbow, Saran	EA	286.55	
3157	3" 45 Degree Elbow, Saran	EA	362.85	
3158	4" 45 Degree Elbow, Saran	EA	520.00	
3159	6" 45 Degree Elbow, Saran	EA	859.74	
3161	8" 45 Degree Elbow, Saran	EA	1,132.27	
15054 3170	Tees			
3171	3/4" Tee, Saran	EA	244.94	
3172	1" Tee, Saran	EA	248.10	
3173	1-1/4" Tee, Saran	EA	277.91	
3174	1-1/2" Tee, Saran	EA	281.48	
3175	2" Tee, Saran	EA	340.98	
3176	2-1/2" Tee, Saran	EA	439.33	
3177	3" Tee, Saran	EA	454.80	
3178	4" Tee, Saran	EA	686.97	
3179	6" Tee, Saran	EA	1,051.18	
3181	8" Tee, Saran	EA	1,581.95	
15054 3190	Cross			
3191	3/4" Cross, Saran	EA	341.81	
3192	1" Cross, Saran	EA	345.57	
3193	1-1/4" Cross, Saran	EA	403.01	
3194	1-1/2" Cross, Saran	EA	406.12	
3195	2" Cross, Saran	EA	502.33	
3196	2-1/2" Cross, Saran	EA	578.79	
3197	3" Cross, Saran	EA	694.51	
3198	4" Cross, Saran	EA	1,050.98	
3199	6" Cross, Saran	EA	1,613.95	
3211	8" Cross, Saran	EA	3,363.05	
15054 3220	Reducers			
3221	1" Reducer, Saran	EA	224.14	
3222	1-1/4" Reducer, Saran	EA	239.24	
3223	1-1/2" Reducer, Saran	EA	240.88	
3224	2" Reducer, Saran	EA	250.54	
3225	2-1/2" Reducer, Saran	EA	311.06	
3226	3" Reducer, Saran	EA	328.94	
3227	4" Reducer, Saran	EA	419.92	
3228	6" Reducer, Saran	EA	686.04	
3229	8" Reducer, Saran	EA	1,032.87	
15054 3240	Unions			
3241	3/4" Union	EA	338.81	
3242	1" Union	EA	389.14	
3243	1-1/4" Union	EA	761.01	
3244	1-1/2" Union	EA	862.25	
3245	2" Union	EA	1,165.88	
3246	2-1/2" Union	EA	1,694.96	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3247	3" Union	EA	2,163.29	
3248	4" Union	EA	3,357.54	
3249	6" Union	EA	4,497.87	
3251	8" Union	EA	7,390.63	
15054 3260	Blind Flanges			
3261	3/4" Blind Flanges	EA	50.13	
3262	1" Blind Flange	EA	53.64	
3263	1-1/4" Blind Flange	EA	61.24	
3264	1-1/2" Blind Flange	EA	64.81	
3265	2" Blind Flange	EA	75.00	
3266	2-1/2" Blind Flange	EA	94.63	
3267	3" Blind Flange	EA	112.38	
3268	4" Blind Flange	EA	142.51	
3269	6" Blind Flange	EA	210.33	
3271	8" Blind Flange	EA	307.38	
15054 3280	Filler Flanges			
3282	1" Filler Flange	EA	130.63	
3283	1-1/4" Filler Flange	EA	148.01	
3284	1-1/2" Filler Flange	EA	166.25	
3285	2" Filler Flange	EA	203.30	
3286	2-1/2" Filler Flange	EA	253.48	
3287	3" Filler Flange	EA	303.00	
3288	4" Filler Flange	EA	385.68	
3289	6" Filler Flange	EA	485.27	
3291	8" Filler Flange	EA	743.61	
15054 3700	Lined Gate Valves			
3702	1" Flanged Gate Valve	EA	643.61	
3703	1-1/4" Flg Gate Valve	EA	731.43	
3704	1-1/2" Flg Gate Valve	EA	831.77	
3705	2" Flanged Gate Valve	EA	991.14	
3706	2-1/2" Flg Gate Valve	EA	1,315.05	
3707	3" Flanged Gate Valve	EA	1,633.52	
3708	4" Flanged Gate Valve	EA	2,031.38	
3709	6" Flanged Gate Valve	EA	3,262.69	
3711	8" Flanged Gate Valve	EA	6,825.80	
15054 3800	Lined Check Valves			
3802	1" Flanged Check Valve	EA	728.82	
3803	1-1/4" Flg Check Valve	EA	827.61	
3804	1-1/2" Flg Check Valve	EA	940.43	
3805	2" Flanged Check Valve	EA	1,119.49	
3806	2-1/2" Flg Check Valve	EA	1,485.79	
3807	3" Flanged Check Valve	EA	1,846.64	
3808	4" Flanged Check Valve	EA	2,297.11	
3809	6" Flanged Check Valve	EA	3,698.27	
3811	8" Flanged Check Valve	EA	7,759.15	
15054 3900	Lined Plug Valves			
3902	1" Flanged Plug Valve	EA	638.86	
3903	1-1/4" Flg Plug Valve	EA	726.47	
3904	1-1/2" Flg Plug Valve	EA	825.34	
3905	2" Flanged Plug Valve	EA	983.82	
3906	2-1/2" Flg Plug Valve	EA	1,305.78	
3907	3" Flanged Plug Valve	EA	1,622.29	
3908	4" Flanged Plug Valve	EA	2,017.45	
3909	6" Flanged Plug Valve	EA	3,240.01	
3911	8" Flanged Plug Valve	EA	6,410.05	
15054 4000	Kynar Lined Piping System			
15054 4100	Kynar Lined Pipe & Fittings			
15054 4110	Pipe			
4111	3/4" Kynar Pipe	LF	30.89	
4112	1" Kynar Pipe	LF	31.01	
4113	1-1/4" Kynar Pipe	LF	34.77	
4114	1-1/2" Kynar Pipe	LF	34.81	
4115	2" Kynar Pipe	LF	38.29	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4116	2-1/2" Kynar Pipe	LF	49.24	
4117	3" Kynar Pipe	LF	59.81	
4118	4" Kynar Pipe	LF	83.65	
4119	6" Kynar Pipe	LF	134.58	
4121	8" Kynar Pipe	LF	209.62	
15054 4130	90 Degree Elbows			
4131	3/4" 90 Degree Elbow, Kynar	EA	173.82	
4132	1" 90 Degree Elbow, Kynar	EA	175.58	
4133	1-1/4" 90 Deg Elbow, Kynar	EA	216.81	
4134	1-1/2" 90 Deg Elbow, Kynar	EA	218.45	
4135	2" 90 Degree Elbow, Kynar	EA	259.48	
4136	2-1/2" 90 Deg Elbow, Kynar	EA	312.89	
4137	3" 90 Degree Elbow, Kynar	EA	363.04	
4138	4" 90 Degree Elbow, Kynar	EA	567.03	
4139	6" 90 Degree Elbow, Kynar	EA	914.81	
4141	8" 90 Degree Elbow, Kynar	EA	1,513.45	
15054 4150	45 Degree Elbows			
4151	3/4" 45 Degree Elbow, Kynar	EA	208.66	
4152	1" 45 Degree Elbow, Kynar	EA	210.42	
4153	1-1/4" 45 Deg Elbow, Kynar	EA	232.45	
4154	1-1/2" 45 Deg Elbow, Kynar	EA	234.09	
4155	2" 45 Degree Elbow, Kynar	EA	282.58	
4156	2-1/2" 45 Deg Elbow, Kynar	EA	325.42	
4157	3" 45 Degree Elbow, Kynar	EA	411.88	
4158	4" 45 Degree Elbow, Kynar	EA	591.59	
4159	6" 45 Degree Elbow, Kynar	EA	981.39	
4161	8" 45 Degree Elbow, Kynar	EA	1,293.57	
15054 4170	Tees			
4171	3/4" Tee, Kynar	EA	279.63	
4172	1" Tee, Kynar	EA	283.14	
4173	1-1/4" Tee, Kynar	EA	316.83	
4174	1-1/2" Tee, Kynar	EA	320.40	
4175	2" Tee, Kynar	EA	388.03	
4176	2-1/2" Tee, Kynar	EA	499.84	
4177	3" Tee, Kynar	EA	516.62	
4178	4" Tee, Kynar	EA	781.47	
4179	6" Tee, Kynar	EA	1,197.83	
4181	8" Tee, Kynar	EA	1,805.57	
15054 4190	Cross			
4191	3/4" Cross, Kynar	EA	390.88	
4192	1" Cross, Kynar	EA	394.64	
4193	1-1/4" Cross, Kynar	EA	459.57	
4194	1-1/2" Cross, Kynar	EA	462.68	
4195	2" Cross, Kynar	EA	572.14	
4196	2-1/2" Cross, Kynar	EA	657.41	
4197	3" Cross, Kynar	EA	787.93	
4198	4" Cross, Kynar	EA	1,195.80	
4199	6" Cross, Kynar	EA	1,841.38	
4211	8" Cross, Kynar	EA	2,330.42	
15054 4220	Reducers			
4221	1" Reducer, Kynar	EA	269.42	
4222	1-1/4" Reducer, Kynar	EA	273.21	
4223	1-1/2" Reducer, Kynar	EA	274.85	
4224	2" Reducer, Kynar	EA	285.36	
4225	2-1/2" Reducer, Kynar	EA	311.06	
4226	3" Reducer, Kynar	EA	372.89	
4227	4" Reducer, Kynar	EA	476.49	
4228	6" Reducer, Kynar	EA	781.64	
4229	8" Reducer, Kynar	EA	1,179.26	
15054 4240	Unions			
4241	3/4" Union	EA	389.25	
4242	1" Union	EA	446.78	
4243	1-1/4" Union	EA	875.24	
4244	1-1/2" Union	EA	991.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4245	2" Union	EA	1,341.05	
4246	2-1/2" Union	EA	1,950.19	
4247	3" Union	EA	2,489.52	
4248	4" Union	EA	3,865.32	
4249	6" Union	EA	5,178.54	
4251	8" Union	EA	8,513.63	
15054 4260	Blind Flanges			
4261	3/4" Blind Flanges	EA	56.14	
4262	1" Blind Flange	EA	59.65	
4263	1-1/4" Blind Flange	EA	67.83	
4264	1-1/2" Blind Flange	EA	71.40	
4265	2" Blind Flange	EA	82.32	
4266	2-1/2" Blind Flange	EA	103.65	
4267	3" Blind Flange	EA	123.10	
4268	4" Blind Flange	EA	155.67	
4269	6" Blind Flange	EA	231.38	
4271	8" Blind Flange	EA	340.66	
15054 4280	Filler Flanges			
4282	1" Filler Flange	EA	148.48	
4283	1-1/4" Filler Flange	EA	167.93	
4284	1-1/2" Filler Flange	EA	188.42	
4285	2" Filler Flange	EA	230.36	
4286	2-1/2" Filler Flange	EA	286.95	
4287	3" Filler Flange	EA	343.05	
4288	4" Filler Flange	EA	436.25	
4289	6" Filler Flange	EA	548.62	
4291	8" Filler Flange	EA	844.01	
15054 4700	Lined Gate Valves			
4702	1" Flanged Gate Valve	EA	737.08	
4703	1-1/4" Flg Gate Valve	EA	836.93	
4704	1-1/2" Flg Gate Valve	EA	950.96	
4705	2" Flanged Gate Valve	EA	1,131.94	
4706	2-1/2" Flg Gate Valve	EA	1,502.33	
4707	3" Flanged Gate Valve	EA	1,867.31	
4708	4" Flanged Gate Valve	EA	2,322.87	
4709	6" Flanged Gate Valve	EA	3,740.49	
4711	8" Flanged Gate Valve	EA	7,849.63	
15054 4800	Lined Check Valves			
4802	1" Flanged Check Valve	EA	835.41	
4803	1-1/4" Flg Check Valve	EA	947.93	
4804	1-1/2" Flg Check Valve	EA	1,076.35	
4805	2" Flanged Check Valve	EA	1,280.04	
4806	2-1/2" Flg Check Valve	EA	1,699.35	
4807	3" Flanged Check Valve	EA	2,113.21	
4808	4" Flanged Check Valve	EA	2,629.47	
4809	6" Flanged Check Valve	EA	4,243.06	
4811	8" Flanged Check Valve	EA	8,926.58	
15054 4900	Lined Plug Valves			
4902	1" Flanged Plug Valve	EA	731.61	
4903	1-1/4" Flg Plug Valve	EA	831.22	
4904	1-1/2" Flg Plug Valve	EA	943.55	
4905	2" Flanged Plug Valve	EA	1,123.49	
4906	2-1/2" Flg Plug Valve	EA	1,491.64	
4907	3" Flanged Plug Valve	EA	1,854.35	
4908	4" Flanged Plug Valve	EA	2,306.79	
4909	6" Flanged Plug Valve	EA	3,714.31	
4911	8" Flanged Plug Valve	EA	7,369.93	
15055	Sewage Treatment Equipment			
15055 1000	Steel Packaged Sewage Treatment Plant, Extended			
1002	5000GPD Stl Wastewater Trtmt Plt w/Aeration& No Piping or Fencin	EA	83,876.04	
1003	15000GPD St Wastewater Trtmt Plt w/Aeration& No Piping or Fencin	EA	98,344.95	
1004	30000GPD St Wastewater Trtmt Plt w/Aeration& No Piping or Fencin	EA	118,206.77	
1005	50000GPD St Wastewater Trtmt Plt w/Aeration& No Piping or Fencin	EA	166,481.54	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15100 Pipe & Fittings				
JOC Note: Testing, Startup, and Checkout line items are used for existing systems where necessary. New systems includes all necessary testing, startup, and checkout. Demlition Costs For Pipe Include The Removal Of All Associated Fittings, Valves, And Insulation. For Individual Fittings, Valves, And Insulation Removal Use The Appropriate Demolition Line Items. Electrical Termination Costs Are Included In The Line Items.				
15101 Miscellaneous Fittings				
15103 0010 Backflow preventer, corrosion res, auto opn				
15103 1000 Double check principle				
Note: Includes Valves and four test cocks, corrosion resistant, automatic operation Double check principle.				
15103 1080 Threaded				
1100	Backflow pvntr, auto, 2 gate v, tst cocks, dbl chk, thd, 3/4"	EA	673.38	6.81
1120	Backflow pvntr, auto, 2 gate v, tst cocks, dbl chk, thd, 1"	EA	700.70	13.69
1140	Backflow pvntr, auto, 2 gate v, tst cocks, dbl chk, thd, 1.5"	EA	806.12	14.52
1160	Backflow pvntr, auto, 2 gate v, tst cocks, dbl chk, thd, 2"	EA	998.19	25.00
15103 1300 Flanged				
1370	Backflow pvntr, flgd OS&Y, 1", auto, 2 gate v, tst cocks, dbl	EA	772.01	21.67
1374	Backflow pvntr, flgd OS&Y, 1.5", auto, 2 gate v, tst cocks, dbl	EA	871.95	29.08
1378	Backflow pvntr, flgd OS&Y, 2", auto, 2 gate v, tst cocks, dbl	EA	1,055.07	36.68
1379	3" Flanged Backflow Preventer w/2Gate&2CK Vlv&Auto Dif Rlf Vlv	EA	1,751.55	83.26
1400	Backflow pvntr, flgd OS&Y, 4", auto, 2 gate v, tst cocks, dbl	EA	2,341.94	129.43
1420	Backflow pvntr, flgd OS&Y, 6", auto, 2 gate v, tst cocks, dbl	EA	3,683.82	191.05
1430	Backflow pvntr, flgd OS&Y, 8", auto, 2 gate v, tst cocks, dbl	EA	6,730.26	287.18
15103 3999 Reduced Pressure Principle				
15103 4000 Reduced Pressure Backflow Preventor				
Note: Threaded Valves are Ball Type, Flanged Valves are OS&Y Type Iron Body.				
4001	1/2"Thrd St Reduced Pressure Backflow Preventor	EA	642.13	7.26
4002	3/4"Thrd St Reduced Pressure Backflow Preventor	EA	772.67	7.26
4003	1"Thrd St Reduced Pressure Backflow Preventor	EA	820.80	8.21
4004	1-1/4"Thrd St Reduced Pressure Backflow Preventor	EA	1,141.44	10.65
4005	1-1/2"Thrd St Reduced Pressure Backflow Preventor	EA	1,118.85	12.93
4006	2"Thrd St Reduced Pressure Backflow Preventor	EA	1,207.13	18.85
4007	2-1/2" Flg St Reduced Pressure Backflow Preventor, Iron	EA	2,127.83	57.08
4008	3" Flg St Reduced Pressure Backflow Preventor, Iron	EA	2,254.07	63.26
4009	4" Flg St Reduced Pressure Backflow Preventor, Iron	EA	3,028.05	94.85
4011	6" Flg St Reduced Pressure Backflow Preventor, Iron	EA	4,765.05	177.41
4012	8" Flg St Reduced Pressure Backflow Preventer, Iron	EA	9,455.04	267.00
4013	10" Flg St Reduced Pressure Backflow Preventer, Iron	EA	13,307.20	533.89
15103 7000 Backwater sewer line valve				
15103 7010 Offset type				
Note: With Bronze Swing Check Assembly, Threaded Bronze Cover, And Bell And Spigot Connections				
7016	Valve, backwater sewer line, brz swg chk assy/cover, B&S, 2",	EA	184.01	18.88
7017	3" CI Backwater Sewer Valve Offset Type w/Brz Swing Ck Assy	EA	299.76	22.73
7018	Valve, backwater sewer line, brz swg chk assy/cover, B&S, 4",	EA	327.35	25.23
7020	Valve, backwater sewer line, brz swg chk assy/cover, B&S, 6",	EA	454.72	30.03
7022	Valve, backwater sewer line, brz swg chk assy/cover, B&S, 8",	EA	675.36	37.71
15103 7050 Backwater drainage control				
15103 7060 Offset type				
Note: With Bronze, Mnually Operated Shear Gate, Non-Rising Stem And Bell And Spigot Connections				
7066	3"CI Drainage Ctrl Backwater Vlv Offset Type w/Brz Mnl Opr S Gat	EA	470.00	33.22
7068	Valve, offset w/manually opr shear gate, B&S, 4", backwater	EA	478.17	34.06
7069	5"CI Drainage Ctrl Backwater Vlv Offset Type w/Brz Mnl Opr S Gat	EA	641.97	37.85
7070	Valve, offset w/manually opr shear gate, B&S, 6", backwater	EA	746.03	41.12
15104 0010 Cleanouts				
15104 0060 Floor type				
15104 0080 Round or square Nickel Bronze Cover For Floor Installation				
0100	Cleanouts, fl type, 2" pipe, rnd or sq, scoriated nkl brz top	EA	83.23	7.19
0120	Cleanouts, fl type, 3" pipe, rnd or sq, scoriated nkl brz top	EA	102.56	10.10
0140	Cleanouts, fl type, 4" pipe, rnd or sq, scoriated nkl brz top	EA	126.94	11.73
15104 4000 Wall type, square smooth cover Cover And Screw Only				
4080	Cleanouts, wall type, 3" pipe, sq smooth cov, over wall frame	EA	89.95	14.75

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4090	Cleanouts, wall type, 5" pipe, sq smooth cov, over wall frame	EA	106.09	18.10
4160	Cleanouts, wall type, 8" pipe, sq smooth cov, over wall frame	EA	204.63	23.77
15104 4200	Wall cleanout cover			
4210	Wall cleanout cover w/screw, sst, 3" dia	EA	40.21	1.97
4215	Wall cleanout cover w/screw, sst, 5" dia	EA	61.26	1.98
4220	Wall cleanout cover w/screw, sst, 8" dia	EA	103.96	1.85
15105 0010	Cleanout tee			
15105 2000	Cast iron, no hub			
15105 2010	Cleanout tee			
2012	Cleanout tee, no hub, CI, w/2 couplings, 2"	EA	40.49	10.57
2014	Cleanout tee, no hub, CI, w/2 couplings, 3"	EA	49.81	11.78
2016	Cleanout tee, no hub, CI, w/2 couplings, 4"	EA	63.10	13.52
2018	Cleanout tee, no hub, CI, w/2 couplings, 6"	EA	114.14	22.23
2020	4" Sgl Two-Way Cleanout	EA	74.10	17.86
2022	4" Dbl Two-Way Cleanout	EA	95.53	26.10
15105 2040	Cleanout plug			
2042	Cleanout plug, no hub, CI, w/1 coupling, 2"	EA	23.57	7.31
2046	Cleanout plug, no hub, CI, w/1 coupling, 3"	EA	30.76	9.15
2048	Cleanout plug, no hub, CI, w/1 coupling, 4"	EA	40.93	11.39
2050	Cleanout plug, no hub, CI, w/1 coupling, 6"	EA	86.93	14.36
2052	Cleanout plug, no hub, CI, w/1 coupling, 8"	EA	109.88	17.48
15105 5000	PVC, DW			
15105 5300	Cleanout tee			
5310	Cleanout tee, w/plug, PVC, DW plastic fittings, 4"	EA	63.82	11.46
5320	Cleanout tee, w/plug, PVC, DW plastic fittings, 6"	EA	111.64	18.17
5330	Cleanout tee, w/plug, PVC, DW plastic fittings, 8"	EA	134.51	21.36
5340	Cleanout tee, w/plug, PVC, DW plastic fittings, 12"	EA	236.53	26.11
15105 5400	Polypropylene, schedule 40			
15105 5410	Cleanout tee			
5420	Cleanout tee, w/plug, polypropylene, sched 40, 1.5"	EA	42.77	5.79
5430	Cleanout tee, w/plug, polypropylene, sched 40, 2"	EA	47.20	6.42
5440	Cleanout tee, w/plug, polypropylene, sched 40, 3"	EA	80.56	7.74
5450	Cleanout tee, w/plug, polypropylene, sched 40, 4"	EA	102.51	10.29
5452	6" Cleanout Tee With Plug Polypropylene, Schedule 40	EA	128.72	13.81
15105 5500	Trap Vent, Automatic			
5510	Trap Vent, Automatic	EA	37.75	5.54
15107 0010	Drains			
15107 0800	Promenade, heelproof grate, with bronze top			
0972	Drains, roof, promenade top, CI, 14" sq bronze top, 2" pipe	EA	263.94	20.76
0980	<i>Drains, roof, promenade top, for galvanized iron parts, add</i>		59.50	
0974	Drains, roof, promenade top, CI, 14" sq bronze top, 3" pipe	EA	263.94	21.50
0980	<i>Drains, roof, promenade top, for galvanized iron parts, add</i>		59.50	
0976	Drains, roof, promenade top, CI, 14" sq bronze top, 4" pipe	EA	263.94	23.28
0980	<i>Drains, roof, promenade top, for galvanized iron parts, add</i>		59.50	
0977	CI Roof Drn w/14Sq"Top, 5"Outlet Bronze Promenade Top	EA	289.19	25.26
0980	<i>Drains, roof, promenade top, for galvanized iron parts, add</i>		59.50	
0978	Drains, roof, promenade top, CI, 14" sq bronze top, 6" pipe	EA	294.97	24.62
0980	<i>Drains, roof, promenade top, for galvanized iron parts, add</i>		59.50	
1240	Drains, deck, 2"; 3" & 4" pipe, promenade, CI, lateral, 14" top	EA	161.53	23.63
1370	<i>Drains, deck, promenade, for galvanized iron parts, add</i>		59.50	
1372	<i>Drains, deck, promenade, for bronze grate, add</i>		77.00	
15107 2000	Floor			
15107 2000	Medium duty, cast iron, with bronze top			
2124	Drains, fl, 1.5" pipe, mdm duty, CI, deep flange, polish brz 7"	EA	103.90	12.42
2140	<i>Drains, medium duty, for galvanized body, add</i>		14.15	
2142	<i>Drains, medium duty, for chrome plated top, add</i>		5.66	
2126	Drains, fl, 2" pipe, mdm duty, CI, deep flange, polish brz 7"	EA	113.23	13.73
2140	<i>Drains, medium duty, for galvanized body, add</i>		14.15	
2142	<i>Drains, medium duty, for chrome plated top, add</i>		6.59	
2128	Drains, fl, 3" pipe, mdm duty, CI, deep flange, polish brz 7"	EA	113.23	14.58
2140	<i>Drains, medium duty, for galvanized body, add</i>		14.15	
2142	<i>Drains, medium duty, for chrome plated top, add</i>		6.59	
2130	Drains, fl, 4" pipe, mdm duty, CI, deep flange, polish brz 7"	EA	150.89	15.65

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15107 2160 Heavy duty, cast iron, with bronze top				
2244	Drains, fl, polished brz top, 4" pipe, 12" anti-tilt, HD, CI	EA	232.16	32.64
	2270 <i>Drains, floor, funnel type, for galvanized body, add</i>		43.50	
	2272 <i>Drains, floor, funnel type, for chrome plated top, add</i>		17.54	
2252	Drains, fl, funnel type, CI, bronze top, 1.5" pipe	EA	193.44	28.39
	2270 <i>Drains, floor, funnel type, for galvanized body, add</i>		43.50	
	2272 <i>Drains, floor, funnel type, for chrome plated top, add</i>		13.67	
2254	Drains, fl, funnel type, CI, bronze top, 2" pipe	EA	300.43	29.59
	2270 <i>Drains, floor, funnel type, for galvanized body, add</i>		43.50	
	2272 <i>Drains, floor, funnel type, for chrome plated top, add</i>		24.37	
2256	Drains, fl, funnel type, CI, bronze top, 3" pipe	EA	300.43	31.65
	2270 <i>Drains, floor, funnel type, for galvanized body, add</i>		43.50	
	2272 <i>Drains, floor, funnel type, for chrome plated top, add</i>		24.37	
2258	Drains, fl, funnel type, CI, bronze top, 4" pipe	EA	300.43	33.92
	2270 <i>Drains, floor, funnel type, for galvanized body, add</i>		43.50	
	2272 <i>Drains, floor, funnel type, for chrome plated top, add</i>		24.37	
15107 2400 Heavy duty, sediment bucket, cast iron, brz top Round Satin Bronze Top, W0 Trap				
2472	Drains, fl, polish brz top, 2", 12" loose grate, hvy duty, sed	EA	246.43	12.42
	2490 <i>Drains, floor, heavy duty, for galvanized body, add</i>		64.50	
	2492 <i>Drains, floor, heavy duty, for chrome plated top, add</i>		18.34	
2474	Drains, fl, polish brz top, 3", 12" loose grate, hvy duty, sed	EA	192.56	8.27
	2490 <i>Drains, floor, heavy duty, for galvanized body, add</i>		64.50	
	2492 <i>Drains, floor, heavy duty, for chrome plated top, add</i>		12.95	
2476	Drains, fl, polish brz top, 4", 12" loose grate, hvy duty, sed	EA	192.56	8.98
	2490 <i>Drains, floor, heavy duty, for galvanized body, add</i>		64.50	
	2492 <i>Drains, floor, heavy duty, for chrome plated top, add</i>		12.95	
2478	Drains, fl, polish brz top, 5", 12" loose grate, hvy duty, sed	EA	192.56	9.76
	2490 <i>Drains, floor, heavy duty, for galvanized body, add</i>		64.50	
	2492 <i>Drains, floor, heavy duty, for chrome plated top, add</i>		12.95	
2480	Drains, fl, polish brz top, 6", 12" loose grate, hvy duty, sed	EA	192.56	10.64
	2490 <i>Drains, floor, heavy duty, for galvanized body, add</i>		64.50	
	2492 <i>Drains, floor, heavy duty, for chrome plated top, add</i>		12.95	
15107 2630 Acid resistant				
Note: Square or Round Nickel Bronze Top, Deep Receptors, For Conc. Embed or Wood Frame Construction. Same Drain Body (Different Gasket) Used For Various Pipe Sizes.				
2640	Drains, fl, 2"; 3" & 4" pipe, PVC, acid resist, NB 6.5"sq/rnd top	EA	82.25	24.59
2646	Drains, fl, 2"; 3" & 4" pipe, CI, acid resistant, NB 8"sq top	EA	428.73	29.63
2648	Drains, fl, 2"; 3" & 4" pipe, CI, acid resistant, NB 8" rnd top	EA	351.22	29.06
15107 2780 Shower, CI, with strainer, with bronze top				
2800	Drains, shower, 1.5"; 2" & 3" pipe, w/str, uniform dia trap,	EA	147.47	31.22
	2830 <i>Drains, shower, for galvanized body, add</i>		29.00	
	2832 <i>Drains, shower, for chrome plated top, add</i>		7.65	
2820	Drains, shower, w/str, uniform dia trap, brz top, 4" pipe	EA	228.24	35.59
	2830 <i>Drains, shower, for galvanized body, add</i>		29.00	
	2832 <i>Drains, shower, for chrome plated top, add</i>		14.71	
15107 3860 Roof				
Note: With Large Polypropylene Round Satin Bronze Top, W0 Trap				
15107 3860 Flat metal deck, cast iron body				
3900	Drains, roof, 4" pipe, flat metal deck, CI body, 12" CI dome	EA	120.18	24.02
15107 4280 Integral expansion joint, cast iron body				
4300	Drains, roof, 2" pipe, integral exp jt, CI body, 12" CI dome	EA	188.67	17.85
	4450 <i>Drains, roof, CI dome, for galvanized iron parts, add</i>		39.00	
4320	Drains, roof, 3" pipe, integral exp jt, CI body, 12" CI dome	EA	204.69	19.20
	4450 <i>Drains, roof, CI dome, for galvanized iron parts, add</i>		39.00	
4340	Drains, roof, 4" pipe, integral exp jt, CI body, 12" CI dome	EA	224.09	56.77
	4450 <i>Drains, roof, CI dome, for galvanized iron parts, add</i>		39.00	
4350	CI Roof Drn w/Exp Jnt, 5" Outlet With 116 Sq" Polypropylene Dome	EA	538.52	79.30
	4450 <i>Drains, roof, CI dome, for galvanized iron parts, add</i>		39.00	
4380	Drains, roof, 6" pipe, integral exp jt, CI body, 12" CI dome	EA	389.33	41.26
	4450 <i>Drains, roof, CI dome, for galvanized iron parts, add</i>		39.00	
15107 4620 Min, all aluminum				
Note: Drain Body Remains Constant as Pipe Size Changes. Gasket Changes with Pipe Size.				
4640	Drains, roof, 2"; 3" & 4" pipe, main, all al, 12" l profile dome	EA	246.54	28.77
4660	Drains, roof, 5" & 6" pipe, main, all al, 12" l profile dome	EA	273.20	29.80
15107 4689 Min, cast iron body				
Note: Drain Body Remains Constant as Pipe Size Changes. Gasket Changes With Pipe Size.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4690	Drains, roof, 2"; 3" & 4" pipe, main, CI body, 12" polyprop dome	EA	148.92	21.93
4752	<i>Drains, roof, poly dome, for galvanized body, add</i>		91.50	
4754	<i>Drains, roof, poly dome, for deck clamp, add</i>		19.75	
4756	<i>Drains, roof, poly dome, for bronze dome, add</i>		80.00	
4710	Drains, roof, 5" & 6" pipe, main, CI body, 12" polyprop dome	EA	205.67	25.47
4752	<i>Drains, roof, poly dome, for galvanized body, add</i>		91.50	
4754	<i>Drains, roof, poly dome, for deck clamp, add</i>		19.75	
4756	<i>Drains, roof, poly dome, for bronze dome, add</i>		80.00	
15107 4940	Downspout nozzle, roof drain, bronze			
4942	Drains, roof, downspout nozzle, bronze, 2" outlet	EA	84.53	10.26
4944	Drains, roof, downspout nozzle, bronze, 3" outlet	EA	85.46	10.50
4946	Drains, roof, downspout nozzle, bronze, 4" outlet	EA	87.68	11.00
4947	Roof Drn Downspout, 5" Outlet-Brz	EA	173.15	11.18
4948	Drains, roof, downspout nozzle, bronze, 6" outlet	EA	183.96	11.35
4950	Drains, roof, downspout nozzle, bronze, 8" outlet	EA	270.69	11.42
15107 4980	Scupper floor, oblique bronze strainer, cast iron			
5212	Drains, scupper floor, 2" pipe, CI, w/oblique bronze strainer	EA	90.80	4.01
5230	<i>Drains, scupper floor, for galvanized iron parts, add</i>		22.13	
5214	Drains, scupper floor, 3" pipe, CI, w/oblique bronze strainer	EA	90.80	4.86
5230	<i>Drains, scupper floor, for galvanized iron parts, add</i>		22.13	
5216	Drains, scupper floor, 4" pipe, CI, w/oblique bronze strainer	EA	90.80	5.22
5230	<i>Drains, scupper floor, for galvanized iron parts, add</i>		22.13	
5217	CI Scupper Drain, 5" Outlet With L-Shaped Bronze Grate	EA	118.64	6.07
5230	<i>Drains, scupper floor, for galvanized iron parts, add</i>		32.25	
5218	Drains, scupper floor, 6" pipe, CI, w/oblique bronze strainer	EA	146.49	7.27
5230	<i>Drains, scupper floor, for galvanized iron parts, add</i>		42.38	
15107 5300	ABS & PVC Automatic Drain Vent			
5302	1-1/2" ABS & PVC Automatic Drain Vent	EA	37.37	5.03
5304	2" ABS & PVC Automatic Drain Vent	EA	48.45	5.03
15107 7000	Roof Drains - Aluminum Dome			
7001	Roof Drains-Aluminum Dome 2" Dia	EA	174.12	
7002	Roof Drains-Aluminum Dome 3" Dia	EA	189.42	
7003	Roof Drains-Aluminum Dome 4" Dia	EA	208.61	
7004	Roof Drains-Aluminum Dome 6" Dia	EA	336.59	
15109 0010	Faucets/fittings			
15109 0149	Bath, faucets and fittings			
0150	Faucets/fittings, diverter spout combination, sweat, bath,	EA	109.69	15.24
0300	Faucets/fittings, flange, sweat, three V comb, spout, HD, arm	EA	122.87	12.07
15109 1540	Handicap Additions			
1541	Add For Infa-Red Faucets	EA	347.36	9.54
15109 2050	Drainage fittings			
2051	Drainage fitting, 1.25" male	EA	28.92	2.27
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
2053	Drainage fitting, 1.5" male	EA	30.83	2.27
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
15109 2100	Faucet, 1/2" Copper inside x 1/2" MPS Frost Proof Sill Cocks			
2110	1/2" x 8" Length		35.30	
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
2120	1/2" x 10" Length		36.25	
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
2130	1/2" x 12" Length		37.27	
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
2140	1/2" x 14" Length		39.47	
2301	<i>For Mechanical Joint ConnectionsAdd Per Each</i>		10.00	
15109 2200	Faucet, 1/2" FSFS x 3/4" MPS			
2210	1/2" x 8"		36.14	
2220	1/2" x 10"		37.18	
2230	1/2" x 12"		37.24	
2240	1/2" x 14"		39.58	
15109 2300	Anti-Siphon Proof Sill Cocks, 1/2" Copper Inside x 1/2" MPS			
2310	1/2" x 8"		42.79	
2320	1/2" x 10"		43.16	
2330	1/2" x 12"		43.99	
2340	1/2" x 14"		44.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15109 2400	Anti-Siphon Proof Sill Cocks, 1/2" FSFS x 3/4" MFS			
2410	1/2" x 8"		42.79	
2420	1/2" x 10"		43.16	
2430	1/2" x 12"		43.99	
2440	1/2" x 14"		44.49	
15109 2510	Anti-Siphon Proof Sill Cocks, 3/4" copper x 3/4" MFS			
2510	3/4" x 12"		43.99	
15109 4199	Shower			
	Note: Range 65 Degree F. To 115 Degree F; Failure Of Cold Water Supply Shuts Off Built-In Valve 7 1/2 Gpm At 45 Psi			
4200	Shower thermostatic mixing valve, concealed	EA	261.92	14.41
4206	Shower thermostatic mixing v, check & stops, concealed,	EA	325.30	13.05
4350	Shower thermostatic mixing v, hose adptr, hvy duty, vac brkr	EA	558.45	13.62
15111 0010	Hydrants			
15111 0050	Wall type			
15111 0050	Moderate climate, bronze, encased			
0200	Hydrant, wall type, 3/4" IPS conn, moderate climate, bronze,	EA	201.98	10.21
0600	Hydrant, wall, mod climate, for 3/4" nozzle type vac breaker, add		13.75	
0300	Hydrant, wall type, 1" IPS conn, moderate climate, bronze,	EA	204.68	9.98
0600	Hydrant, wall, mod climate, for 3/4" nozzle type vac breaker, add		13.75	
15111 1110	Cast Bronze Box Type Wall Hydrant With 1/2 In Np			
1111	Wall Hydrant, 6" (15cm) Thk Wall 3/4"NPTM Outlet & 1/2"NPTF Inle	EA	255.24	
1121	For 300 Lb (136Kg) Rated Valves Add		87.19	
1180	Hydrant, wall, non-frz, for 3/4" nozzle type vacuum breaker, add		13.75	
1190	Hydrant, wall type, non-frz, for 1" HPT outlet, add		21.00	
1200	Hydrant, wall type, non-frz, for 1" IPS connection, add		36.70	
1112	Wall Hydrant, 12" (31cm) Thk Wall 3/4"NPTM Outlet & 1/2"NPTF Inle	EA	269.57	
1121	For 300 Lb (136Kg) Rated Valves Add		90.30	
1180	Hydrant, wall, non-frz, for 3/4" nozzle type vacuum breaker, add		13.75	
1190	Hydrant, wall type, non-frz, for 1" HPT outlet, add		21.00	
1200	Hydrant, wall type, non-frz, for 1" IPS connection, add		38.53	
1113	Wall Hydrant, 18" (46cm) Thk Wall 3/4"NPTM Outlet & 1/2"NPTF Inle	EA	301.32	
1180	Hydrant, wall, non-frz, for 3/4" nozzle type vacuum breaker, add		13.75	
1190	Hydrant, wall type, non-frz, for 1" HPT outlet, add		21.00	
1200	Hydrant, wall type, non-frz, for 1" IPS connection, add		42.91	
15111 2000	Non-freeze, bronze, encased			
2176	Hydrant, wall type, 3/4"NPTF out/1"NPTM 4"- 9"wall, non-frz	EA	256.61	10.78
2180	Hydrant, wall, non-frz, for 3/4" nozzle type vacuum breaker, add		13.75	
2190	Hydrant, wall type, non-frz, for 1" HPT outlet, add		21.00	
2200	Hydrant, wall type, non-frz, for 1" IPS connection, add		25.66	
15111 6000	Ground post type			
15111 6000	Non-freeze, bronze, exposed In Hbse Thread Outlet			
6090	18" Thk Non-Freezing Hydrant Cast Brz, 3/4"NPTF Out, & 1"NPTM In	EA	236.32	30.91
6300	Hydrant, gnd type, non-frz, 3/4" IPS, for 1" IPS connection, add		80.27	
6350	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/4" IPS connection, add		270.96	
6400	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/2" IPS connection, add		433.33	
6450	Hydrant, gnd type, non-frz, 3/4" IPS, for 2" IPS connection, add		606.10	
6100	Hydrant, gnd post, 3/4"IPS, 2' bury, brz, al case, exp head,	EA	266.45	27.15
6300	Hydrant, gnd type, non-frz, 3/4" IPS, for 1" IPS connection, add		95.23	
6350	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/4" IPS connection, add		325.38	
6400	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/2" IPS connection, add		521.23	
6450	Hydrant, gnd type, non-frz, 3/4" IPS, for 2" IPS connection, add		729.26	
6140	Hydrant, gnd post, 3/4"IPS, 4' bury, brz, al case, exp head,	EA	304.51	28.33
6300	Hydrant, gnd type, non-frz, 3/4" IPS, for 1" IPS connection, add		110.46	
6350	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/4" IPS connection, add		378.66	
6400	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/2" IPS connection, add		606.86	
6450	Hydrant, gnd type, non-frz, 3/4" IPS, for 2" IPS connection, add		849.15	
6180	Hydrant, gnd post, 3/4"IPS, 6' bury, brz, al case, exp head,	EA	348.11	25.71
6300	Hydrant, gnd type, non-frz, 3/4" IPS, for 1" IPS connection, add		126.28	
6350	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/4" IPS connection, add		432.90	
6400	Hydrant, gnd type, non-frz, 3/4" IPS, for 1-1/2" IPS connection, add		693.78	
6450	Hydrant, gnd type, non-frz, 3/4" IPS, for 2" IPS connection, add		970.78	
15112 0010	Medical gas systemspecialties			
15112 0100	Vacuum system			
0110	Medical gas system specialties, vacuum outlet alarm panel	EA	815.91	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15112 1000 Nitrogen and oxygen system				
1020	Medical gas system 5 cylinder, cylinder manifold, nitrogen &	EA	5,237.60	
1026	Medical gas system 10 cylinder, cylinder manifold, nitrogen &	EA	6,536.13	
15112 3000 Outlets and valves				
3012	Medical gas, outlets & valves, 1 outlet, recessed, wall mtd	EA	143.20	
3110	Medical gas, outlets & valves, 6 outlet, recessed, ceiling mtd	EA	417.94	
3210	Medical gas, outlets & valves, zone valve w/box, 2"	EA	428.15	
3211	Medical gas system alarm panel, medical gases & vacuum	EA	815.91	
15113 0010 Rubber hose and accessories				
15113 0020 General purpose, medium pressure				
15113 0030 Resistant to air, oil, and heat hose				
Note: Applications Requiring Excellent Resistance To Air Oil And Heat				
0042	Rubber hose, genl prp, for clamp, 3/8" ID, mdm press,	LF	3.86	0.79
0044	Rubber hose, genl prp, for clamp, 1/2" ID, mdm press,	LF	4.04	0.79
0046	Rubber hose, genl prp, for clamp, 5/8" ID, mdm press,	LF	4.27	0.79
0048	Rubber hose, genl prp, for clamp, 3/4" ID, mdm press,	LF	4.61	0.91
0050	Rubber hose, genl prp, for clamp, 1" ID, mdm press,	LF	5.44	1.21
0052	Rubber hose, genl prp, for clamp, 1.25" ID, mdm press,	LF	6.70	1.25
0054	Rubber hose, genl prp, for clamp, 1.5" ID, mdm press,	LF	8.44	1.81
15113 1100 Chemical resistant hose				
1114	Rubber hose, chem resist brown gum rubber, 6"x50'	EA	1,016.95	55.41
1124	Rubber hose, chem resist, 6"x50', nitrile, low pH resist	EA	1,582.85	58.77
1134	Rubber hose, chem resist, 2" x 20' discharge, water pump hose	EA	90.12	15.81
1138	Rubber hose, chem resist, water pump hose, 2" x 20' intake	EA	125.78	16.75
15113 4000 Couplings				
4042	Rubber access, genl prp, 3/8" ID x 1/2" MPT, mdm press, cplg nipple,	EA	7.79	1.74
4044	Rubber access, genl prp, 1/2" ID x 5/8" MPT, mdm press, cplg nipple,	EA	7.83	1.78
4046	Rubber access, genl prp, 5/8" ID x 3/4" MPT, mdm press, cplg nipple,	EA	7.85	1.78
4048	Rubber access, genl prp, 3/4" ID x 1" MPT, mdm press, cplg nipple,	EA	9.77	2.38
4050	Rubber access, genl prp, 1" ID x 1.25" MPT, mdm press, cplg nipple,	EA	10.50	2.42
4052	Rubber access, genl prp, 1-1/4 ID x 1.5" MPT, mdm press, cplg	EA	17.55	4.05
4054	Rubber access, genl prp, 1-1/2 ID x 2" MPT, mdm press, cplg nipple,	EA	22.56	5.18
15113 4100 Clamps				
4110	Rubber access, hose clamp, worm drive type, 3/8" ID - 1" OD	EA	5.07	1.51
4112	Rubber access, hose clamp, 1/2" ID - 1-1/16" OD, worm drive type	EA	5.28	1.47
4114	Rubber access, hose clamp, 5/8" ID - 1.5" OD, worm drive type	EA	5.58	1.47
4116	Rubber access, hose clamp, worm drive type, 3/4" ID - 2" OD	EA	5.77	1.44
4118	Rubber access, hose clamp, worm drive type, 1" ID - 2.5" OD	EA	6.10	1.40
4120	Rubber access, hose clamp, 1.25" ID - 2.75" OD, worm drive type	EA	6.56	1.85
4122	Rubber access, hose clamp, worm drive type, 1.5" ID - 3" OD	EA	7.45	1.97
15114 0010 Shock absorbers				
15114 4000 Bellows type				
4010	Shock absorber, bellows type, 3/4" FNPT, 11 fxtr units	EA	85.44	14.83
4020	Shock absorber, bellows type, 1" FNPT, 32 fxtr units	EA	145.73	16.98
4030	Shock absorber, bellows type, 1" FNPT, 60 fxtr units	EA	201.04	16.94
4040	Shock absorber, bellows type, 1" FNPT, 113 fxtr units	EA	452.30	16.90
4050	Shock absorber, bellows type, 1" FNPT, 154 fxtr units	EA	517.52	23.67
4060	Shock absorber, bellows type, 1.5" FNPT, 300 fxtr units	EA	640.56	34.07
15115 0010 Sleeves and escutcheons				
15115 0100 Pipe sleeve Including Link Seals 12 In Length				
0120	Pipe sleeve, stl, 2" dia for 1/2" carrier, flgd, 12" L,	EA	62.73	
0130	Pipe sleeve, stl, 2.5" dia for 3/4" carrier, flgd, 12" L,	EA	69.51	
0140	Pipe sleeve, stl, 2.5" dia for 1" carrier, flgd, 12" L, w/link	EA	67.25	
0150	Pipe sleeve, stl, 3" dia for 1.25" carrier, flgd, 12" L,	EA	83.44	
0160	Pipe sleeve, stl, 3.5" dia for 1.5" carrier, flgd, 12" L,	EA	87.22	
0170	Pipe sleeve, stl, 4" dia for 2" carrier, flgd, 12" L, w/link	EA	97.85	
0180	Pipe sleeve, stl, 4" dia for 2.5" carrier, flgd, 12" L,	EA	97.51	
0190	Pipe sleeve, stl, 5" dia for 3" carrier, flgd, 12" L, w/link	EA	115.11	
0200	Pipe sleeve, stl, 6" dia for 4" carrier, flgd, 12" L, w/link	EA	131.50	
0210	Pipe sleeve, stl, 10" dia for 6" carrier, flgd, 12" L w/link	EA	164.33	
0220	Pipe sleeve, stl, 12" dia for 8" carrier, flgd, 12" L w/link	EA	261.06	
0230	Pipe sleeve, stl, 14" dia for 10" carrier, flgd, 12" L w/link	EA	281.67	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0240	Pipe sleeve, stl, 16" dia for 12" carrier, flgd, 12" L w/link	EA	323.11	
0250	Pipe sleeve, stl, 18" dia for 14" carrier, flgd, 12" L w/link	EA	363.54	
0260	Pipe sleeve, stl, 24" dia for 18" carrier, flgd, 12" L w/link	EA	559.69	
0270	Pipe sleeve, stl, 24" dia for 20" carrier, flgd, 12" L w/link	EA	483.16	
0280	Pipe sleeve, stl, 30" dia for 24" carrier, flgd, 12" L w/link	EA	696.02	
15115 0500 Wall sleeve Seal Included				
0520	Wall sleeve, ductile iron w/rubber gasket seal, 3"	EA	144.62	
0530	Wall sleeve, ductile iron w/rubber gasket seal, 4"	EA	177.67	
0540	Wall sleeve, ductile iron w/rubber gasket seal, 6"	EA	232.43	
0550	Wall sleeve, ductile iron w/rubber gasket seal, 8"	EA	308.96	
0560	Wall sleeve, ductile iron w/rubber gasket seal, 10"	EA	362.69	
0570	Wall sleeve, ductile iron w/rubber gasket seal, 12"	EA	436.36	
15115 5000 Escutcheon				
5120	Escutcheon, split ring, pipe, chrome plated, 1/2"	EA	2.77	0.57
5130	Escutcheon, split ring, pipe, chrome plated, 3/4"	EA	2.80	0.57
5140	Escutcheon, split ring, pipe, chrome plated, 1"	EA	3.21	0.68
5142	Split-Ring Escutcheon, 1-1/4" Pipe Chrome Plated	EA	3.70	0.80
5150	Escutcheon, split ring, pipe, chrome plated, 1.5"	EA	4.12	0.79
5160	Escutcheon, split ring, pipe, chrome plated, 2"	EA	4.57	0.91
5162	Split-Ring Escutcheon, 2-1/2" Pipe Chrome Plated	EA	5.24	1.02
5164	Split-Ring Escutcheon, 3" Pipe Chrome Plated	EA	5.88	1.02
5166	Split-Ring Escutcheon, 3-1/2" Pipe Chrome Plated	EA	6.53	1.14
5170	Escutcheon, split ring, pipe, chrome plated, 4"	EA	7.18	1.13
5172	Split-Ring Escutcheon, 5" Pipe Chrome Plated	EA	8.70	1.25
5180	Escutcheon, split ring, pipe, chrome plated, 6"	EA	10.11	1.36
15116 0010 Supports/carriers for plumbing fixtures				
15116 3000 Lavatory, concealed arm				
Note: Arms Leveling And Securing Screws Tubular Uprights And Block Bases				
3200	Supports/carrier, fl slab fxtr, lav, concealed arm fl mtd, sgl	EA	249.04	16.94
15116 4600 Sink, floor mounted				
Note: Adjustable Rods Acid-Resisting Porcelain Enameled Arms Securing Screws Tubular Uprights Block Base And Chrome Plated Trim				
5300	Supports/carrier, sgl hvy fxtr, pl type sys, w/ exp arms, sink,	EA	284.61	22.39
15116 5999 Urinal, floor mounted				
Note: Adjustable Fixture Bolts Structural Uprights Block Bases And Chrome Plated Trim				
6000	Supports/carrier, blowout type, urinal, 2" or 3" cplg, fl mtd	EA	219.07	15.09
6100	Supports/carrier, w/fxtr or hgr bolts, urinal, 2" or 3" cplg, fl	EA	170.40	17.59
6200	Supports/carrier, w/brg plate, urinal, 2" or 3" cplg, fl mtd	EA	146.54	18.08
6300	Supports/carrier, urinal, wall mounted, plate type system	EA	119.88	19.63
15116 6980 Water closet, siphon jet				
Note: Vertical Fitting With Extension And Chrome Plated Trim				
7040	Supports/carrier, caulk, sgl, 4", horiz, adj, water closet,	EA	179.91	8.17
7100	Supports/carrier, caulk, dbl, 4", horiz, adj, water closet,	EA	313.58	11.80
15116 9000 Water cooler (electric)				
Note: Adjustable Supporting Rods Tubular Uprights And Block Bases				
9100	Supports/carrier, pl type w/ brg pl, sgl, fl mtd, water cooler	EA	121.06	9.15
15117 0010 Traps				
15117 0030 Cast iron, service weight				
15117 2999 P trap, B&S				
3000	Traps, cast iron, service weight, P trap, 2" pipe, B&S	EA	50.48	9.33
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		12.27	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3040	Traps, cast iron, service weight, P trap, 3" pipe, B&S	EA	63.21	11.25
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		17.89	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3060	Traps, cast iron, service weight, P trap, 4" pipe, B&S	EA	76.73	13.48
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		25.33	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3062	5" P-Trap, Cast Iron Fitting	EA	102.06	7.69
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		52.92	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3100	Traps, cast iron, service weight, P trap, 6" pipe, B&S	EA	153.05	17.19
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		73.86	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3120	Traps, cast iron, service weight, P trap, 8" pipe, B&S	EA	397.69	25.61
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		208.61	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3130	Traps, cast iron, service weight, P trap, 10" pipe, B&S	EA	595.05	43.47
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		339.78	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
15117 3134	P trap, B&S, acid resistant			
3136	Acid resistant, cast iron, P trap, 2" pipe, B&S	EA	212.50	9.22
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		125.69	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3138	Acid resistant, cast iron, P trap, 3" pipe, B&S	EA	258.93	11.32
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		154.89	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3140	Acid resistant, cast iron, P trap, 4" pipe, B&S	EA	310.16	13.09
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		188.73	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
15117 3149	P trap, no hub			
3150	Traps, cast iron, service weight, P trap, no hub, 1.5"	EA	41.82	9.01
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		7.57	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3160	Traps, cast iron, service weight, P trap, no hub, 2" pipe	EA	43.57	9.90
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		7.44	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3170	Traps, cast iron, service weight, P trap, no hub, 3" pipe	EA	58.38	10.11
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		14.51	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3180	Traps, cast iron, service weight, P trap, no hub, 4" pipe	EA	74.79	11.35
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		23.97	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3182	5" Cast Iron P-Trap, No Hub	EA	79.04	6.17
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		38.53	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3190	Traps, cast iron, service weight, P trap, no hub, 6" pipe	EA	126.46	12.80
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		55.25	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
15117 3200	P trap, no hub, deep seal			
3202	P trap, deep seal, no hub, CI, w/2 couplings, 2" pipe	EA	52.57	6.21
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		20.03	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3204	P trap, deep seal, no hub, CI, w/2 couplings, 3" pipe	EA	70.15	7.74
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		29.68	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3205	4" CI (Deep Seal) P-Trap, No Hub	EA	82.27	8.44
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		36.48	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
15117 3350	P trap, B&S, deep seal			
3420	Traps, cast iron, 2" pipe, service weight, deep seal trap,	EA	59.90	9.44
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		15.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3440	Traps, cast iron, 3" pipe, service weight, deep seal trap,	EA	79.00	11.28
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		24.55	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3460	Traps, cast iron, 4" pipe, service weight, deep seal trap,	EA	101.41	13.38
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		37.44	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3462	5" P-Trap, Deep Seal, CI Fitting	EA	130.48	14.87
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		55.45	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
3470	Traps, cast iron, 6" pipe, service weight, deep seal trap,	EA	162.89	17.95
3540	Traps, CI, svce wt, deep seal, B&S, for trap with floor cleanout, add		73.62	
3542	For trap primer connection, Add		11.65	
3544	For trap with adjustable clean out Add		98.25	
15117 6732	PVC DW P trap, solvent weld joint			
6733	PVC DW P trap, solvent weld joint, 1.5" pipe	EA	20.15	7.68
6734	PVC DW P trap, solvent weld joint, 2" pipe	EA	22.34	8.09
6735	PVC DW P trap, solvent weld joint, 3" pipe	EA	42.77	8.93
6736	PVC DW P trap, solvent weld joint, 4" pipe	EA	76.16	9.68
6737	3/4" P-Trap, Sch 40 PVC	EA	8.32	3.32
15117 6759	PP DW, dilution trap			
6770	Traps, corrosion resistant, polyprop DW, P trap, 1.5" pipe	EA	41.57	6.24
6780	Traps, corrosion resistant, polyprop DW, P trap, 2" pipe	EA	51.17	7.49
6790	Traps, corrosion resistant, polyprop DW, P trap, 3" pipe	EA	96.31	12.14
6800	Traps, corrosion resistant, polyprop DW, P trap, 4" pipe	EA	118.34	12.74
15117 6999	Trap primer			
7000	Traps, trap primer, flow through type, 1/2" dia	EA	59.01	3.75
7100	Traps, trap primer, w/sediment str, flow through type, 1/2" dia	EA	64.68	4.35
7500	Traps, trap primer distribution unit, 2 openings	EA	61.52	4.84
7990	Trap primer, NPTM 3" inlet	EA	66.76	5.64
15118 0010	Vacuum breakers			
15118 1030	Anti-siphon, brass			
1060	Vacuum breakers, 1/2" size, hot or cold water, anti-siphon,	EA	33.48	5.64
1300	Vacuum breaker, brass, for polished chrome, (1/4" thru 1"), add		10.44	
1080	Vacuum breakers, 3/4" size, hot or cold water, anti-siphon,	EA	39.85	6.47
1300	Vacuum breaker, brass, for polished chrome, (1/4" thru 1"), add		12.36	
1100	Vacuum breakers, 1" size, hot or cold water, anti-siphon, brass	EA	54.45	7.11
1300	Vacuum breaker, brass, for polished chrome, (1/4" thru 1"), add		19.27	
1140	Vacuum breakers, 1.5" size, hot or cold water, anti-siphon,	EA	102.68	9.60
1300	Vacuum breaker, brass, for polished chrome, (1/4" thru 1"), add		39.71	
15119 0010	Vent flashing			
15119 2000	Galvanized with neoprene ring			
2040	Vent flashing, galvanized w/neoprene ring, 2" pipe	EA	20.74	4.73
2050	Vent flashing, galvanized w/neoprene ring, 3" pipe	EA	22.07	4.92
2060	Vent flashing, galvanized w/neoprene ring, 4" pipe	EA	24.46	4.99
2070	Vent flashing, galvanized w/neoprene ring, 6" pipe	EA	35.19	5.11
15119 4000	Lead, 4#, VTR			
4100	Vent flashing, lead, 4#, VTR, 2" pipe	EA	46.24	1.82
4110	Vent flashing, lead, 4#, VTR, 3" pipe	EA	51.53	2.31
4120	Vent flashing, lead, 4#, VTR, 4" pipe	EA	55.47	2.08
4130	Vent flashing, lead, 4#, VTR, 6" pipe	EA	65.75	2.57

15120 Piping

Note: Demolition Costs For Pipe Include The Removal Of All Associated Gittings, Valves, And Insulation. For Individual Fittings, Valves, And Insulation Removal Use The Appropriate Demolition Line Items.

15121 0010 Piping system identification labels

15121 0106 Pipe markers

15121 0110 Plastic snap around Type Plastic Outside Diameters Include Insulation

0114	Pipe marker, plastic snap-on, 1/2" pipe	EA	7.06	
0116	Pipe marker, plastic snap-on, 3/4" pipe	EA	7.06	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0118	Pipe marker, plastic snap-on, 1" pipe	EA	7.06	
0119	1-1/4"OD Snap-On Plas Valve Tag Includes Insulation	EA	15.36	
0120	Pipe marker, plastic snap-on, 2" pipe	EA	7.93	
0121	2-1/2"OD Snap-On Plas Valve Tag Includes Insulation	EA	20.97	
0122	Pipe marker, plastic snap-on, 3" pipe	EA	11.22	
0123	3-1/2"OD Snap-On Plas Valve Tag Includes Insulation	EA	22.10	
0124	Pipe marker, plastic snap-on, 4" pipe	EA	11.94	
0125	4-1/2"OD Snap-On Plas Valve Tag Includes Insulation	EA	22.73	
0126	Pipe marker, plastic snap-on, 6" pipe	EA	12.57	
0127	7" OD Snap-On Plastic Valve Tag Includes Insulation	EA	23.83	
0128	Pipe marker, plastic snap-on, 8" pipe	EA	16.04	
0130	Pipe marker, plastic snap-on, 10" pipe	EA	16.04	
0131	1-1/2"OD Snap-On Plas Valve Tag Includes Insulation	EA	16.58	
0132	5" OD Snap-On Plastic Valve Tag Includes Insulation	EA	22.73	
15121 1110 Self adhesive				
Note: Pressure Sensitive Stick On-Include Arrow Tape-0d Includes Insulation				
1112	1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	EA	17.59	
1113	3/4" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	EA	17.59	
1114	Pipe marker, self adhesive 1" pipe	EA	5.70	
1115	1-1/4" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insu	EA	20.76	
1116	Pipe marker, self adhesive 2" pipe	EA	5.95	
1117	2-1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insu	EA	24.17	
1118	Pipe marker, self adhesive 3" pipe	EA	6.92	
1119	3-1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insu	EA	25.41	
1120	Pipe marker, self adhesive 4" pipe	EA	7.64	
1121	4-1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insu	EA	26.81	
1122	Pipe marker, self adhesive 6" pipe	EA	7.64	
1123	7" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	EA	34.73	
1124	Pipe marker, self adhesive 8" pipe	EA	9.98	
1126	Pipe marker, self adhesive 10" pipe	EA	9.98	
1127	1-1/2" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insu	EA	21.76	
1128	5" OD Press-Sensitive Marker Stick-On w/Arrow Tape Over Insul	EA	30.21	
15121 1300 Reduced Pressure Backflow Preventor				
15123 0010 Piping, testing, nondestructive				
Note: - Testing, Startup, and Checkout Line Items Are Used For Existing Systems Where Necessary. New Systems Include All Necessary Testing, Startup, and Checkout.				
15123 0110 Hydraulic pressure test				
0140	Nondestructive, 0 - 250 LF, 1" - 4" pipe, hydraulic pressure tes	EA	403.20	
0160	Nondestructive, 250 - 500 LF, 1" - 4" pipe, hydraulic pressure	EA	472.75	
0180	Nondestructive, 500 - 1000 LF, 1" - 4" pipe, hydraulic pressure	EA	567.68	
0200	Nondestructive, 1000 - 2000 LF, 1" - 4" pipe, hydraulic pressure	EA	1,071.90	
0320	Nondestructive, 0 - 250 LF, 6" - 10" pipe, hydraulic pressure	EA	567.68	
0340	Nondestructive, 250 - 500 LF, 6" - 10" pipe, hydraulic pressure	EA	1,718.16	
0360	Nondestructive, 500 - 1000 LF, 6" - 10" pipe, hydraulic	EA	2,708.40	
0380	Nondestructive, 1000 - 2000 LF, 6" - 10" pipe, hydraulic	EA	5,142.03	
15123 1000 Pneumatic pressure test, includes soaping joints				
1140	Nondestructive, 0 - 250 LF, 1" - 4" pipe, pneumatic pressure tes	EA	644.12	
1160	Nondestructive, 250 - 500 LF, 1" - 4" pipe, pneumatic pressure	EA	1,058.11	
1180	Nondestructive, 500 - 1000 LF, 1" - 4" pipe, pneumatic pressure	EA	1,302.70	
1200	Nondestructive, 1000 - 2000 LF, 1" - 4" pipe, pneumatic pressure	EA	2,525.89	
1320	Nondestructive, 0 - 250 LF, 6" - 10" pipe, pneumatic pressure	EA	1,275.99	
1340	Nondestructive, 250 - 500 LF, 6" - 10" pipe, pneumatic pressure	EA	1,981.53	
1360	Nondestructive, 500 - 1000 LF, 6" - 10" pipe, pneumatic	EA	3,207.20	
1380	Nondestructive, 1000 - 2000 LF, 6" - 10" pipe, pneumatic	EA	6,346.43	
15123 2000 X-Ray of welds				
2110	Nondestructive X-ray of welds, 2" dia	EA	41.22	
2120	Nondestructive X-ray of welds, 3" dia	EA	41.22	
2130	Nondestructive X-ray of welds, 4" dia	EA	42.91	
2140	Nondestructive X-ray of welds, 6" dia	EA	42.91	
2150	Nondestructive X-ray of welds, 8" dia	EA	50.93	
2160	Nondestructive X-ray of welds, 10" dia	EA	57.22	
15123 3000 Liquid penetration of welds				
3110	Nondestructive liquid penetration of welds, 2" dia	EA	22.74	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3120	Nondestructive liquid penetration of welds, 3" dia	EA	23.38	
3130	Nondestructive liquid penetration of welds, 4" dia	EA	23.71	
3140	Nondestructive liquid penetration of welds, 6" dia	EA	24.05	
3150	Nondestructive liquid penetration of welds, 8" dia	EA	24.97	
3160	Nondestructive liquid penetration of welds, 10" dia	EA	25.34	
15130 Cast Iron Pipe				
15130 5000 Acid Resistant Soil Pipe & Fittings				
5001	Acid Resistant Pipe 2" (7' Lengt hs)	LF	42.83	
5002	Acid Resistant Pipe 3" (7' Lengt hs)	LF	61.56	
5003	Acid Resistant Pipe 4" (7' Lengt hs)	LF	84.93	
5004	Acid Resistant Pipe 6" (7' Lengt hs)	LF	127.44	
15130 5010 1/4 Bends				
5011	1/4 Bend 2", Acid Resistant	EA	68.58	
5012	1/4 Bend 3", Acid Resistant	EA	97.37	
5013	1/4 Bend 4", Acid Resistant	EA	126.80	
5014	1/4 Bend 6", Acid Resistant	EA	370.37	
15130 5020 1/8 Bends				
5021	1/8 Bend 2", Acid Resistant	EA	68.58	
5022	1/8 Bend 3", Acid Resistant	EA	97.37	
5023	1/8 Bend 4", Acid Resistant	EA	126.80	
5024	1/8 Bend 6", Acid Resistant	EA	258.75	
15130 5030 Short Sweeps				
5031	Short Sweep 2", Acid Resistant	EA	107.51	
5032	Short Sweep 3", Acid Resistant	EA	215.66	
5033	Short Sweep 4", Acid Resistant	EA	240.60	
5034	Short Sweep 6", Acid Resistant	EA	477.92	
15130 5040 Sanitary Tap Tees				
5041	San Tap Tee 2" X 1 1/2", Acid Re sistant	EA	98.76	
5042	San Tap Tee 3" X 1 1/2", Acid Re sistant	EA	119.83	
5043	San Tap Tee 3" X 2", Acid Resist ant	EA	136.30	
5044	San Tap Tee 4" X 2", Acid Resist ant	EA	177.40	
5045	San Tap Tee 4" X 3", Acid Resist ant	EA	206.71	
15130 5050 Sanitary Wyes				
5051	San Wye 2", Acid Resistant	EA	103.24	
5052	San Wye 3", Acid Resistant	EA	154.28	
5053	San Wye 4", Acid Resistant	EA	205.85	
5054	San Wye 6", Acid Resistant	EA	368.98	
15130 5060 Sanitary Reducing Wyes				
5061	San Wye 3" X 2", Acid Resistant	EA	125.82	
5062	San Wye 4" X 2", Acid Resistant	EA	153.45	
5063	San Wye 4" X 3", Acid Resistant	EA	190.88	
5064	San Wye 6" X 3", Acid Resistant	EA	318.86	
5065	San Wye 6" X 4", Acid Resistant	EA	329.74	
15130 5070 Sanitary Tees				
5071	San Tee 2", Acid Resistant	EA	131.70	
5072	San Tee 3", Acid Resistant	EA	160.26	
5073	San Tee 4", Acid Resistant	EA	255.26	
5074	San Tee 6", Acid Resistant	EA	390.99	
15130 5080 Sanitary Reducing Tees				
5081	San Tee 3" X 2", Acid Resistant	EA	137.69	
5082	San Tee 4" X 2", Acid Resistant	EA	187.88	
5083	San Tee 4" X 3", Acid Resistant	EA	216.34	
5084	San Tee 6" X 3", Acid Resistant	EA	358.32	
5085	San Tee 6" X 4", Acid Resistant	EA	339.27	
15130 5090 Test Tees				
5091	Test Tee 2", Acid Resistant	EA	314.38	
5092	Test Tee 3", Acid Resistant	EA	377.38	
5093	Test Tee 4", Acid Resistant	EA	458.90	
5094	Test Tee 6", Acid Resistant	EA	727.23	
15130 5100 Reducers				
5101	Reducer 2" X 1 1/2", Acid Resist ant	EA	60.41	
5102	Reducer 3" X 1 1/2", Acid Resist ant	EA	66.39	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5103	Reducer 3" X 2", Acid Resistant	EA	75.39	
5104	Reducer 4" X 2", Acid Resistant	EA	136.78	
5105	Reducer 4" X 3", Acid Resistant	EA	131.47	
5106	Reducer 6" X 3", Acid Resistant	EA	147.36	
5107	Reducer 6" X 4", Acid Resistant	EA	197.73	
15130 5110 Clean Out Plugs				
5111	Clean Out Plug 2", Acid Resistant	EA	69.66	
5112	Clean Out Plug 3", Acid Resistant	EA	110.09	
5113	Clean Out Plug 4", Acid Resistant	EA	190.96	
5114	Clean Out Plug 6", Acid Resistant	EA	386.77	
15130 5120 P-Traps				
5121	P-Trap 2", Acid Resistant	EA	233.32	
5122	P-Trap 3", Acid Resistant	EA	288.01	
5123	P-Trap 4", Acid Resistant	EA	354.01	
15130 5130 Hub Strainers				
5131	Hub Strainer 2", Acid Resistant	EA	92.57	
5132	Hub Strainer 3", Acid Resistant	EA	112.82	
5133	Hub Strainer 4", Acid Resistant	EA	130.91	
15130 7000 High-Silicon Content Cast Iron Pipe And Fittings				
7001	2" (50mm) HSCI Pipe, Hub Without Fittings	LF	28.65	
7002	3" (80mm) HSCI Pipe, Hub Without Fittings	LF	40.19	
7003	4" (10cm) HSCI Pipe, Hub Without Fittings	LF	54.47	
7005	6" (15cm) HSCI Pipe, Hub Without Fittings	LF	89.57	
7006	8" (20cm) HSCI Pipe, Hub Without Fittings	LF	157.13	
7007	10" (25cm) HSCI Pipe, Hub Without Fittings	LF	276.51	
7008	12" (31cm) HSCI Pipe, Hub Without Fittings	LF	491.55	
7009	15" (38cm) HSCI Pipe, Hub Without Fittings	LF	872.59	
15130 7100 High-Silicon Cast Iron Fittings, Hub & Spigot				
15130 7110 Long Sweeps				
7111	2" Long Sweep HSCI Fitting	EA	118.12	
7112	3" Long Sweep HSCI Fitting	EA	152.99	
7113	4" Long Sweep HSCI Fitting	EA	245.26	
7114	6" Long Sweep HSCI Fitting	EA	365.38	
7115	8" Long Sweep HSCI Fitting	EA	830.03	
15130 7120 1/4 Bends				
7121	2" (1/4 Bend) Cast Iron Fitting	EA	71.65	
7122	3" (1/4 Bend) Cast Iron Fitting	EA	91.94	
7123	4" (1/4 Bend) Cast Iron Fitting	EA	114.96	
7124	6" (1/4 Bend) Cast Iron Fitting	EA	293.40	
7125	8" (1/4 Bend) Cast Iron Fitting	EA	656.63	
7126	10" (1/4 Bend) Cast Iron Fitting	EA	991.33	
7127	12" (1/4 Bend) Cast Iron Fitting	EA	1,448.60	
15130 7130 1/8 Bends				
7131	2" (1/8 Bend) Cast Iron Fitting	EA	71.65	
7132	3" (1/8 Bend) Cast Iron Fitting	EA	91.94	
7133	4" (1/8 Bend) Cast Iron Fitting	EA	114.96	
7134	6" (1/8 Bend) Cast Iron Fitting	EA	218.67	
7135	8" (1/8 Bend) Cast Iron Fitting	EA	560.03	
7136	10" (1/8 Bend) Cast Iron Fitting	EA	813.77	
7137	12" (1/8 Bend) Cast Iron Fitting	EA	1,148.03	
15130 7140 Short Sweep				
7141	2" Short Sweep Cast Iron Fitting	EA	95.33	
7142	3" Short Sweep Cast Iron Fitting	EA	163.93	
7143	4" Short Sweep Cast Iron Fitting	EA	184.21	
15130 7150 Sanitary Tee				
7151	2" Sanit Tee Cast Iron Fitting	EA	101.87	
7152	3" Sanit Tee Cast Iron Fitting	EA	126.39	
7153	4" Sanitary Tee Cast Iron Fitting	EA	173.53	
7154	6" Sanitary Tee Cast Iron Fitting	EA	287.17	
7155	8" Sanitary Tee Cast Iron Fitting	EA	848.84	
7156	10" Sanit Tee Cast Iron Fitting	EA	1,199.56	
7157	2"x1-1/2" Sanit Tee HSCI Fitting	EA	95.80	
7158	3"x1-1/2" Sanit Tee HSCI Fitting	EA	110.84	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7159	4"x1-1/2" Sanit Tee HSCI Fitting	EA	140.35	
15130 7160	Sanitary Tee, Reducing			
7161	3"x2"Sanit Tee Cast Iron Fitting	EA	122.95	
7162	4"x2"Sanit Tee Cast Iron Fitting	EA	149.82	
7163	4"x3"Sanit Tee Cast Iron Fitting	EA	163.71	
7164	6"x2"Sanit Tee Cast Iron Fitting	EA	206.08	
7165	6"x3"Sanit Tee Cast Iron Fitting	EA	227.21	
7166	6"x4"Sanit Tee Cast Iron Fitting	EA	252.97	
7167	8"x4"Sanit Tee Cast Iron Fitting	EA	129.50	
7168	8"x6"Sanit Tee Cast Iron Fitting	EA	135.71	
7169	10"x6"Sanit Tee HSCI Fitting	EA	161.80	
7170	10"x8"Sanit Tee HSCI Fitting	EA	181.13	
7171	12"x8"Sanit Tee HSCI Fitting	EA	206.99	
15130 7180	Wye			
7181	2" Wye Cast Iron Fitting	EA	101.03	
7182	3" Wye Cast Iron Fitting	EA	136.41	
7183	4" Wye Cast Iron Fitting	EA	173.46	
7184	6" Wye Cast Iron Fitting	EA	288.62	
7185	8" Wye Cast Iron Fitting	EA	1,054.63	
7186	10" Wye Cast Iron Fitting	EA	194.04	
7187	12" Wye Cast Iron Fitting	EA	232.75	
7188	15" Wye Cast Iron Fitting	EA	279.64	
15130 7190	Wye, Reducing			
7191	3" x 2" Wye Cast Iron Fitting	EA	116.93	
7192	4" x 2" Wye Cast Iron Fitting	EA	135.32	
7193	4" x 3" Wye Cast Iron Fitting	EA	160.28	
7194	6" x 2" Wye Cast Iron Fitting	EA	216.05	
7195	6" x 3" Wye Cast Iron Fitting	EA	253.63	
7196	6" x 4" Wye Cast Iron Fitting	EA	264.81	
7197	8" x 2" Wye Cast Iron Fitting	EA	123.17	
7198	8" x 3" Wye Cast Iron Fitting	EA	627.34	
7199	8" x 4" Wye Cast Iron Fitting	EA	676.12	
7201	8" x 6" Wye Cast Iron Fitting	EA	822.10	
7203	10" x 4" Wye Cast Iron Fitting	EA	155.25	
7204	10" x 6" Wye Cast Iron Fitting	EA	161.80	
7205	10" x 8" Wye Cast Iron Fitting	EA	181.03	
7206	12" x 4" Wye Cast Iron Fitting	EA	181.13	
7207	12" x 6" Wye Cast Iron Fitting	EA	187.68	
7208	12" x 8" Wye Cast Iron Fitting	EA	206.83	
7209	12" x 10" Wye Cast Iron Fitting	EA	220.10	
7211	2"x1-1/2" Wye Cast Iron Fitting	EA	103.10	
7212	3"x1-1/2" Wye Cast Iron Fitting	EA	110.84	
7213	4"x1-1/2" Wye Cast Iron Fitting	EA	130.35	
15130 7220	Double Wye			
7221	2" Double Wye Cast Iron Fitting	EA	77.25	
7222	3" Double Wye Cast Iron Fitting	EA	85.45	
7223	4" Double Wye Cast Iron Fitting	EA	102.53	
7224	6" Double Wye Cast Iron Fitting	EA	127.39	
7225	8" Double Wye Cast Iron Fitting	EA	206.99	
15130 7230	Double Wye, Reducing			
7231	3"x 2" Dbl Wye Cast Iron Fitting	EA	81.35	
7232	4"x 2" Dbl Wye Cast Iron Fitting	EA	89.89	
7233	4"x 3" Dbl Wye Cast Iron Fitting	EA	93.99	
7234	6"x 2" Dbl Wye Cast Iron Fitting	EA	101.99	
7235	6"x 3" Dbl Wye Cast Iron Fitting	EA	106.05	
7236	6"x 4" Dbl Wye Cast Iron Fitting	EA	114.52	
7237	8"x 4" Dbl Wye Cast Iron Fitting	EA	155.25	
7238	8"x 6" Dbl Wye Cast Iron Fitting	EA	168.35	
7239	2"x1-1/2" Dbl Wye HSCI Fitting	EA	72.80	
7241	3"x1-1/2" Dbl Wye HSCI Fitting	EA	76.98	
7242	4"x1-1/2" Dbl Wye HSCI Fitting	EA	85.45	
15130 7250	Combination Wye & 1/8 Bend			
7251	2" Combination Cast Iron Fitting	EA	118.25	
7252	3" Combination Cast Iron Fitting	EA	139.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7253	4" Combination Cast Iron Fitting	EA	203.58	
7254	6" Combination Cast Iron Fitting	EA	312.42	
15130 7260	Combination Wye & 1/8 Bend, Reducing			
7261	3" x 2" Comb Cast Iron Fitting	EA	126.00	
7262	4" x 2" Comb Cast Iron Fitting	EA	156.40	
7263	4" x 3" Comb Cast Iron Fitting	EA	175.77	
7264	6" x 2" Comb Cast Iron Fitting	EA	227.89	
7265	6" x 3" Comb Cast Iron Fitting	EA	280.05	
7266	6" x 4" Comb Cast Iron Fitting	EA	305.99	
7267	10"x6" Comb Cast Iron Fitting	EA	161.42	
7268	10"x8" Comb Cast Iron Fitting	EA	181.13	
7271	2"x1-1/2" Comb Cast Iron Fitting	EA	99.45	
7272	3"x1-1/2" Comb Cast Iron Fitting	EA	114.48	
7273	4"x1-1/2" Comb Cast Iron Fitting	EA	136.71	
15130 7280	Double Combination Wye & 1/8 Bend			
7281	2" Double Comb Cast Iron Fitting	EA	77.25	
7282	3" Double Comb Cast Iron Fitting	EA	85.45	
7283	4" Double Comb Cast Iron Fitting	EA	102.54	
7284	6" Double Comb Cast Iron Fitting	EA	127.41	
15130 7290	Double Combination Wye & 1/8 Bend, Reducing			
7291	3"x2" Dbl Comb Cast Iron Fitting	EA	81.35	
7292	4"x2" Dbl Comb Cast Iron Fitting	EA	89.89	
7293	4"x3" Dbl Comb Cast Iron Fitting	EA	93.99	
7295	6"x4" Dbl Comb Cast Iron Fitting	EA	114.52	
7296	6"x3" Dbl Comb Cast Iron Fitting	EA	106.05	
7297	6"x2" Dbl Comb Cast Iron Fitting	EA	101.99	
7298	3"x1-1/2" Dbl Comb CI Fitting	EA	76.91	
7299	4"x1-1/2" Dbl Comb CI Fitting	EA	85.45	
15130 7330	Straight Tee			
7331	2" Vent Tee Cast Iron Fitting	EA	114.60	
7332	3" Vent Tee Cast Iron Fitting	EA	137.16	
7333	4" Vent Tee Cast Iron Fitting	EA	185.35	
7334	2"x1-1/2" Vent Tee CI Fitting	EA	108.57	
7335	3"x2" Vent Tee CI Fitting	EA	134.20	
7336	4"x2" Vent Tee CI Fitting	EA	160.96	
7337	4"x3" Vent Tee CI Fitting	EA	172.12	
15130 7340	Reducers			
7341	3" x 2" Reducer Cast Iron Fitting	EA	75.31	
7342	4" x 2" Reducer Cast Iron Fitting	EA	117.11	
7343	4" x 3" Reducer Cast Iron Fitting	EA	122.80	
7344	6" x 2" Reducer Cast Iron Fitting	EA	51.16	
7345	6" x 3" Reducer Cast Iron Fitting	EA	135.21	
7346	6" x 4" Reducer Cast Iron Fitting	EA	172.98	
7349	8" x 4" Reducer Cast Iron Fitting	EA	249.85	
7351	8" x 6" Reducer Cast Iron Fitting	EA	266.43	
7353	10"x6" Reducer Cast Iron Fitting	EA	97.29	
7354	10"x8" Reducer Cast Iron Fitting	EA	116.60	
7356	12"x6" Reducer Cast Iron Fitting	EA	110.06	
7357	12"x8" Reducer Cast Iron Fitting	EA	129.37	
7358	12"x10" Reducer Cast Iron Fitting	EA	142.49	
7359	15"x6" Reducer Cast Iron Fitting	EA	125.58	
7363	15"x12" Reducer Cast Iron Fitting	EA	170.77	
7364	2"x1-1/2" Reducer CI Fitting	EA	62.08	
7365	3"x1-1/2" Reducer CI Fitting	EA	67.78	
7366	4"x1-1/2" Reducer CI Fitting	EA	42.73	
15130 7370	P-Traps			
7371	2" P-Trap, Cast Iron Fitting	EA	171.88	
7372	3" P-Trap, Cast Iron Fitting	EA	206.75	
7373	4" P-Trap, Cast Iron Fitting	EA	251.65	
7375	6" P-Trap, Cast Iron Fitting	EA	728.05	
15130 7410	1/6 Bend			
7411	2" (1/6 Bend) HSCI Fitting	EA	38.84	
7412	3" (1/6 Bend) HSCI Fitting	EA	42.73	
7413	4" (1/6 Bend) HSCI Fitting	EA	51.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7414	6" (1/6 Bend) HSCI Fitting	EA	63.76	
7415	8" (1/6 Bend) HSCI Fitting	EA	88.94	
15130 7420	1/16 Bend			
7421	2" (1/16 Bend) HSCI Fitting	EA	71.65	
7422	3" (1/16 Bend) HSCI Fitting	EA	91.94	
7423	4" (1/16 Bend) HSCI Fitting	EA	114.88	
7424	6" (1/16 Bend) HSCI Fitting	EA	63.76	
7425	8" (1/16 Bend) HSCI Fitting	EA	88.94	
7426	10" (1/16 Bend) HSCI Fitting	EA	128.97	
15130 7430	Sanitary Increases			
7431	2"x3" HSCI Sanitary Increases	EA	163.82	
7432	2"x4" HSCI Sanitary Increases	EA	211.21	
7433	2"x6" HSCI Sanitary Increases	EA	118.59	
7434	3"x4" HSCI Sanitary Increases	EA	215.45	
7435	3"x6" HSCI Sanitary Increases	EA	118.59	
7436	4"x6" HSCI Sanitary Increases	EA	250.72	
7437	4"x8" HSCI Sanitary Increases	EA	118.59	
7438	6"x8" HSCI Sanitary Increases	EA	118.59	
7439	8"x10" HSCI Sanitary Increases	EA	138.00	
15130 7440	Double Hubs			
7441	2" Double Hub HSCI Fitting	EA	88.96	
7442	3" Double Hub HSCI Fitting	EA	111.08	
7443	4" Double Hub HSCI Fitting	EA	151.40	
7444	6" Double Hub HSCI Fitting	EA	196.65	
7445	8" Double Hub HSCI Fitting	EA	375.07	
7446	10" Double Hub HSCI Fitting	EA	128.97	
15130 7450	Pipe Plugs			
7451	2" Pipe Plug HSCI Fitting	EA	19.14	
7452	3" Pipe Plug HSCI Fitting	EA	21.53	
7453	4" Pipe Plug HSCI Fitting	EA	25.64	
7454	6" Pipe Plug HSCI Fitting	EA	31.85	
7455	8" Pipe Plug HSCI Fitting	EA	50.83	
7456	12" Pipe Plug HSCI Fitting	EA	77.62	
15130 7460	Cleanout Plugs			
7461	2" Cleanout Plug HSCI Fitting	EA	19.14	
7462	3" Cleanout Plug HSCI Fitting	EA	21.53	
7463	4" Cleanout Plug HSCI Fitting	EA	25.64	
7464	6" Cleanout Plug HSCI Fitting	EA	31.85	
7465	8" Cleanout Plug HSCI Fitting	EA	50.83	
7466	10" Cleanout Plug HSCI Fitting	EA	64.86	
15130 7470	Adapters/ Spigot And Split Flange			
7471	2" Spigot & Split Flange Adapter	EA	85.45	
7472	3" Spigot & Split Flange Adapter	EA	85.45	
7473	4" Spigot & Split Flange Adapter	EA	85.45	
7474	6" Spigot & Split Flange Adapter	EA	118.59	
7475	8" Spigot & Split Flange Adapter	EA	118.59	
15130 7480	Adapters/ Bell And Split Flange			
7481	2" Bell & Split Flange Adapter	EA	85.45	
7482	3" Bell & Split Flange Adapter	EA	85.45	
7483	4" Bell & Split Flange Adapter	EA	85.45	
7484	6" Bell & Split Flange Adapter	EA	118.59	
7485	8" Bell & Split Flange Adapter	EA	118.59	
15130 7490	Combination Cleanout And Test Tee			
7491	2" Comb Cleanout & Test Tee HSCI	EA	85.45	
7492	3" Comb Cleanout & Test Tee HSCI	EA	85.45	
7493	4" Comb Cleanout & Test Tee HSCI	EA	85.45	
15130 7510	Backwater Valves			
7511	3"Backwater Vlv HSCI, Palmer Type	EA	85.45	
7512	4"Backwater Vlv HSCI, Palmer Type	EA	85.45	
7513	6"Backwater Vlv HSCI, Palmer Type	EA	118.59	
7514	8"Backwater Vlv HSCI, Palmer Type	EA	118.59	
15130 7520	S-Traps			
7521	2" S Trap HSCI Fitting	EA	85.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7522	3" S Trap HSCI Fitting	EA	85.45	
7523	4" S Trap HSCI Fitting	EA	85.45	
7524	6" S Trap HSCI Fitting	EA	118.59	
15130 7530	Running Traps			
7531	2" Running Trap W/ Sgl Vent HSCI	EA	85.45	
7532	3" Running Trap W/ Sgl Vent HSCI	EA	85.45	
7533	4" Running Trap W/ Sgl Vent HSCI	EA	85.45	
7534	6" Running Trap W/ Sgl Vent HSCI	EA	118.59	
7535	8" Running Trap W/ Sgl Vent HSCI	EA	118.59	
7536	10" Running Trap W/ Sgl Vent HSCI	EA	138.00	
15130 7540	Floor Drains			
7541	2" Floor Drain HSCI W/SS Strainer	EA	85.45	
7542	3" Floor Drain HSCI W/SS Strainer	EA	85.45	
7543	4" Floor Drain HSCI W/SS Strainer	EA	85.45	
7544	6" Floor Drain HSCI W/SS Strainer	EA	118.59	
15130 7550	Floor Drains With Sediment Basin			
7551	2" Floor Drain HSCI W/SS Strainer & Sediment Basin	EA	85.45	
7552	3" Floor Drain HSCI W/SS Strainer & Sediment Basin	EA	85.45	
7553	4" Floor Drain HSCI W/SS Strainer & Sediment Basin	EA	85.45	
7554	6" Floor Drain HSCI W/SS Strainer & Sediment Basin	EA	118.59	
15130 7560	Floor Drains W Sediment Basin & Intergral Trap			
7561	2" Floor Drain HSCI W/SS Strainer & Sediment Basin, Intergral Trap	EA	85.45	
7562	3" Floor Drain HSCI W/SS Strainer & Sediment Basin, Intergral Trap	EA	85.45	
7563	4" Floor Drain HSCI W/SS Strainer & Sediment Basin, Intergral Trap	EA	85.45	
7564	6" Floor Drain HSCI W/SS Strainer & Sediment Basin, Intergral Trap	EA	118.59	
15130 7570	Floor Drains W Intergral Trap			
7571	2" Floor Drain HSCI W/SS Strainer & Intergral Trap	EA	85.45	
7572	3" Floor Drain HSCI W/SS Strainer & Intergral Trap	EA	85.45	
7573	4" Floor Drain HSCI W/SS Strainer & Intergral Trap	EA	85.45	
7574	6" Floor Drain HSCI W/SS Strainer & Intergral Trap	EA	118.59	
15130 7580	Hub Strainers			
7581	2" Hub Strainer	EA	42.73	
7582	3" Hub Strainer	EA	42.73	
7583	4" Hub Strainer	EA	42.73	
7584	6" Hub Strainer	EA	59.30	
7585	8" Hub Strainer	EA	59.30	
15130 7900	Joint Material Labor Costs For Installation Of L			
7901	Lead (1#/Dia ") Joint Material	LB	0.97	
7902	Oakum(1/8 #/Dia ") Joint Material	LB	1.67	
15130 8000	High-Silicon Content Cast Iron Pipe And Fittings			
8001	1-1/2" (38mm) Cast Iron Pipe With out Hangers & Fittings	LF	22.70	
8002	2" (50mm) Cast Iron Pipe Without Hangers & Fittings	LF	25.81	
8003	3" (80mm) Cast Iron Pipe Without Hangers & Fittings	LF	35.51	
8004	4" (10cm) Cast Iron Pipe Without Hangers & Fittings	LF	44.69	
15130 8010	Long Sweep, No Hub			
8011	1-1/2" HSCI Long Sweep, No Hub	EA	86.45	
8012	2" HSCI Long Sweep, No Hub	EA	93.64	
8013	3" HSCI Long Sweep, No Hub	EA	126.86	
8014	4" HSCI Long Sweep, No Hub	EA	153.11	
15130 8020	1/4 Bend No Hub			
8021	1-1/2" HSCI Ftng (1/4 Bend) NH	EA	50.91	
8022	2" HSCI Ftng (1/4 Bend) No Hub	EA	60.51	
8023	3" HSCI Ftng (1/4 Bend) No Hub	EA	76.86	
8024	4" HSCI Ftng (1/4 Bend) No Hub	EA	99.94	
8025	2" x 1-1/2" HSCI Ftng (1/4 Bend) NH	EA	58.82	
15130 8030	1/8 Bend No Hub			
8031	1-1/2" HSCI (1/8 Bend) No Hub	EA	50.91	
8032	2" HSCI (1/8 Bend) No Hub	EA	62.27	
8033	3" HSCI (1/8 Bend) No Hub	EA	78.82	
8034	4" HSCI (1/8 Bend) No Hub	EA	102.28	
15130 8040	1/6 Bend No Hub			
8041	1-1/2" HSCI (1/6 Bend) No Hub	EA	59.11	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8042	2" HSCI (1/6 Bend) No Hub	EA	73.27	
8043	3" HSCI (1/6 Bend) No Hub	EA	110.58	
8044	4" HSCI (1/6 Bend) No Hub	EA	124.54	
15130 8050	1/16 Bend No Hub			
8051	1-1/2" HSCI (1/16 Bend) No Hub	EA	57.29	
8052	2" HSCI (1/16 Bend) No Hub	EA	69.57	
8053	3" HSCI (1/16 Bend) No Hub	EA	104.34	
8054	4" HSCI (1/16 Bend) No Hub	EA	118.68	
15130 8060	Double Brance Quarter Bend			
8061	1-1/2" HSCI Dbl Branch 1/4, NH	EA	86.51	
15130 8070	Tee, Sanitary Straight No Hub			
8071	1-1/2" HSCI Tee, Sanit Strt, NH	EA	71.93	
8072	2" HSCI Tee, Sanit Straight, NH	EA	88.03	
8073	3" HSCI Tee, Sanit Straight, NH	EA	114.28	
8074	4" HSCI Tee, Sanit Straight, NH	EA	169.96	
15130 8080	Tee, Sanitary Reducing No Hub			
8081	2x1-1/2" HSCI Tee, Sanit Strt, NH	EA	82.66	
8082	3x1-1/2" HSCI Tee, Sanit Strt, NH	EA	99.79	
8083	3" x 2" HSCI Tee, Sanit Red, NH	EA	106.03	
8084	4" x 1-1/2" HSCI Tee, Sanit Red, NH	EA	113.89	
8085	4" x 2" HSCI Tee, Sanit Red, NH	EA	124.58	
8086	4" x 3" HSCI Tee, Sanit Red, NH	EA	134.48	
15130 8090	Wye, Straight No Hub			
8091	1-1/2" HSCI Wye, Straight, NH	EA	72.06	
8092	2" HSCI Wye, Straight, NH	EA	84.39	
8093	3" HSCI Wye, Straight, NH	EA	110.63	
8094	4" HSCI Wye, Straight, NH	EA	169.96	
15130 8110	Wye, Reducing No Hub			
8111	2" x 1-1/2" HSCI Wye, Reducing, NH	EA	82.72	
8112	3" x 1-1/2" HSCI Red Wye, NH	EA	97.05	
8113	3" x 2" HSCI Red Wye, NH	EA	101.64	
8114	4" x 1-1/2" HSCI Red Wye, NH	EA	114.05	
8115	4" x 2" HSCI Red Wye, NH	EA	124.89	
8116	4" x 3" HSCI Red Wye, NH	EA	131.88	
15130 8120	Wye, Double, No Hub			
8121	1-1/2" HSCI Wye, Double, NH	EA	106.68	
8122	2" HSCI Wye, Double, NH	EA	134.47	
8123	3" HSCI Wye, Double, NH	EA	170.20	
8124	4" HSCI Wye, Double, NH	EA	220.45	
8125	2" x 1-1/2" HSCI Wye, Double, NH	EA	117.21	
8126	3" x 1-1/2" HSCI Wye, Double, NH	EA	130.64	
8127	3" x 2" HSCI Wye, Double, NH	EA	154.10	
8128	4" x 2" HSCI Wye, Double, NH	EA	170.14	
8129	4" x 3" HSCI Wye, Double, NH	EA	202.94	
15130 8130	Cross, Sanitary Straight No Hub			
8131	1-1/2" HSCI Cross, Sanit Strt, NH	EA	117.59	
8132	2" HSCI Cross, Sanit Straight, NH	EA	138.04	
8133	3" HSCI Cross, Sanit Straight, NH	EA	194.29	
8134	4" HSCI Cross, Sanit Straight, NH	EA	268.84	
8135	2" x 1-1/2" HSCI Cross, Sanit, NH	EA	126.31	
8136	3" x 1-1/2" HSCI Cross, Sanit, NH	EA	162.51	
8137	3" x 2" HSCI Cross, Sanit, NH	EA	171.39	
8138	4" x 2" HSCI Cross, Sanit, NH	EA	183.79	
8139	4" x 3" HSCI Cross, Sanit, NH	EA	230.92	
15130 8140	Combination, Straight No Hub			
8141	1-1/2" HSCI Comb, Straight, NH	EA	79.08	
8142	2" HSCI Combination, Strt, NH	EA	94.33	
8143	3" HSCI Combination, Strt, NH	EA	113.59	
8144	4" HSCI Combination, Strt, NH	EA	183.53	
15130 8150	Combination, Reducing No Hub			
8151	2" x 1-1/2" HSCI Comb Red, NH	EA	87.24	
8152	3" x 1-1/2" HSCI Comb Red, NH	EA	97.18	
8153	3" x 2" HSCI Comb Reducing, NH	EA	105.27	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8154	4" x 1-1/2" HSCI Comb Red, NH	EA	140.47	
8155	4" x 2" HSCI Comb Reducing, NH	EA	144.02	
8156	4" x 3" HSCI Comb Reducing, NH	EA	160.13	
15130 8160	Combination, Double No Hub			
8161	1-1/2" HSCI Comb, Double, NH	EA	123.88	
8162	2" HSCI Comb, Double, No Hub	EA	154.41	
8163	3" HSCI Comb, Double, No Hub	EA	218.63	
8164	4" HSCI Comb, Double, No Hub	EA	262.62	
15130 8170	Combination, Double, Reducing No Hub			
8171	2"x1-1/2" HSCI Comb, Dbl Red, NH	EA	134.51	
8172	3"x1-1/2" HSCI Comb, Dbl Red, NH	EA	159.78	
8173	3"x2" HSCI Comb, Dbl Reducing, NH	EA	166.83	
8174	4"x2" HSCI Comb, Dbl Reducing, NH	EA	185.61	
8175	4"x3" HSCI Comb, Dbl Reducing, NH	EA	230.92	
15130 8190	Reducer-Increaser, No Hub			
8191	2" x 1-1/2" HSCI Reducer, NH	EA	59.11	
8192	3" x 1-1/2" HSCI Reducer, NH	EA	66.29	
8193	3" x 2" HSCI Reducer, NH	EA	77.78	
8194	4" x 1-1/2" HSCI Reducer, NH	EA	90.57	
8195	4" x 2" HSCI Reducer, NH	EA	95.92	
8196	4" x 3" HSCI Reducer, NH	EA	101.28	
15130 8210	Cleanouts, No-Hub			
8211	2" HSCI Cleanout Tee, NH	EA	113.07	
8212	3" HSCI Cleanout Tee, NH	EA	179.77	
8213	4" HSCI Cleanout Tee, NH	EA	216.82	
8214	1-1/2" HSCI Cleanout Plug, NH	EA	55.37	
8215	2" HSCI Cleanout Plug, NH	EA	64.16	
8216	3" HSCI Cleanout Plug, NH	EA	75.22	
8217	4" HSCI Cleanout Plug, NH	EA	132.42	
15130 8220	Blind Plug, No Hub			
8221	1-1/2" HSCI Blind Plug, NH	EA	24.54	
8222	2" HSCI Blind Plug, NH	EA	28.89	
8223	3" HSCI Blind Plug, NH	EA	31.59	
8224	4" HSCI Blind Plug, NH	EA	40.41	
15130 8230	P Trap, No Hub			
8231	1-1/2" HSCI P-Trap, NH	EA	95.41	
8232	2" HSCI P-Trap, NH	EA	98.79	
8233	3" HSCI P-Trap, NH	EA	121.51	
8234	4" HSCI P-Trap, NH	EA	154.62	
8235	1-1/2" HSCI Running P-Trap, NH	EA	131.14	
8236	2" HSCI Running P-Trap, NH	EA	179.21	
8237	3" HSCI Running P-Trap, NH	EA	216.28	
8238	4" HSCI Running P-Trap, NH	EA	268.71	
15130 8240	Return Bend			
8241	1-1/2" HSCI Return Bend	EA	70.17	
8242	2" HSCI Return Bend	EA	90.90	
15130 8250	Threaded Adapters			
8251	1-1/2"x1-1/2" Thd Adpt Outlet x "MJ"	EA	36.91	
8252	1-1/2"x2" Thd Adpt Outlet x "MJ"	EA	65.05	
8253	2" x 2" Thd Adpt Outlet x "MJ"	EA	49.33	
15130 8260	Centrifugal Drum Traps, Swivel Type			
8261	1-1/2" HSCI Cent Drum Trap, "P" Swivel Type	EA	173.96	
8262	2" HSCI Cent Drum Trap, "P" Swivel Type	EA	272.01	
8263	1-1/2" HSCI Cent Drum Trap, "S" Swivel Type	EA	181.11	
8264	2" HSCI Cent Drum Trap, "S" Swivel Type	EA	272.01	
15130 8270	P-Traps, Swivel Type			
8271	1-1/2" HSCI "P" Swivel Trap, Short	EA	161.97	
8272	2" HSCI "P" Swivel Trap, Short	EA	190.01	
8273	1-1/2" HSCI "P" Swivel Trap, Long	EA	186.59	
8274	1-1/2" HSCI "S" Swivel Trap, Long	EA	404.15	
8275	2" HSCI "S" Swivel Trap, Long	EA	242.85	
15130 8280	Adapter/Hub To Mechanical Joint			
8281	1-1/2"X1-1/2"Adapter/Hub To "MJ"	EA	67.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8282	1-1/2"X2" Adapter/Hub To "MJ"	EA	73.58	
8283	1-1/2"X3" Adapter/Hub To "MJ"	EA	81.66	
8284	1-1/2"X4" Adapter/Hub To "MJ"	EA	87.73	
8285	2"X2" Adapter/Hub To "MJ"	EA	81.68	
8286	2"x3" Adapter/Hub To "MJ"	EA	86.11	
8287	2"x4" Adapter/Hub To "MJ"	EA	93.07	
8288	3"X3" Adapter/Hub To "MJ"	EA	104.24	
8289	4"X4" Adapter/Hub To "MJ"	EA	128.38	
15130 8290	Mechanical Joint Couplings, No Hub			
8291	1-1/2" "MJ" Coupling	EA	21.88	
8292	2" "MJ" Coupling	EA	25.51	
8293	3" "MJ" Coupling	EA	27.33	
8294	4" "MJ" Coupling	EA	30.07	
15130 8310	Mechanical Joint To Lead Adapter			
8311	1-1/2" "MJ" To Lead Adapter	EA	38.58	
8312	2" "MJ" To Lead Adapter	EA	44.10	
15130 8390	Msc. Items			
8391	Sink Outlet, HSCI	EA	164.02	
8392	Stopper, HSCI	EA	62.42	
8393	Overflow, HSCI	EA	115.28	
15130 8410	Floor Drains W Stainless Steel Strainer Plates			
8411	2"HSCI Floor Drain W/SS Strainer	EA	584.58	
8412	3"HSCI Floor Drain W/SS Strainer	EA	591.42	
8413	4"HSCI Floor Drain W/SS Strainer	EA	605.09	
8414	2"HSCI Floor Drain W/SS Strainer & Bucket	EA	721.04	
8415	3"HSCI Floor Drain W/SS Strainer & Bucket	EA	727.88	
8416	4"HSCI Floor Drain W/SS Strainer & Bucket	EA	741.55	
8417	Funnel Attachment, SS	EA	482.51	
15131 0010	Pipe, cast iron, soil, caulking			
15132 0010	Pipe, cast iron, soil, no hangers			
15132 3100	Extra heavy, single hub			
3120	Pipe, CI soil, 5' sections, 2", no hgr/jt, extra heavy, sgl hub	EA	63.95	12.42
3130	Pipe, CI soil, 5' sections, 3", no hgr/jt, extra heavy, sgl hub	EA	73.90	13.20
3140	Pipe, CI soil, 5' sections, 4", no hgr/jt, extra heavy, sgl hub	EA	98.13	14.62
3142	Pipe, CI soil, 5' sections, 5", no hgr/jt, extra heavy, sgl hub	LF	114.04	15.33
3150	Pipe, CI soil, 5' sections, 6", no hgr/jt, extra heavy, sgl hub	EA	152.18	18.97
3160	Pipe, CI soil, 5' sections, 8", no hgr/jt, extra heavy, sgl hub	EA	242.63	31.22
3170	Pipe, CI soil, 5' sections, 10", no hgr/jt, extra heavy, sgl hub	EA	419.16	52.62
3180	Pipe, CI soil, 5' sections, 12", no hgr/jt, extra heavy, sgl hub	EA	546.57	67.01
3182	Pipe, CI soil, 5' sections, 15", no hgr/jt, extra heavy, sgl hub	LF	504.80	82.87
15132 4000	Service weight, no hub, no couplings			
4100	Pipe CI soil, no hub, 1.5" dia, no cplg, no hgr/jt, service	LF	8.41	1.45
4120	Pipe CI soil, no hub, 2" dia, no cplg, no hgr/jt, service weight	LF	8.73	1.42
4140	Pipe CI soil, no hub, 3" dia, no cplg, no hgr/jt, service weight	LF	10.34	1.99
4160	Pipe CI soil, no hub, 4" dia, no cplg, no hgr/jt, service weight	LF	12.47	2.24
4164	5" (12.5cm) Cast Iron Soil Pipe Without Hangers & Fittings	LF	13.19	3.29
4200	Pipe CI soil, no hub, 6" dia, no cplg, no hgr/jt, service weight	LF	18.16	2.87
4220	Pipe CI soil, no hub, 8" dia, no cplg, no hgr/jt, service weight	LF	30.04	4.72
4240	Pipe CI soil, no hub, 10" dia, no cplg, no hgr/jt, service	LF	44.12	5.31
15133 0010	Pipe, cast iron, fittings, soil			
15133 0040	Hub and spigot, lead & oakum joints			
15133 0079	1/4 bend elbow			
0080	CI ftg, svce wt, 2", hub & spigot, lead & oakum jt, 1/4	EA	42.44	7.24
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		4.48	
0120	CI ftg, svce wt, 3", hub & spigot, lead & oakum jt, 1/4	EA	52.55	6.95
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		6.90	
0140	CI ftg, svce wt, 4", hub & spigot, lead & oakum jt, 1/4	EA	62.51	7.81
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		10.04	
0142	5" (1/4 Bend) Cast Iron Fitting	EA	58.52	4.57
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		15.58	
0180	CI ftg, svce wt, 6", hub & spigot, lead & oakum jt, 1/4	EA	84.01	9.43
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		16.49	
0200	CI ftg, svce wt, 8", hub & spigot, lead & oakum jt, 1/4	EA	205.82	12.21

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		47.62	
0220	CI ftg, svce wt, 10", hub & spigot, lead & oakumjt, 1/4	EA	244.84	12.44
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		60.50	
15133 0239	1/4 bend elbow, short sweep			
0240	CI ftg, svce wt, 12", hub & spigot, lead & oakumjt, 1/4	EA	326.44	14.98
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		91.15	
0241	CI ftg, svce wt, 15", hub & spigot, lead & oakumjt, 1/4	EA	796.85	22.40
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		283.14	
0242	CI ftg, svce wt, 2", hub & spigot, lead & oakumjt, 90 deg,	EA	44.25	6.67
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		5.28	
0243	CI ftg, svce wt, 3", hub & spigot, lead & oakumjt, 90 deg,	EA	56.23	7.13
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		8.52	
0244	CI ftg, svce wt, 4", hub & spigot, lead & oakumjt, 90 deg,	EA	64.83	8.02
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		11.06	
0245	CI ftg, svce wt, 6", hub & spigot, lead & oakumjt, 90 deg,	EA	100.42	16.14
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		23.71	
0246	CI ftg, svce wt, 8", hub & spigot, lead & oakumjt, 90 deg,	EA	213.74	24.95
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		51.11	
0247	CI ftg, svce wt, 10", hub & spigot, lead & oakumjt, 90 deg,	EA	335.39	31.33
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		100.34	
0248	CI ftg, svce wt, 12", hub & spigot, lead & oakumjt, 90 deg,	EA	646.17	38.08
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		231.83	
0250	5" Short Sweep Cast Iron Fitting	EA	81.19	13.71
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		17.37	
15133 0251	1/4 bend elbow, long sweep			
0252	CI ftg, svce wt, 2", hub & spigot, lead & oakumjt, 90 deg,	EA	47.48	9.51
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		6.70	
0253	CI ftg, svce wt, 3", hub & spigot, lead & oakumjt, 90 deg,	EA	58.94	11.11
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		9.71	
0254	CI ftg, svce wt, 4", hub & spigot, lead & oakumjt, 90 deg,	EA	72.53	13.02
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		14.45	
0255	CI ftg, svce wt, 6", hub & spigot, lead & oakumjt, 90 deg,	EA	101.84	16.82
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		24.33	
0256	CI ftg, svce wt, 8", hub & spigot, lead & oakumjt, 90 deg,	EA	237.51	24.65
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		61.56	
0257	CI ftg, svce wt, 10", hub & spigot, lead & oakumjt, 90 deg,	EA	341.05	31.00
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		102.83	
0258	CI ftg, svce wt, 12", hub & spigot, lead & oakumjt, 90 deg,	EA	493.38	41.84
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		164.61	
0259	CI ftg, svce wt, 15", hub & spigot, lead & oakumjt, 90 deg,	EA	774.21	57.12
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		273.18	
15133 0339	1/8 bend			
0340	CI ftg, svce wt, 2", hub & spigot, lead & oakumjt, 1/8	EA	40.34	7.52
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		3.56	
0350	CI ftg, svce wt, 3", hub & spigot, lead & oakumjt, 1/8	EA	49.43	8.02
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		5.53	
0360	CI ftg, svce wt, 4", hub & spigot, lead & oakumjt, 1/8	EA	56.63	8.69
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		7.45	
0362	5" (1/8 Bend) Cast Iron Fitting	EA	57.62	6.68
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		12.62	
0400	CI ftg, svce wt, 6", hub & spigot, lead & oakumjt, 1/8	EA	72.98	10.52
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		11.64	
0420	CI ftg, svce wt, 8", hub & spigot, lead & oakumjt, 1/8	EA	172.43	15.24
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		32.93	
0440	CI ftg, svce wt, 10", hub & spigot, lead & oakumjt, 1/8	EA	212.02	15.68
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		46.06	
0460	CI ftg, svce wt, 12", hub & spigot, lead & oakumjt, 1/8	EA	308.89	19.34
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		83.43	
0461	CI ftg, svce wt, 15", hub & spigot, lead & oakumjt, 1/8	EA	525.21	33.40
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		163.62	
15133 0499	Sanitary tee			
0500	CI ftg, svce wt, hub & spigot, lead & oakumjt, san T, 2"	EA	66.50	12.49
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		6.55	
0540	CI ftg, svce wt, hub & spigot, lead & oakumjt, san T, 3"	EA	80.91	12.38
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		10.37	
0620	CI ftg, svce wt, hub & spigot, lead & oakumjt, san T, 4"	EA	92.75	14.30
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		12.43	

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0622	5"Sanitary Tee Cast Iron Fitting	EA	103.36	14.79
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		15.86	
0800	CI ftg, svce wt, hub & spigot, lead & oakum jt, san T, 6"	EA	128.34	15.52
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		24.83	
0880	CI ftg, svce wt, hub & spigot, lead & oakum jt, san T, 8"	EA	298.85	22.21
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		64.02	
0881	CI ftg, svce wt, hub & spigot, lead & oakum jt, san T, 10"	EA	380.34	23.36
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		99.87	
0882	CI ftg, svce wt, hub & spigot, lead & oakum jt, san T, 12"	EA	553.32	26.94
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		164.74	
15133 0900 Sanitary tee, tapped				
0901	CI ftg, svce wt, tapped, 2"x2", hub & spigot, lead & oakum jt,	EA	77.45	19.09
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		8.85	
0902	CI ftg, svce wt, tapped, 3"x2", hub & spigot, lead & oakum jt,	EA	87.14	21.25
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		9.96	
0903	CI ftg, svce wt, tapped, 4"x2", hub & spigot, lead & oakum jt,	EA	101.98	25.48
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		12.43	
15133 0910 Sanitary cross, tapped				
0911	CI ftg, svce wt, tapped, 2"x2", hub&spigot, lead&oakum jt, san	EA	97.79	23.60
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		10.59	
0912	CI ftg, svce wt, tapped, 3"x2", hub&spigot, lead&oakum jt, san	EA	113.51	26.72
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		12.10	
0913	CI ftg, svce wt, tapped, 4"x2", hub&spigot, lead&oakum jt, san	EA	139.18	32.57
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		15.82	
15133 0920 Vent branch (tee)				
0922	CI ftg, svce wt, hub&spigot, lead&oakum jt, vent branch, 2"	EA	80.54	20.83
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		12.73	
0923	3" Vent Tee Cast Iron Fitting	EA	93.61	18.31
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		16.74	
0926	CI ftg, svce wt, hub&spigot, lead&oakum jt, vent branch, 4"	EA	112.16	25.19
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		20.97	
0927	5" Vent Tee Cast Iron Fitting	EA	122.88	26.25
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		24.02	
0928	CI ftg, svce wt, hub&spigot, lead&oakum jt, vent branch, 6"	EA	133.44	27.56
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		27.07	
0929	8" Vent Tee Cast Iron Fitting	EA	167.50	26.46
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		36.28	
15133 0940 Sanitary tee, reducing				
0942	CI ftg, svce wt, 3"x2", hub&spigot, lead&oakum jt, san	EA	73.35	11.89
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		9.57	
0943	CI ftg, svce wt, 4"x3", hub&spigot, lead&oakum jt, san	EA	84.58	13.06
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		11.98	
0944	CI ftg, svce wt, 4"x2", hub&spigot, lead&oakum jt, san	EA	83.09	13.48
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		11.33	
0945	CI ftg, svce wt, 5"x3", hub&spigot, lead&oakum jt, san	EA	132.91	22.26
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		19.80	
0946	CI ftg, svce wt, 6"x4", hub&spigot, lead&oakum jt, san	EA	132.57	19.18
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		29.32	
0947	CI ftg, svce wt, 6"x3", hub&spigot, lead&oakum jt, san	EA	149.66	21.36
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		22.34	
0948	CI ftg, svce wt, 6"x2", hub&spigot, lead&oakum jt, san	EA	109.15	16.21
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		20.18	
0949	CI ftg, svce wt, 8"x6", hub&spigot, lead&oakum jt, san	EA	250.04	22.18
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		57.54	
0951	CI ftg, svce wt, 8"x4", hub&spigot, lead&oakum jt, san	EA	208.06	20.48
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		44.31	
15133 1400 Combination Y and 1/8 bend				
1420	CI ftg, svce wt, hub&spigot, lead&oakum jt, Y&1/8 bend, 2"	EA	70.52	16.89
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		8.32	
1460	CI ftg, svce wt, hub&spigot, lead&oakum jt, Y&1/8 bend, 3"	EA	84.08	18.27
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		11.76	
1520	CI ftg, svce wt, hub&spigot, lead&oakum jt, Y&1/8 bend, 4"	EA	100.39	21.61
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		15.79	
1522	5" Combination Cast Iron Fitting	EA	126.95	24.84
3000	<i>CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add</i>		24.89	
1560	CI ftg, svce wt, hub&spigot, lead&oakum jt, Y&1/8 bend, 6"	EA	148.72	27.59

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		33.79	
1580	CI ftg, svce wt, hub&spigot, lead&oakum jt, Y&1/8 bend, 8"	EA	295.22	39.31
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		80.17	
15133 1584	Combination Y & 1/8 bend, reducing			
1586	CI ftg, svce wt, rdcg, 3"x2", hub&spigot, lead&oakum jt, Y&1/8	EA	73.75	10.79
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		9.74	
1587	CI ftg, svce wt, rdcg, 4"x2", hub&spigot, lead&oakum jt, Y&1/8	EA	82.96	11.92
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		12.60	
1588	CI ftg, svce wt, rdcg, 4"x3", hub&spigot, lead&oakum jt, Y&1/8	EA	90.24	12.95
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		14.47	
1589	CI ftg, svce wt, rdcg, 6"x2", hub&spigot, lead&oakum jt, Y&1/8	EA	118.29	13.92
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		24.20	
1590	CI ftg, svce wt, rdcg, 6"x3", hub&spigot, lead&oakum jt, Y&1/8	EA	124.02	15.27
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		25.56	
1591	CI ftg, svce wt, rdcg, 6"x4", hub&spigot, lead&oakum jt, Y&1/8	EA	136.92	17.11
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		28.60	
1592	CI ftg, svce wt, rdcg, 8"x2", hub&spigot, lead&oakum jt, Y&1/8	EA	194.50	22.55
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		42.64	
1593	CI ftg, svce wt, rdcg, 8"x4", hub&spigot, lead&oakum jt, Y&1/8	EA	207.49	20.18
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		44.06	
1594	CI ftg, svce wt, rdcg, 8"x6", hub&spigot, lead&oakum jt, Y&1/8	EA	254.57	21.96
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		59.53	
1595	5" Reducing Comb Cast Iron Ftng	EA	94.81	12.23
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		16.02	
15133 1599	Double Y			
1600	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 2"	EA	87.65	14.90
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		10.18	
1610	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 3"	EA	109.96	16.25
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		15.94	
1620	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 4"	EA	127.52	17.42
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		21.17	
1640	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 6"	EA	202.15	23.32
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		45.43	
1650	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 8"	EA	437.66	29.78
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		106.69	
1660	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 10"	EA	548.54	31.92
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		146.89	
1670	CI ftg, svce wt, hub&spigot, lead&oakum jt, dbl Y, 12"	EA	715.12	73.21
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		209.69	
15133 1676	Combination double Y & 1/8 bend			
1678	CI ftg, svce wt, dbl Y&1/8 bend, 2", hub&spigot, lead&oakum jt	EA	99.82	21.04
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		15.54	
1680	CI ftg, svce wt, dbl Y&1/8 bend, 3", hub&spigot, lead&oakum jt	EA	120.15	25.37
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		20.43	
1682	CI ftg, svce wt, dbl Y&1/8 bend, 4", hub&spigot, lead&oakum jt	EA	142.80	28.67
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		27.90	
1684	CI ftg, svce wt, dbl Y&1/8 bend, 6", hub&spigot, lead&oakum jt	EA	301.19	47.46
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		89.01	
15133 1690	Combination double Y & 1/8 bend, reducing			
1692	CI ftg, svce wt, rdcg, 3"x2", hub&spigot, lead&oakum dbl	EA	102.65	14.65
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		16.78	
1694	CI ftg, svce wt, rdcg, 4"x2", hub&spigot, lead&oakum dbl	EA	120.71	17.74
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		20.67	
1696	CI ftg, svce wt, rdcg, 4"x3", hub&spigot, lead&oakum dbl	EA	126.37	16.64
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		23.16	
1698	CI ftg, svce wt, rdcg, 6"x4", hub&spigot, lead&oakum dbl	EA	222.32	18.96
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		59.14	
15133 1700	Double Y, reducing			
1702	CI ftg, svce wt, 3"x2", hub&spigot, lead&oakum jt, dbl	EA	114.53	26.86
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		22.01	
1703	CI ftg, svce wt, 4"x2", hub&spigot, lead&oakum jt, dbl	EA	129.77	29.63
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		24.66	
1704	CI ftg, svce wt, 4"x3", hub&spigot, lead&oakum jt, dbl	EA	135.43	30.27
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		27.15	
1705	CI ftg, svce wt, 6"x2", hub&spigot, lead&oakum jt, dbl	EA	170.21	35.93
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		40.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1706	CI ftg, svce wt, 6"x3", hub&spigot, lead&oakum jt, dbl	EA	186.11	38.80
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		45.25	
1707	CI ftg, svce wt, 6"x4", hub&spigot, lead&oakum jt, dbl	EA	193.46	37.89
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		46.45	
1708	CI ftg, svce wt, 8"x4", hub&spigot, lead&oakum jt, dbl	EA	321.14	45.06
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		85.73	
1709	CI ftg, svce wt, 8"x6", hub&spigot, lead&oakum jt, dbl	EA	372.83	57.97
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		105.01	
1711	CI ftg, svce wt, 10"x6", hub&spigot, lead&oakum jt, dbl	EA	433.95	63.03
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		131.90	
1712	CI ftg, svce wt, 10"x8", hub&spigot, lead&oakum jt, dbl	EA	538.18	69.04
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		164.14	
1713	CI ftg, svce wt, 12"x6", hub&spigot, lead&oakum jt, dbl	EA	536.60	68.97
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		173.13	
1714	CI ftg, svce wt, 12"x8", hub&spigot, lead&oakum jt, dbl	EA	734.41	80.52
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		244.42	
15133 1739	Reducer			
1740	CI ftg, svce wt, 3" x 2", hub & spigot, lead & oakum jt, reducer	EA	46.71	11.50
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		5.41	
1750	CI ftg, svce wt, 4" x 2", hub & spigot, lead & oakum jt, reducer	EA	48.49	12.28
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		5.68	
1760	CI ftg, svce wt, 4" x 3", hub & spigot, lead & oakum jt, reducer	EA	52.22	12.88
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		6.76	
1800	CI ftg, svce wt, 6" x 2", hub & spigot, lead & oakum jt, reducer	EA	62.76	15.01
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		10.79	
1810	CI ftg, svce wt, 6" x 3", hub & spigot, lead & oakum jt, reducer	EA	66.28	15.15
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		11.70	
1830	CI ftg, svce wt, 6" x 4", hub & spigot, lead & oakum jt, reducer	EA	91.41	20.52
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		12.37	
1860	CI ftg, svce wt, 8" x 2", hub & spigot, lead & oakum jt, reducer	EA	101.21	18.31
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		19.67	
1880	CI ftg, svce wt, 8" x 3", hub & spigot, lead & oakum jt, reducer	EA	103.51	20.78
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		19.76	
1900	CI ftg, svce wt, 8" x 4", hub & spigot, lead & oakum jt, reducer	EA	105.99	21.25
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		19.86	
1940	CI ftg, svce wt, 8" x 6", hub & spigot, lead & oakum jt, reducer	EA	112.54	22.37
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		20.51	
1942	CI ftg, svce wt, 10" x 4", hub & spigot, lead & oakum jt, reduce	EA	124.51	22.41
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		26.94	
1943	CI ftg, svce wt, 10" x 6", hub & spigot, lead & oakum jt, reduce	EA	130.24	23.68
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		28.30	
1944	CI ftg, svce wt, 10" x 8", hub & spigot, lead & oakum jt, reduce	EA	153.28	27.05
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		30.80	
1945	CI ftg, svce wt, 12" x 4", hub & spigot, lead & oakum jt, reduce	EA	165.08	25.71
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		42.37	
1946	CI ftg, svce wt, 12" x 6", hub & spigot, lead & oakum jt, reduce	EA	175.31	28.54
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		45.49	
1947	CI ftg, svce wt, 12" x 8", hub & spigot, lead & oakum jt, reduce	EA	195.16	33.36
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		47.19	
1948	CI ftg, svce wt, 12" x 10", hub & spigot, lead & oakum jt,	EA	202.55	36.37
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		48.17	
1949	CI ftg, svce wt, 15" x 6", hub & spigot, lead & oakum jt, reduce	EA	285.15	39.59
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		86.11	
1950	CI ftg, svce wt, 15" x 8", hub & spigot, lead & oakum jt, reduce	EA	316.15	44.54
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		91.87	
1951	CI ftg, svce wt, 15" x 10", hub & spigot, lead & oakum jt,	EA	329.15	47.01
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		95.11	
1952	CI ftg, svce wt, 15" x 12", hub & spigot, lead & oakum jt,	EA	343.98	50.00
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		98.87	
15133 2499	Y			
2500	CI ftg, svce wt, hub & spigot, lead & oakum jt, Y, 2"	EA	66.84	17.46
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		6.70	
2510	CI ftg, svce wt, hub & spigot, lead & oakum jt, Y, 3"	EA	81.64	18.52
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		10.69	
2520	CI ftg, svce wt, hub & spigot, lead & oakum jt, Y, 4"	EA	95.86	21.82
3000	CI ftg, svce wt, hub & spigot, lead & oakum jt, for extra hvy, add		13.79	
2522	5" Wye Cast Iron Fitting	EA	118.75	24.02

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		21.27	
2540	CI ftg, svce wt, hub & spigot, lead & oakumjt, Y, 6"	EA	136.83	26.00
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		28.56	
2550	CI ftg, svce wt, hub & spigot, lead & oakumjt, Y, 8"	EA	309.03	43.10
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		68.50	
2560	CI ftg, svce wt, hub & spigot, lead & oakumjt, Y, 10"	EA	423.16	48.04
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		107.47	
2570	CI ftg, svce wt, hub & spigot, lead & oakumjt, Y, 12"	EA	626.64	59.41
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		181.26	
2580	CI ftg, svce wt, hub & spigot, lead & oakumjt, Y, 15"	EA	1,183.67	82.25
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		402.73	
15133 2581 Y, reducing				
2582	CI ftg, svce wt, 3"x2", hub & spigot, lead & oakumjt, Y, rdcg	EA	72.45	12.03
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		9.17	
2584	CI ftg, svce wt, 4"x2", hub & spigot, lead & oakumjt, Y, rdcg	EA	80.64	13.77
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		11.58	
2586	CI ftg, svce wt, 4"x3", hub & spigot, lead & oakumjt, Y, rdcg	EA	86.28	13.48
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		12.73	
2588	CI ftg, svce wt, 6"x2", hub & spigot, lead & oakumjt, Y, rdcg	EA	109.23	15.56
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		20.21	
2590	CI ftg, svce wt, 6"x3", hub & spigot, lead & oakumjt, Y, rdcg	EA	112.70	15.92
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		20.58	
2592	CI ftg, svce wt, 6"x4", hub & spigot, lead & oakumjt, Y, rdcg	EA	114.40	16.50
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		21.33	
2594	CI ftg, svce wt, 8"x2", hub & spigot, lead & oakumjt, Y, rdcg	EA	186.58	20.33
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		39.16	
2596	CI ftg, svce wt, 8"x3", hub & spigot, lead & oakumjt, Y, rdcg	EA	197.35	20.89
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		41.85	
2598	CI ftg, svce wt, 8"x4", hub & spigot, lead & oakumjt, Y, rdcg	EA	193.91	20.81
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		38.09	
2600	CI ftg, svce wt, 8"x6", hub & spigot, lead & oakumjt, Y, rdcg	EA	225.14	23.14
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		46.58	
2602	CI ftg, svce wt, 10"x3", hub & spigot, lead & oakumjt, Y, rdcg	EA	252.77	19.70
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		63.99	
2604	CI ftg, svce wt, 10"x4", hub & spigot, lead & oakumjt, Y, rdcg	EA	260.11	20.52
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		64.73	
2606	CI ftg, svce wt, 10"x6", hub & spigot, lead & oakumjt, Y, rdcg	EA	295.87	23.47
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		71.14	
2608	CI ftg, svce wt, 10"x8", hub & spigot, lead & oakumjt, Y, rdcg	EA	351.33	22.47
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		95.55	
2610	CI ftg, svce wt, 12"x4", hub & spigot, lead & oakumjt, Y, rdcg	EA	360.96	22.62
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		106.34	
2612	CI ftg, svce wt, 12"x6", hub & spigot, lead & oakumjt, Y, rdcg	EA	376.60	24.69
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		110.14	
2614	CI ftg, svce wt, 12"x8", hub & spigot, lead & oakumjt, Y, rdcg	EA	431.68	25.35
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		130.90	
2616	CI ftg, svce wt, 12"x10", hub & spigot, lead & oakumjt, Y, rdcg	EA	525.28	26.24
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		168.15	
2618	CI ftg, svce wt, 15"x4", hub & spigot, lead & oakumjt, Y, rdcg	EA	870.41	25.09
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		315.50	
2620	CI ftg, svce wt, 15"x6", hub & spigot, lead & oakumjt, Y, rdcg	EA	917.34	27.34
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		330.97	
2622	CI ftg, svce wt, 15"x8", hub & spigot, lead & oakumjt, Y, rdcg	EA	928.66	28.41
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		335.95	
2624	CI ftg, svce wt, 15"x10", hub & spigot, lead & oakumjt, Y, rdcg	EA	1,000.13	30.48
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		345.59	
2626	CI ftg, svce wt, 15"x12", hub & spigot, lead & oakumjt, Y, rdcg	EA	1,043.35	32.80
3000	CI ftg, svce wt, hub & spigot, lead & oakumjt, for extra hvy, add		354.11	
15133 3979 Tee				
3980	CI ftg, svce wt, hub & spigot, gskt & jt lab incl, T, 2"	EA	67.06	7.06
4000	CI ftg, svce wt, hub & spigot, gskt & jt lab incl, T, 4"	EA	102.06	10.11
15133 4940 Hub and spigot, gasket				
15133 4940 Gasket and making push-on joint				
4950	CI ftg, hub & spigot, gasket & making push-on joint, 2"	EA	16.68	1.99
4960	CI ftg, hub & spigot, gasket & making push-on joint, 3"	EA	19.52	2.45
4970	CI ftg, hub & spigot, gasket & making push-on joint, 4"	EA	21.95	2.66
4990	CI ftg, hub & spigot, gasket & making push-on joint, 6"	EA	28.55	3.26

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5000	CI ftg, hub & spigot, gasket & making push-on joint, 8"	EA	51.84	4.80
5010	CI ftg, hub & spigot, gasket & making push-on joint, 10"	EA	63.92	5.68
5020	CI ftg, hub & spigot, gasket & making push-on joint, 12"	EA	76.66	7.56
5022	CI ftg, hub & spigot, gasket & making push-on joint, 15"	EA	91.32	8.41
15133 5990	No hub			
15133 6011	1/4 bend, short sweep, with 2 couplings			
6012	1/4 bend, short sweep, no hub, CI, w/2 couplings, 2"	EA	40.49	9.97
6013	1/4 bend, short sweep, no hub, CI, w/2 couplings, 3"	EA	48.94	11.35
6014	1/4 bend, short sweep, no hub, CI, w/2 couplings, 4"	EA	60.65	13.05
6015	5" 90 Degree CI Bend, No Hub Short Sweep	EA	42.16	
6016	1/4 bend, short sweep, no hub, CI, w/2 couplings, 6"	EA	103.56	20.09
6017	1/4 bend, short sweep, no hub, CI, w/2 couplings, 8"	EA	209.57	27.45
6018	1/4 bend, short sweep, no hub, CI, w/2 couplings, 10"	EA	317.58	35.83
15133 6020	1/4 bend, with 2 couplings			
6022	1/4 bend, no hub, CI, w/2 couplings, 1.5"	EA	36.71	9.97
6061	1/4 bend, no hub, CI, w/2 couplings, 2"	EA	39.26	10.18
6081	1/4 bend, no hub, CI, w/2 couplings, 3"	EA	46.96	11.71
6121	1/4 bend, no hub, CI, w/2 couplings, 4"	EA	56.56	13.62
6122	5" CI Fitting (1/4 Bend) No Hub	EA	39.13	10.30
6161	1/4 bend, no hub, CI, w/2 couplings, 6"	EA	99.72	20.41
6182	1/4 bend, no hub, CI, w/2 couplings, 8"	EA	200.78	28.52
15133 6230	1/8 bend, with 2 couplings			
6232	1/8 Bend, no hub, CI, w/2 couplings, 1.5"	EA	35.59	10.18
6234	1/8 Bend, no hub, CI, w/2 couplings, 2"	EA	38.15	10.85
6236	1/8 Bend, no hub, CI, w/2 couplings, 3"	EA	45.31	12.28
6238	1/8 Bend, no hub, CI, w/2 couplings, 4"	EA	53.19	14.37
6242	1/8 Bend, no hub, CI, w/2 couplings, 6"	EA	89.63	22.15
6244	1/8 Bend, no hub, CI, w/2 couplings, 8"	EA	175.12	33.69
6246	1/8 Bend, no hub, CI, w/2 couplings, 10"	EA	260.04	40.89
15133 6254	1/4 bend, long sweep with 2 couplings			
6255	2" CI 90 Deg Bend	EA	45.80	14.22
6256	1/4 Bend, long sweep, no hub, CI, w/2 couplings, 1.5"	EA	43.25	13.76
6257	1-1/2" CI 90 Deg Bend	EA	43.25	13.05
6258	1/4 Bend, long sweep, no hub, CI, w/2 couplings, 2"	EA	45.80	14.44
6259	6" CI 90 Deg Bend	EA	121.79	23.93
6260	4" CI 90 Deg Bend	EA	67.62	18.91
6262	1/4 Bend, long sweep, no hub, CI, w/2 couplings, 3"	EA	53.22	16.32
6264	1/4 Bend, long sweep, no hub, CI, w/2 couplings, 4"	EA	67.62	19.94
6265	1/4 bend, long sweep, no hub, CI, w/2 couplings, 5"	EA	107.83	22.92
6266	3" CI 90 Deg Bend	EA	53.22	17.28
6267	8" CI 90 Deg Bend Long Sweep	EA	91.36	22.80
6268	1/4 Bend, long sweep, no hub, CI, w/2 couplings, 6"	EA	121.79	25.24
6269	5" CI 90 Deg Bend	EA	107.83	22.92
15133 6270	1/4 bend, long sweep with 2 couplings, reducing			
6272	1/4 bend, reducing, 3" x 2", long sweep, no hub, CI, w/2	EA	70.14	13.20
6274	1/4 bend, reducing, 4" x 3", long sweep, no hub, CI, w/2	EA	98.33	16.28
15133 6364	Closest flange or bend			
6366	Closest flange, no hub, CI, 4"	EA	24.41	5.50
6376	Closest bend, no hub, CI, 4" x 16"	EA	72.55	8.48
15133 6490	Sanitary tee, straight with 3 couplings			
6492	Tee, sanitary straight, no hub, CI, w/3 couplings, 1.5"	EA	54.48	14.94
6494	Tee, sanitary straight, no hub, CI, w/3 couplings, 2"	EA	57.44	16.39
6496	Tee, sanitary straight, no hub, CI, w/3 couplings, 3"	EA	67.23	18.41
6498	Tee, sanitary straight, no hub, CI, w/3 couplings, 4"	EA	82.84	22.11
6499	5" CI Tee, Sanit Straight, No Hub	EA	119.06	11.76
6500	Tee, sanitary straight, no hub, CI, w/3 couplings, 6"	EA	151.45	33.76
6502	Tee, sanitary straight, no hub, CI, w/3 couplings, 8"	EA	316.35	49.45
15133 6514	Sanitary tee, tapped with 3 couplings			
6516	Sanitary tee, tapped, no hub CI, w/3 couplings, 2"	EA	64.89	15.97
6518	Sanitary tee, tapped, no hub CI, w/3 couplings, 3"	EA	73.36	17.78
6520	Sanitary tee, tapped, no hub CI, w/3 couplings, 4"	EA	78.16	20.26
15133 6701	Sanitary tee, reducing with 3 couplings			
6702	Tee, sanitary reducing, 2" X 1.5", no hub, CI, w/3 couplings	EA	56.92	15.18

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6703	Tee, sanitary reducing, 3" X 1.5", no hub, CI, w/3 couplings	EA	63.92	17.31
6704	Tee, sanitary reducing, no hub, CI, w/3 couplings, 3" X 2"	EA	64.00	17.92
6705	3"x 4" CI Tee, Sanit Red, No Hub	EA	82.76	21.68
6706	Tee, sanitary reducing, no hub, CI, w/3 couplings, 4" X 2"	EA	75.18	21.22
6708	Tee, sanitary reducing, no hub, CI, w/3 couplings, 4" X 3"	EA	81.49	22.24
6710	5"x 2" CI Tee, Sanit Red, No Hub	EA	103.38	26.05
6711	5"x 3" CI Tee, Sanit Red, No Hub	EA	111.04	27.75
6712	5"x 4" CI Tee, Sanit Red, No Hub	EA	117.01	29.31
6714	Tee, sanitary reducing, no hub, CI, w/3 couplings, 6" X 4"	EA	145.91	33.90
6716	Tee, sanitary reducing, no hub, CI, w/3 couplings, 8" X 6"	EA	289.12	48.27
15133 6772 Y, double reducing with 4 couplings				
6774	Y, double, reducing, no hub, CI, w/4 couplings, 3" x 2"	EA	91.23	23.84
6776	Y, double, reducing, no hub, CI, w/4 couplings, 4" x 2"	EA	101.56	25.51
6778	Y, double, reducing, no hub, CI, w/4 couplings, 4" x 3"	EA	109.42	27.18
6781	Y, double, reducing, no hub, CI, w/4 couplings, 6" x 4"	EA	195.38	40.14
6782	6"CI Comb, Dbl Reducing, No Hub	EA	220.90	41.59
15133 6830 Cross, sanitary, straight with 4 couplings				
6832	Cross, sanitary straight, no hub, CI, w/4 couplings, 1.5"	EA	73.35	20.01
6834	Cross, sanitary straight, no hub, CI, w/4 couplings, 2"	EA	80.23	20.93
6836	Cross, sanitary straight, no hub, CI, w/4 couplings, 3"	EA	98.28	22.53
6838	Cross, sanitary straight, no hub, CI, w/4 couplings, 4"	EA	130.14	26.50
15133 6850 Cross, sanitary, reducing with 4 couplings				
6852	Cross, sanitary reducing, 3" x 2", no hub, CI, w/4 couplings	EA	91.63	23.20
6854	Cross, sanitary reducing, 4" x 2", no hub, CI, w/4 couplings	EA	103.66	27.00
6856	Cross, sanitary reducing, 4" x 3", no hub, CI, w/4 couplings	EA	113.65	29.49
15133 6866 Y, straight with 3 couplings				
6868	Y, straight, no hub, CI, w/3 couplings, 1.5"	EA	54.64	14.58
6870	Y, straight, no hub, CI, w/3 couplings, 2"	EA	57.01	16.43
6872	Y, straight, no hub, CI, w/3 couplings, 3"	EA	68.06	18.34
6874	Y, straight, no hub, CI, w/3 couplings, 4"	EA	111.39	29.59
6875	5" CI Wye, Straight, No Hub	EA	201.61	28.83
6876	Y, straight, no hub, CI, w/3 couplings, 6"	EA	211.11	34.26
6878	Y, straight, no hub, CI, w/3 couplings, 8"	EA	290.57	50.78
6880	Y, straight, no hub, CI, w/3 couplings, 10"	EA	467.60	55.02
15133 6890 Y, reducing with 3 couplings				
6893	2" CI Wye, Reducing, No Hub	EA	33.01	9.04
6894	Y, reducing, no hub, CI, w/3 couplings, 3"	EA	62.50	17.49
6896	Y, reducing, no hub, CI, w/3 couplings, 4"	EA	77.62	21.64
6898	Y, reducing, no hub, CI, w/3 couplings, 6"	EA	140.84	36.62
6900	Y, reducing, no hub, CI, w/3 couplings, 8"	EA	246.44	48.30
6902	Y, reducing, no hub, CI, w/3 couplings, 10"	EA	414.55	60.81
15133 7580 Reducer, with couplings				
7582	Reducer, no hub, CI, w/couplings, 3" x 2"	EA	40.31	12.67
7584	Reducer, no hub, CI, w/couplings, 4" x 2"	EA	45.48	14.09
7586	Reducer, no hub, CI, w/couplings, 4" x 3"	EA	47.92	14.76
7588	Reducer, no hub, CI, w/couplings, 6" x 3"	EA	79.49	22.26
7590	Reducer, no hub, CI, w/couplings, 6" x 4"	EA	90.17	25.06
7592	Reducer, no hub, CI, w/couplings, 6" x 5"	EA	104.61	28.97
7594	Reducer, no hub, CI, w/couplings, 8" x 2"	EA	114.60	32.55
7596	Reducer, no hub, CI, w/couplings, 8" x 3"	EA	120.65	33.80
7598	Reducer, no hub, CI, w/couplings, 8" x 4"	EA	124.71	34.24
7602	Reducer, no hub, CI, w/couplings, 8" x 5"	EA	140.37	37.89
7604	Reducer, no hub, CI, w/couplings, 8" x 6"	EA	144.97	38.93
7606	Reducer, no hub, CI, w/couplings, 10 " x 4"	EA	165.58	34.98
7608	Reducer, no hub, CI, w/couplings, 10" x 6"	EA	182.45	36.94
7610	Reducer, no hub, CI, w/couplings, 10" x 8"	EA	206.69	39.96
7612	5" x 2" CI Reducer, No Hub	EA	63.69	19.31
7614	5" x 3" CI Reducer, No Hub	EA	64.93	19.65
7616	5" x 4" CI Reducer, No Hub	EA	73.85	22.02
15133 7900 Plug, blind, with 1 coupling				
7902	Plug, blind, no hub, CI, w/1 coupling, 1.5"	EA	14.37	4.44
7904	Plug, blind, no hub, CI, w/1 coupling, 2"	EA	15.36	4.58
7906	Plug, blind, no hub, CI, w/1 coupling, 3"	EA	18.79	5.29
7908	Plug, blind, no hub, CI, w/1 coupling, 4"	EA	22.95	6.42

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7909	5" CI Blind Plug, No Hub	EA	28.72	7.59
7910	Plug, blind, no hub, CI, w/1 coupling, 6"	EA	33.25	9.14
7912	Plug, blind, no hub, CI, w/1 coupling, 8"	EA	66.52	14.17
7914	Plug, blind, no hub, CI, w/1 coupling, 10"	EA	90.31	17.09
15133 7920	Combination Y & 1/8 bend, straight w/ couplings			
7922	Combination Y & 1/8 bend, w/couplings 1.5", straight, no	EA	54.96	15.47
7924	Combination Y & 1/8 bend, w/couplings 2", straight, no	EA	57.84	17.03
7926	Combination Y & 1/8 bend, w/couplings 3", straight, no	EA	77.85	21.08
7928	Combination Y & 1/8 bend, w/couplings 4", straight, no	EA	90.56	22.60
7929	Combination Y & 1/8 bend, w/couplings 5", straight, no	EA	156.92	30.17
7930	Combination Y & 1/8 bend, w/couplings 6", straight, no	EA	168.36	36.22
7932	Combination Y & 1/8 bend, w/couplings 8", straight, no	EA	339.69	53.99
7933	10" CI Combination, Strt, No Hub	EA	499.13	70.11
15133 7940	Combination Y & 1/8 bend, reducing w/ couplings			
7942	Combination Y & 1/8 bend, w/cplg 2" x 1.5", reducing, no hub, CI	EA	56.92	16.18
7944	Combination Y & 1/8 bend, w/cplg 3" x 2", reducing, no hub, CI	EA	64.00	17.60
7946	Combination Y & 1/8 bend, w/cplg 4" x 2", reducing, no hub, CI	EA	75.18	20.23
7948	Combination Y & 1/8 bend, w/cplg 4" x 3", reducing, no hub, CI	EA	81.49	21.32
7950	Combination Y & 1/8 bend, w/cplg 6" x 2", reducing, no hub, CI	EA	127.28	29.95
7952	Combination Y & 1/8 bend, w/cplg 6" x 3", reducing, no hub, CI	EA	143.72	31.44
7954	Combination Y & 1/8 bend, w/cplg 6" x 4", reducing, no hub, CI	EA	160.41	42.64
7956	Combination Y & 1/8 bend, w/cplg 8" x 4", reducing, no hub, CI	EA	241.55	41.99
7958	Combination Y & 1/8 bend, w/cplg 8" x 6", reducing, no hub, CI	EA	293.79	43.58
7959	Combination Y & 1/8 bend, w/cplg 10" x 8", reducing, no hub, CI	EA	394.81	64.72
15133 7960	Combination double Y & 1/8 bend, str w/4 cplg			
7962	Combination dbl Y & 1/8 bend, w/4 cplg, 2", straight, no hub,	EA	86.18	22.28
7964	Combination dbl Y & 1/8 bend, w/4 cplg, 3", straight, no hub,	EA	107.19	25.37
7968	Combination dbl Y & 1/8 bend, w/4 cplg, 4", straight, no hub,	EA	149.24	30.83
7969	6" Cast Iron Comb, Double, No Hub	EA	202.73	40.20
15133 7976	Combination double Y & 1/8 bend, rdcg w/4 cplg			
7978	Combination dbl Y & 1/8 bend, w/4 cplg, 3"x2", reducing, no	EA	95.86	22.71
7980	Combination dbl Y & 1/8 bend, w/4 cplg, 4"x2", reducing, no	EA	114.28	27.39
7982	Combination dbl Y & 1/8 bend, w/4 cplg, 4"x3", reducing, no	EA	120.83	25.26
15133 7988	Y, reducing with 3 couplings			
7989	Y, reducing, no hub, CI, w/3 couplings, 3" x 1.5"	EA	62.50	17.17
7990	Y, reducing, no hub, CI, w/3 couplings, 3" x 2"	EA	63.20	17.81
7991	Y, reducing, no hub, CI, w/3 couplings, 4" x 2"	EA	73.15	20.51
7992	Y, reducing, no hub, CI, w/3 couplings, 4" x 3"	EA	79.67	21.61
7993	Y, reducing, no hub, CI, w/3 couplings, 6" x 2"	EA	123.47	31.36
7994	Y, reducing, no hub, CI, w/3 couplings, 6" x 3"	EA	139.05	34.41
7995	Y, reducing, no hub, CI, w/3 couplings, 6" x 4"	EA	155.34	39.20
7996	Y, reducing, no hub, CI, w/3 couplings, 8" x 4"	EA	220.95	43.80
7997	Y, reducing, no hub, CI, w/3 couplings, 8" x 6"	EA	243.05	46.09
7998	Y, reducing, no hub, CI, w/3 couplings, 10" x 4"	EA	343.24	45.54
7999	Y, reducing, no hub, CI, w/3 couplings, 10" x 6"	EA	364.30	48.49
8001	Y, reducing, no hub, CI, w/3 couplings, 10" x 8"	EA	414.55	51.96
15133 8008	Y, double with 4 couplings			
8010	Y, double, no hub, CI, w/4 couplings, 2"	EA	78.52	22.11
8012	Y, double, no hub, CI, w/4 couplings, 3"	EA	98.72	25.48
8014	Y, double, no hub, CI, w/4 couplings, 4"	EA	133.98	28.06
8016	Y, double, no hub, CI, w/4 couplings, 6"	EA	216.42	43.76
8018	Y, double, no hub, CI, w/4 couplings, 8"	EA	459.60	64.91
15133 8300	Coupling, cast iron clamp & neoprene gasket			
8310	Coupling, clamp & neoprene gasket, CI, no hub, 1.5"	EA	20.59	4.44
8320	Coupling, clamp & neoprene gasket, CI, no hub, 2"	EA	21.97	5.22
8330	Coupling, clamp & neoprene gasket, CI, no hub, 3"	EA	24.41	5.82
8340	Coupling, clamp & neoprene gasket, CI, no hub, 4"	EA	28.30	6.81
8341	5" Cast Iron Coupling, No Hub	EA	36.31	6.53
8360	Coupling, clamp & neoprene gasket, CI, no hub, 6"	EA	50.69	9.36
8380	Coupling, clamp & neoprene gasket, CI, no hub, 8"	EA	85.90	13.95
8400	Coupling, clamp & neoprene gasket, CI, no hub, 10"	EA	122.33	17.23
8416	Coupling, clamp & neoprene gasket, 2" x 1.5", reducing, no	EA	34.97	10.93

15140 Copper Pipe & Tubing

Note: Price Does Not Include Hangers Or Fittings

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15141 0010	Pipe, copper, refrigeration			
	Note: Solder Shall Be Silver Solder, Minimum 15% Silver.			
15141 5380	ACR tubing, type L, annealed, no cplg/hangers			
5384	ACR tubing, clean & cap, 3/8", copper, anneal, type L, no	LF	2.58	0.98
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		0.28	
5385	ACR tubing, clean & cap, 1/2", copper, anneal, type L, no	LF	2.90	0.98
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		0.40	
5386	ACR tubing, clean & cap, 5/8", copper, anneal, type L, no	LF	3.17	0.98
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		0.51	
5387	ACR tubing, clean & cap, 3/4", copper, anneal, type L, no	LF	4.03	0.95
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		0.68	
5388	ACR tubing, clean & cap, 7/8", copper, anneal, type L, no	LF	4.34	0.91
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		0.80	
5389	ACR tubing, clean & cap, 1-1/8", copper, anneal, type L, no	LF	5.48	1.47
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		1.14	
5390	ACR tubing, clean & cap, 1-3/8", copper, anneal, type L, no	LF	6.98	1.36
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		1.58	
5391	ACR tubing, clean & cap, 1-5/8", copper, anneal, type L, no	LF	8.34	1.93
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		1.99	
5392	ACR tubing, clean & cap, 2-1/8", copper, anneal, type L, no	LF	11.79	2.27
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		3.20	
5393	ACR tubing, clean & cap, 2-5/8", copper, anneal, type L, no	LF	15.93	3.05
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		4.56	
5394	ACR tubing, clean & cap, 3-1/8", copper, anneal, type L, no	LF	21.16	3.59
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		6.30	
5395	ACR tubing, clean & cap, 4-1/8", copper, anneal, type L, no	LF	31.83	4.05
5440	Pipe, copper, solder jt, ACR tubing, type L, for soft temper, add		10.34	
15141 6000	Refrigeration tubing, dryseal, 50' coils			
6010	Refrigeration tubing, 1/8", no cplg/hgr, copper, dryseal, 50'	LF	1.33	0.61
6011	3/16" Refrig Tubing Copper Dehyd	LF	1.70	0.72
6012	Refrigeration tubing, 1/4", no cplg/hgr, copper, dryseal, 50'	LF	1.64	0.68
6013	5/16" Refrig Tubing Copper Dehyd	LF	1.82	0.72
6014	Refrigeration tubing, 3/8", no cplg/hgr, copper, dryseal, 50'	LF	1.84	0.72
6016	Refrigeration tubing, 1/2", no cplg/hgr, copper, dryseal, 50'	LF	2.02	0.68
6018	Refrigeration tubing, 5/8", no cplg/hgr, copper, dryseal, 50'	LF	2.43	0.87
6020	Refrigeration tubing, 3/4", no cplg/hgr, copper, dryseal, 50'	LF	2.79	0.91
6022	Refrigeration tubing, 7/8", no cplg/hgr, copper, dryseal, 50'	LF	3.62	1.14
6024	Refrigeration tubing, 1-1/8", no cplg/hgr, copper, dryseal, 50'	LF	4.71	1.21
6026	Refrigeration tubing, 1-3/8", no cplg/hgr, copper, dryseal, 50'	LF	6.18	1.40
6028	Refrigeration tubing, 1-5/8", no cplg/hgr, copper, dryseal, 50'	LF	7.86	1.78
15142 0010	Pipe, copper, no couplings or hangers			
15142 2099	Type L			
2100	Pipe copper type L, no coupling no hanger 1/4" dia	LF	3.54	1.25
2410	Pipe, copper type L, for type K tubing, add		0.25	
2416	Pipe, copper type L, for type M tubing, deduct		-0.15	
2140	Pipe copper type L, no coupling no hanger 1/2" dia	LF	4.46	1.44
2410	Pipe, copper type L, for type K tubing, add		0.38	
2416	Pipe, copper type L, for type M tubing, deduct		-0.21	
2180	Pipe copper type L, no coupling no hanger 3/4" dia	LF	6.19	2.19
2410	Pipe, copper type L, for type K tubing, add		0.57	
2416	Pipe, copper type L, for type M tubing, deduct		-0.31	
2200	Pipe copper type L, no coupling no hanger 1" dia	LF	8.15	2.31
2410	Pipe, copper type L, for type K tubing, add		0.78	
2416	Pipe, copper type L, for type M tubing, deduct		-0.42	
2202	1-1/4" I.D. (32mm) Cu Pipe/ Tubing Type L	LF	4.55	1.37
2410	Pipe, copper type L, for type K tubing, add		0.51	
2416	Pipe, copper type L, for type M tubing, deduct		-0.26	
2204	1-1/2" I.D. (40mm) Cu Pipe/ Tubing Type L	LF	5.44	1.37
2410	Pipe, copper type L, for type K tubing, add		0.65	
2416	Pipe, copper type L, for type M tubing, deduct		-0.32	
2260	Pipe copper type L, no coupling no hanger 2" dia	LF	17.17	4.73
2410	Pipe, copper type L, for type K tubing, add		2.15	
2416	Pipe, copper type L, for type M tubing, deduct		-1.03	
2262	2-1/2" I.D. (60mm) Cu Pipe/ Tubing Type L	LF	9.58	2.02
2410	Pipe, copper type L, for type K tubing, add		1.34	
2416	Pipe, copper type L, for type M tubing, deduct		-0.62	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2340	Pipe copper type L, no coupling no hanger 4" dia	LF	38.54	6.42
2410	<i>Pipe, copper type L, for type K tubing, add</i>		6.26	
2416	<i>Pipe, copper type L, for type M tubing, deduct</i>		-2.78	
2342	3" I.D. (80mm) Cu Pipe/Tubing Type L	LF	12.01	2.29
2410	<i>Pipe, copper type L, for type K tubing, add</i>		1.79	
2416	<i>Pipe, copper type L, for type M tubing, deduct</i>		-0.82	
2344	5" I.D. (12.5cm) Cu Pipe/Tubing Type L	LF	36.77	2.87
2410	<i>Pipe, copper type L, for type K tubing, add</i>		7.19	
2416	<i>Pipe, copper type L, for type M tubing, deduct</i>		-3.04	
2380	Pipe copper type L, no coupling no hanger 6" dia	LF	78.50	7.79
2410	<i>Pipe, copper type L, for type K tubing, add</i>		14.31	
2416	<i>Pipe, copper type L, for type M tubing, deduct</i>		-6.16	
2400	Pipe copper type L, no coupling no hanger 8" dia	LF	128.24	9.50
2410	<i>Pipe, copper type L, for type K tubing, add</i>		25.88	
2416	<i>Pipe, copper type L, for type M tubing, deduct</i>		-10.86	
15142 2420 Type L tubing, annealed				
2422	Type L tubing, annealed, no coupling no hanger, 1/4"	LF	3.50	1.32
2424	Type L tubing, annealed, no coupling no hanger, 3/8"	LF	3.81	1.40
2425	Type L tubing, annealed, no hanger, 5/8"	LF	3.16	0.83
2426	Type L tubing, annealed, no coupling no hanger, 1/2"	LF	4.32	1.40
2428	3/4" O.D. Type L Copper Tubing	LF	4.61	1.18
2429	7/8" O.D. Type L Copper Tubing	LF	4.90	1.40
2430	1-1/8" O.D. Type L Copper Tubing	LF	6.14	1.52
2432	1-3/8" O.D. Type L Copper Tubing	LF	7.70	1.56
2434	1-5/8" O.D. Type L Copper Tubing	LF	9.14	1.82
2436	2-1/8" O.D. Type L Copper Tubing	LF	12.67	2.17
15142 3000 Type Dw Copper Tube				
Note: Prices Include Hangers And Fittings. Fittings Are Assumed Every 10 Ft (3M) Not For Use Where Detail Is Available. ASTM B306				
3001	1-1/4"(32mm)Type DW Copper Tube Includes Hangers and Fittings	LF	17.17	6.54
3002	1-1/2"(40mm)Type DW Copper Tube Includes Hangers and Fittings	LF	18.94	7.53
3003	2" (50mm) Type DW Copper Tube Includes Hangers and Fittings	LF	21.22	8.55
3004	3" (80mm) Type DW Copper Tube Includes Hangers and Fittings	LF	30.83	10.39
3005	4" (10cm) Type DW Copper Tube Includes Hangers and Fittings	LF	40.46	14.01
15143 0010 Pipe, copper, fittings				
Note: All Solder Shall Be Lead Free.				
15143 0040 Solder joints, copper x copper				
15143 0069 90_ elbow				
0070	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 1/4"	EA	14.87	6.81
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.06	
0090	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 3/8"	EA	14.87	6.96
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.06	
0100	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 1/2"	EA	15.55	7.49
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.27	
0120	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 3/4"	EA	16.80	7.56
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.39	
0130	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 1"	EA	20.96	9.98
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.84	
0132	1-1/4" 90 Degree Elbow, Copper	EA	24.51	6.69
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.16	
0150	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 1.5"	EA	28.11	12.02
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.49	
0160	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 2"	EA	36.35	15.58
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.13	
0162	2-1/2" 90 Degree Elbow, Copper	EA	43.18	12.72
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.86	
0164	3" 90 Degree Elbow, Copper	EA	53.98	16.78
1390	<i>Pipe, copper fittings, for silver solder, add</i>		5.40	
0200	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 4"	EA	117.16	35.73
1390	<i>Pipe, copper fittings, for silver solder, add</i>		9.46	
0210	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 5"	EA	330.03	58.40
1390	<i>Pipe, copper fittings, for silver solder, add</i>		14.19	
0220	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 6"	EA	436.51	70.78
1390	<i>Pipe, copper fittings, for silver solder, add</i>		14.50	
0230	Pipe, cu ftg, wrought, sldr jt, cu x cu, 90 deg elb, 8"	EA	1,385.73	68.53
1390	<i>Pipe, copper fittings, for silver solder, add</i>		16.32	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15143 0249 45_ elbow				
0250	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 1/4"	EA	15.96	6.54
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.06	
0251	3/8" 45 Degree Elbow, Copper	EA	6.80	2.96
1390	<i>Pipe, copper fittings, for silver solder, add</i>		0.92	
0280	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 1/2"	EA	15.91	7.49
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.27	
0300	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 3/4"	EA	17.24	7.60
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.39	
0310	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 1"	EA	22.27	10.21
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.84	
0311	1-1/4" 45 Degree Elbow, Copper	EA	15.64	6.65
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.11	
0330	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 1.5"	EA	28.77	12.33
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.49	
0340	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 2"	EA	36.68	15.96
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.13	
0350	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 2.5"	EA	62.81	23.92
1390	<i>Pipe, copper fittings, for silver solder, add</i>		7.74	
0351	3" 45 Degree Elbow, Copper	EA	88.23	27.20
1390	<i>Pipe, copper fittings, for silver solder, add</i>		7.89	
0380	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 4"	EA	125.83	35.38
1390	<i>Pipe, copper fittings, for silver solder, add</i>		9.46	
0390	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 5"	EA	313.82	54.00
1390	<i>Pipe, copper fittings, for silver solder, add</i>		14.19	
0400	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 6"	EA	435.69	55.19
1390	<i>Pipe, copper fittings, for silver solder, add</i>		14.50	
0410	Pipe, cu ftg, wrought, sldr jt, cu x cu, 45 deg elb, 8"	EA	1,340.10	62.00
1390	<i>Pipe, copper fittings, for silver solder, add</i>		16.32	
15143 0449 Tee, straight				
0450	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 1/4"	EA	24.08	4.73
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.24	
0452	3/8" Copper Tee - Straight Sweat	EA	24.99	5.25
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.36	
0480	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 1/2"	EA	23.95	5.41
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.49	
0500	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 3/4"	EA	26.85	6.09
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.78	
0510	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 1"	EA	35.02	7.87
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.54	
0512	1-1/4" Copper Tee-Straight Sweat	EA	46.42	9.92
1390	<i>Pipe, copper fittings, for silver solder, add</i>		5.49	
0514	1-1/2" Copper Tee-Straight Sweat	EA	54.85	11.71
1390	<i>Pipe, copper fittings, for silver solder, add</i>		6.17	
0540	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 2"	EA	58.78	12.52
1390	<i>Pipe, copper fittings, for silver solder, add</i>		6.48	
0542	2-1/2" Copper Tee-Straight Sweat	EA	121.29	16.51
1390	<i>Pipe, copper fittings, for silver solder, add</i>		11.74	
0544	3" Copper Tee-Straight Sweat	EA	154.92	19.28
1390	<i>Pipe, copper fittings, for silver solder, add</i>		13.39	
0580	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 4"	EA	217.03	31.79
1390	<i>Pipe, copper fittings, for silver solder, add</i>		17.03	
0590	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 5"	EA	489.07	41.16
1390	<i>Pipe, copper fittings, for silver solder, add</i>		21.29	
0600	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 6"	EA	597.31	42.06
1390	<i>Pipe, copper fittings, for silver solder, add</i>		21.76	
0610	Pipe, cu ftg, wrought, sldr jt, cu x cu, T, 8"	EA	2,107.82	50.47
1390	<i>Pipe, copper fittings, for silver solder, add</i>		26.11	
15143 0611 Tee, reducing				
0612	Pipe, cu ftg, rdg on outlet, 1/4", wrought, sldr jt, cu x cu,	EA	24.17	6.39
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.03	
0613	3/8" Copper Tee-Reducing Sweat	EA	20.28	5.14
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.51	
0614	Pipe, cu ftg, rdg on outlet, 1/2", wrought, sldr jt, cu x cu,	EA	24.80	6.88
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.24	
0616	Pipe, cu ftg, rdg on outlet, 3/4", wrought, sldr jt, cu x cu,	EA	26.69	8.09
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.78	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0617	Pipe, cu ftg, rdgc on outlet, 1", wrought, sldr jt, cu x cu, T	EA	32.27	9.38
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.13	
0618	1-1/4" Copper Tee-Reducing Sweat	EA	37.31	9.87
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.15	
0619	1-1/2" Copper Tee-Reducing Sweat	EA	40.60	11.72
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.56	
0620	Pipe, cu ftg, rdgc on outlet, 2", wrought, sldr jt, cu x cu, T	EA	49.59	13.99
1390	<i>Pipe, copper fittings, for silver solder, add</i>		5.67	
0621	2-1/2" Copper Tee-Reducing Sweat	EA	104.07	18.11
1390	<i>Pipe, copper fittings, for silver solder, add</i>		8.23	
0622	3" Copper Tee-Reducing Sweat	EA	116.23	21.63
1390	<i>Pipe, copper fittings, for silver solder, add</i>		9.29	
15143 0649	Coupling, straight			
0650	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 1/4"	EA	12.84	6.51
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.89	
0652	3/8" Straight Copper Coupling	EA	10.73	5.11
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.57	
0680	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 1/2"	EA	14.06	6.84
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.06	
0700	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 3/4"	EA	14.87	6.77
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.16	
0710	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 1"	EA	18.75	9.31
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.52	
0712	1-1/4" Straight Copper Coupling	EA	18.43	6.70
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.42	
0716	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 1.5"	EA	22.83	10.33
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.03	
0718	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 2"	EA	27.67	12.97
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.49	
0720	2-1/2" Straight Copper Coupling	EA	46.02	14.56
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.97	
0722	3" Straight Copper Coupling	EA	57.82	19.02
1390	<i>Pipe, copper fittings, for silver solder, add</i>		5.70	
0726	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 4"	EA	109.37	40.91
1390	<i>Pipe, copper fittings, for silver solder, add</i>		12.17	
0728	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 5"	EA	156.54	51.09
1390	<i>Pipe, copper fittings, for silver solder, add</i>		14.19	
0731	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 6"	EA	205.75	61.79
1390	<i>Pipe, copper fittings, for silver solder, add</i>		16.32	
0732	Pipe, cu ftg, wrought, sldr jt, cu x cu, cplg, 8"	EA	429.91	86.84
1390	<i>Pipe, copper fittings, for silver solder, add</i>		18.65	
15143 0741	Coupling, reducing concentric			
0742	3/8" Reducing Copper Coupling	EA	11.48	5.71
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.64	
0743	Coupling, copper, wrought, reducing, concentric, 1/2"	EA	13.80	6.58
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.97	
0745	Coupling, copper, wrought, reducing, concentric, 3/4"	EA	15.20	6.77
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.11	
0747	Coupling, copper, wrought, reducing, concentric, 1"	EA	17.61	8.47
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.33	
0748	1-1/4" Reducing Copper Coupling	EA	17.76	6.69
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.14	
0749	Coupling, copper, wrought, reducing, concentric, 1.5"	EA	23.77	10.36
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.84	
0751	Coupling, copper, wrought, reducing, concentric, 2"	EA	29.13	13.12
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.24	
0752	2-1/2" Reducing Copper Coupling	EA	45.04	14.18
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.12	
0755	Coupling, copper, wrought, reducing, concentric, 4"	EA	114.96	39.03
1390	<i>Pipe, copper fittings, for silver solder, add</i>		10.64	
0757	Coupling, copper, wrought, reducing, concentric, 5"	EA	258.13	63.82
1390	<i>Pipe, copper fittings, for silver solder, add</i>		17.40	
0759	Coupling, copper, wrought, reducing, concentric, 6"	EA	343.59	68.39
1390	<i>Pipe, copper fittings, for silver solder, add</i>		18.65	
0761	Coupling, copper, wrought, reducing, concentric, 8"	EA	498.30	73.57
1390	<i>Pipe, copper fittings, for silver solder, add</i>		20.08	
15143 0771	Cap, sweat			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0772	3/8" Cap, Copper, Sweat	EA	6.60	3.93
1390	<i>Pipe, copper fittings, for silver solder, add</i>		0.94	
0773	Cap, copper, wrought, sweat, 1/2"	EA	7.88	4.31
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.13	
0775	Cap, copper, wrought, sweat, 3/4"	EA	8.50	4.58
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.19	
0777	Cap, copper, wrought, sweat, 1"	EA	10.74	4.92
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.42	
0778	1-1/4" Cap, Copper, Sweat	EA	10.71	2.95
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.31	
0779	Cap, copper, wrought, sweat, 1.5"	EA	14.29	6.01
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.75	
0781	Cap, copper, wrought, sweat, 2"	EA	18.56	7.26
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.06	
0782	2-1/2" Cap, Copper, Sweat	EA	22.43	4.65
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.99	
0783	3" Cap, Copper, Sweat	EA	36.65	5.30
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.59	
15143 0791 Flange, sweat				
0793	Flange, copper, wrought, sweat, 3"	EA	98.00	10.46
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.87	
0795	Flange, copper, wrought, sweat, 4"	EA	139.27	7.52
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.73	
0797	Flange, copper, wrought, sweat, 5"	EA	246.71	12.60
1390	<i>Pipe, copper fittings, for silver solder, add</i>		7.10	
0799	Flange, copper, wrought, sweat, 6"	EA	277.54	12.55
1390	<i>Pipe, copper fittings, for silver solder, add</i>		7.25	
0801	Flange, copper, wrought, sweat, 8"	EA	359.98	14.14
1390	<i>Pipe, copper fittings, for silver solder, add</i>		8.16	
15143 0810 Copper - Sweat Companion Flanges				
0812	2" Copper Flange, Sweat	EA	41.48	5.91
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.76	
0814	2-1/2" Copper Flange, Sweat	EA	93.27	20.23
1390	<i>Pipe, copper fittings, for silver solder, add</i>		9.48	
0816	3" Copper Flange, Sweat	EA	113.91	25.50
1390	<i>Pipe, copper fittings, for silver solder, add</i>		11.94	
0818	4" Copper Flange, Sweat	EA	152.79	34.66
1390	<i>Pipe, copper fittings, for silver solder, add</i>		16.25	
0820	5" Copper Flange, Sweat	EA	221.92	44.71
1390	<i>Pipe, copper fittings, for silver solder, add</i>		20.94	
0822	6" Copper Flange, Sweat	EA	313.91	70.11
1390	<i>Pipe, copper fittings, for silver solder, add</i>		32.88	
0824	8" Copper Flange, Sweat	EA	499.94	78.14
1390	<i>Pipe, copper fittings, for silver solder, add</i>		41.88	
15143 0849 Unions				
0850	Union, copper, wrought, copper x copper, 1/4"	EA	21.21	7.49
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.16	
0852	3/8" Copper Union, Straight CXC	EA	20.17	6.24
1390	<i>Pipe, copper fittings, for silver solder, add</i>		1.86	
0880	Union, copper, wrought, copper x copper, 1/2"	EA	19.81	8.24
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.39	
0900	Union, copper, wrought, copper x copper, 3/4"	EA	21.70	8.59
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.52	
0910	Union, copper, wrought, copper x copper, 1"	EA	28.85	6.62
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.03	
0912	1-1/4" Copper Union, Straight CXC	EA	34.20	6.43
1390	<i>Pipe, copper fittings, for silver solder, add</i>		2.57	
0930	Union, copper, wrought, copper x copper, 1.5"	EA	45.02	8.36
1390	<i>Pipe, copper fittings, for silver solder, add</i>		3.78	
0940	Union, copper, wrought, copper x copper, 2"	EA	64.00	10.29
1390	<i>Pipe, copper fittings, for silver solder, add</i>		4.54	
0942	2-1/2" Copper Union, Straight CXC	EA	121.07	12.90
1390	<i>Pipe, copper fittings, for silver solder, add</i>		6.19	
0944	3" Copper Union, Straight CXC	EA	255.40	16.30
1390	<i>Pipe, copper fittings, for silver solder, add</i>		7.41	
15143 0979 Adapters, copper x male				
0980	Adapter, copper, wrought, copper x male, 1/4" IPS	EA	16.48	6.62

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1390	Pipe, copper fittings, for silver solder, add		1.89	
0982	3/8" Copper Adapter, Male	EA	13.38	5.94
1390	Pipe, copper fittings, for silver solder, add		1.57	
1000	Adapter, copper, wrought, copper x male, 1/2" IPS	EA	14.59	7.45
1390	Pipe, copper fittings, for silver solder, add		2.06	
1010	Adapter, copper, wrought, copper x male, 3/4" IPS	EA	15.79	7.68
1021	For Each Extra Column Assembly 60 In Section Or Less Add		1.55	
1023	For Basket Strainer, Galv. SteelPipe Sizes 10 In And Larger Add		0.19	
1390	Pipe, copper fittings, for silver solder, add		2.16	
1020	Adapter, copper, wrought, copper x male, 1" IPS	EA	20.19	7.87
1021	For Each Extra Column Assembly 60 In Section Or Less Add		1.95	
1023	For Basket Strainer, Galv. SteelPipe Sizes 10 In And Larger Add		0.27	
1390	Pipe, copper fittings, for silver solder, add		2.52	
1022	1-1/4" Copper Adapter, Male	EA	22.99	7.30
1021	For Each Extra Column Assembly 60 In Section Or Less Add		2.16	
1023	For Basket Strainer, Galv. SteelPipe Sizes 10 In And Larger Add		0.37	
1390	Pipe, copper fittings, for silver solder, add		2.42	
1040	Adapter, copper, wrought, copper x male, 1.5" IPS	EA	25.92	8.81
1021	For Each Extra Column Assembly 60 In Section Or Less Add		2.48	
1023	For Basket Strainer, Galv. SteelPipe Sizes 10 In And Larger Add		0.37	
1390	Pipe, copper fittings, for silver solder, add		3.03	
1050	Adapter, copper, wrought, copper x male, 2" IPS	EA	32.97	9.79
1021	For Each Extra Column Assembly 60 In Section Or Less Add		3.10	
1023	For Basket Strainer, Galv. SteelPipe Sizes 10 In And Larger Add		0.52	
1390	Pipe, copper fittings, for silver solder, add		3.49	
15143 1214 Adapters, copper x female				
1216	Adapter, copper, wrought, copper x female IPS, 1/2"	EA	15.14	7.45
1390	Pipe, copper fittings, for silver solder, add		2.06	
1217	3/8" Copper Adapter, Female	EA	4.90	
1390	Pipe, copper fittings, for silver solder, add		0.61	
1218	Adapter, copper, wrought, copper x female IPS, 3/4"	EA	16.33	7.64
1390	Pipe, copper fittings, for silver solder, add		2.16	
1220	Adapter, copper, wrought, copper x female IPS, 1"	EA	20.74	8.06
1390	Pipe, copper fittings, for silver solder, add		2.52	
1221	1-1/4" Copper Adapter, Female	EA	8.31	2.66
1390	Pipe, copper fittings, for silver solder, add		0.92	
1222	Adapter, copper, wrought, copper x female IPS, 1.5"	EA	30.25	8.77
1390	Pipe, copper fittings, for silver solder, add		3.03	
1224	Adapter, copper, wrought, copper x female IPS, 2"	EA	36.98	10.06
1390	Pipe, copper fittings, for silver solder, add		3.49	
15143 1500 Dielectric Fittings				
15143 1510 Dielectric Unions, Copper x Female Iron Pipe Thread				
1511	1/2" Die Union, Copper x Female 1 Pt	EA	9.77	2.01
1512	3/4" Die Union, Copper x Female 1 Pt	EA	11.67	2.70
1513	1" Die Union, Copper x Female 1 Pt	EA	15.64	3.25
1514	1-1/4" Die Union, Copper x Female 1 Pt	EA	23.50	4.55
1515	1-1/2" Die Union, Copper x Female 1 Pt	EA	30.10	5.30
1516	2" Die Union, Copper x Female 1 Pt	EA	40.17	6.63
15143 1520 Dielectric Unions, Female Brass Thread x Iron Pipe Thread				
1521	1/2" Die Union, Female Brs Thd x 1 Pt	EA	12.09	2.01
1522	3/4" Die Union, Female Brs Thd x 1 Pt	EA	15.50	2.70
1523	1" Die Union, Female Brs Thd x 1 Pt	EA	20.70	3.25
1524	1-1/4" Die Union, Female Brs Thd x 1 Pt	EA	30.20	4.55
1525	1-1/2" Die Union, Female Brs Thd x 1 Pt	EA	38.40	5.30
1526	2" Die Union, Female Brs Thd x 1 Pt	EA	49.90	6.63
15143 1530 Dielectric Unions, Female Iron Pipe Thread x Iron Pipe Thread				
1531	1/2" Die Union, Female 1 Pt x 1 Pt	EA	10.62	2.01
1532	3/4" Die Union, Female 1 Pt x 1 Pt	EA	13.07	2.70
1533	1" Die Union, Female 1 Pt x 1 Pt	EA	16.01	3.25
1534	1-1/4" Die Union, Female 1 Pt x 1 Pt	EA	22.20	4.55
1535	1-1/2" Die Union, Female 1 Pt x 1 Pt	EA	28.82	5.30
1536	2" Die Union, Female 1 Pt x 1 Pt	EA	39.14	6.63
15143 1540 Dielectric Flanges, Copper x Female Iron Pipe Thread				
1541	2-1/2" Die Flange, Copper x Female 1 Pt	EA	111.10	23.41
1542	3" Die Flange, Copper x Female 1 Pt	EA	138.90	29.46
1543	4" Die Flange, Copper x Female 1 Pt	EA	197.76	41.19

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15143 1550 Dielectric Flanges, Copper x Female Iron Pipe Thread x Iron Pipe Thread				
1551	2-1/2" Die Flange, Female 1 Pt x 1 Pt	EA	112.09	23.41
1552	3" Die Flange, Female 1 Pt x 1 Pt	EA	146.53	29.46
1553	4" Die Flange, Female 1 Pt x 1 Pt	EA	285.80	41.19
15143 1600 6" Copper Fittings With Silver Solder Joints Wrought Unless Cast Brass Is Indicated.				
1601	6" Cast Brass Tee	EA	412.36	54.69
1602	6" Copper Expansion Joint	EA	297.58	27.34
1603	6" Copper Coupling	EA	191.13	41.02
1604	6" Cast Brass Reducer	EA	196.81	41.02
1605	6" Copper 90 Degree Elbow	EA	300.06	41.02
1606	6" Copper 45 Degree Elbow	EA	380.09	41.02
1607	6" Cast Brass Flanges	EA	233.83	27.34
1608	6" Copper Cap	EA	196.81	41.02
1609	6" Copper Cross	EA	774.94	68.36
15143 1700 8" Copper Fittings With Silver Solder Joints Wrought Unless Cast Brass Is Indicated.				
1701	8" Cast Brass Tee	EA	1,157.27	71.78
1702	8" Copper Expansion Joint	EA	926.39	43.07
1703	8" Copper Coupling	EA	358.27	43.07
1704	8" Cast Brass Reducer	EA	492.35	43.07
1705	8" Copper 90 Degree Elbow	EA	806.24	43.07
1706	8" Copper 45 Degree Elbow	EA	801.04	43.07
1707	8" Cast Brass Flanges	EA	664.26	28.71
1708	8" Copper Cap	EA	488.48	57.42
15143 1800 ACR fittings				
Note: Solder Shall Be Silver Solder, Minimum 15% Silver. Fittings Shall Be Used Only When Directed By The Scope Of Work.				
15143 1802 Tee, straight				
1808	ACR fittings, tee, straight, copper, 5/8"	EA	29.50	
1810	ACR fittings, tee, straight, copper, 3/4"	EA	26.92	
1812	ACR fittings, tee, straight, copper, 7/8"	EA	40.83	
1814	ACR fittings, tee, straight, copper, 1-1/8"	EA	35.40	
1816	ACR fittings, tee, straight, copper, 1-3/8"	EA	41.14	
1818	ACR fittings, tee, straight, copper, 1-5/8"	EA	48.22	
1820	ACR fittings, tee, straight, copper, 2-1/8"	EA	59.98	
1822	ACR fittings, tee, straight, copper, 2-5/8"	EA	104.82	
1824	ACR fittings, tee, straight, copper, 3-1/8"	EA	131.18	
1826	ACR fittings, tee, straight, copper, 4-1/8"	EA	226.62	
15143 1830 90_ elbow				
1836	ACR fittings, 90 deg elbow, copper, 5/8"	EA	18.26	
1838	ACR fittings, 90 deg elbow, copper, 3/4"	EA	16.84	
1840	ACR fittings, 90 deg elbow, copper, 7/8"	EA	24.82	
1842	ACR fittings, 90 deg elbow, copper, 1-1/8"	EA	21.04	
1844	ACR fittings, 90 deg elbow, copper, 1-3/8"	EA	23.41	
1846	ACR fittings, 90 deg elbow, copper, 1-5/8"	EA	28.32	
1848	ACR fittings, 90 deg elbow, copper, 2-1/8"	EA	36.72	
1850	ACR fittings, 90 deg elbow, copper, 2-5/8"	EA	61.16	
1852	ACR fittings, 90 deg elbow, copper, 3-1/8"	EA	76.15	
1854	ACR fittings, 90 deg elbow, copper, 4-1/8"	EA	119.53	
15143 1860 Coupling				
1866	ACR fittings, coupling, copper, 5/8"	EA	15.28	
1868	ACR fittings, coupling, copper, 3/4"	EA	15.01	
1870	ACR fittings, coupling, copper, 7/8"	EA	18.01	
1872	ACR fittings, coupling, copper, 1-1/8"	EA	18.01	
1874	ACR fittings, coupling, copper, 1-3/8"	EA	19.91	
1876	ACR fittings, coupling, copper, 1-5/8"	EA	22.94	
1878	ACR fittings, coupling, copper, 2-1/8"	EA	27.85	
1880	ACR fittings, coupling, copper, 2-5/8"	EA	47.65	
1882	ACR fittings, coupling, copper, 3-1/8"	EA	58.70	
1884	ACR fittings, coupling, copper, 4-1/8"	EA	110.56	
15143 3500 Compression joint fittings, incl nuts & sleeves				
15143 3709 Union				
3710	Union, 1/8", compression joint fitting, incl nuts & sleeves	EA	12.84	5.75
3750	Union, 3/8", compression joint fitting, incl nuts & sleeves	EA	14.35	6.54
3760	Union, 1/2", compression joint fitting, incl nuts & sleeves	EA	14.70	6.43

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3780	Union, 5/8", compression joint fitting, incl nuts & sleeves	EA	15.67	6.77
15143 3819	Union tee			
3820	Union tee, compression joint fitting, 1/8", incl nuts &	EA	21.00	8.36
3860	Union tee, compression joint fitting, 3/8", incl nuts &	EA	21.92	9.08
3870	Union tee, compression joint fitting, 1/2", incl nuts &	EA	22.58	8.40
3872	Union tee, compression joint fitting, 5/8", incl nuts &	EA	28.04	9.57
15143 3909	Union elbow			
3910	Union elbow, 1/4", compression joint fitting, incl nuts &	EA	14.14	6.13
3930	Union elbow, 3/8", compression joint fitting, incl nuts &	EA	14.85	6.47
3940	Union elbow, 1/2", compression joint fitting, incl nuts &	EA	15.55	6.28
3942	Union elbow, 5/8", compression joint fitting, incl nuts &	EA	17.74	6.58
15143 3979	Female connector			
3980	Female connector, incl nuts & sleeves, 1/8", compression joint	EA	12.61	5.86
4032	Female connector, incl nuts & sleeves, 3/8", compression joint	EA	14.95	6.84
4042	Female connector, incl nuts & sleeves, 1/2", compression joint	EA	15.35	6.84
4052	Female connector, incl nuts & sleeves, 5/8", compression joint	EA	16.48	7.19
15143 4089	Male connector			
4090	Male connector, incl nuts & sleeves, 1/8", compression joint	EA	12.41	5.64
4170	Male connector, incl nuts & sleeves, 3/8", compression joint	EA	14.46	6.50
4200	Male connector, incl nuts & sleeves, 1/2", compression joint	EA	14.80	6.62
4212	Male connector, incl nuts & sleeves, 5/8", compression joint	EA	16.48	6.88
15143 4500	Copper Pipe And Hangers			
Note: ASTM B42, All Connections Are Based On Lead Free Solder. Price Includes Pipe And Hangers On 5 Feet Average.				
15143 4500	Copper Pipe Pipe Based On I.D. Size			
4502	1/2" I.D. (12mm) Cu Pipe/Tubing Type L	LF	8.41	3.35
4504	3/4" I.D. (20mm) Cu Pipe/Tubing Type L	LF	9.55	3.69
4506	1" I.D. (25mm) Cu Pipe/Tubing Type L	LF	11.45	4.33
4508	1-1/4" I.D. (32mm) Cu Pipe/ Tubing Type L	LF	14.29	5.36
4512	1-1/2" I.D. (40mm) Cu Pipe/ Tubing Type L	LF	14.17	5.02
4514	2" I.D. (50mm) Cu Pipe/Tubing Type L	LF	18.47	6.35
4516	2-1/2" I.D. (60mm) Cu Pipe/ Tubing Type L	LF	26.38	9.02
4518	3" I.D. (80mm) Cu Pipe/Tubing Type L	LF	30.55	10.08
4522	4" I.D. (10cm) Cu Pipe/Tubing Type L	LF	44.26	14.29
4524	5" I.D. (12.5cm) Cu Pipe/Tubing Type L	LF	60.15	17.16
4526	6" I.D. (15cm) Cu Pipe/Tubing Type L	LF	71.35	18.94
4528	8" I.D. (15cm) Cu Pipe/Tubing	LF	87.47	19.55
15143 4800	Flare joint fittings - refrigeration fittings			
15143 5210	Union, with nuts			
5212	Union, brass, flare joint, refrigeration, incl nuts, 3/8"	EA	17.18	8.40
5214	Union, brass, flare joint, refrigeration, incl nuts, 1/2"	EA	18.98	9.19
5216	Union, brass, flare joint, refrigeration, incl nuts, 5/8"	EA	21.42	10.14
15143 5220	90_ elbow, with nuts			
5222	90 deg Elbow, brass, 3/8", flare joint, refrigeration, incl nuts	EA	18.71	8.93
5224	90 deg Elbow, brass, 1/2", flare joint, refrigeration, incl nuts	EA	21.13	9.87
5226	90 deg Elbow, brass, 5/8", flare joint, refrigeration, incl nuts	EA	24.38	10.59
15143 5230	Tee, with nuts			
5232	Tee, brass, flare joint, refrigeration, incl nuts, 3/8"	EA	27.92	14.03
5234	Tee, brass, flare joint, refrigeration, incl nuts, 1/2"	EA	30.28	15.05
5236	Tee, brass, flare joint, refrigeration, incl nuts, 5/8"	EA	35.77	17.28
15143 5240	Cross, with nuts			
5242	Cross, brass, flare joint, refrigeration, incl nuts, 3/8"	EA	39.65	19.44
5244	Cross, brass, flare joint, refrigeration, incl nuts, 1/2"	EA	45.83	21.94
15143 5259	Long flare nuts			
5260	Long flare nut, 3/16", brass, flare joint, refrigeration	EA	7.63	3.89
5290	Long flare nut, 3/8", brass, flare joint, refrigeration	EA	8.90	4.16
5300	Long flare nut, 1/2", brass, flare joint, refrigeration	EA	9.69	4.50
5310	Long flare nut, 5/8", brass, flare joint, refrigeration	EA	11.67	5.26
15143 5379	Short flare nuts			
5380	Short flare nut, 3/16", brass, flare joint, refrigeration	EA	7.49	3.93
5410	Short flare nut, 3/8", brass, flare joint, refrigeration	EA	8.35	4.09
5420	Short flare nut, 1/2", brass, flare joint, refrigeration	EA	8.83	4.31
5430	Short flare nut, 5/8", brass, flare joint, refrigeration	EA	9.65	4.65

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15143 5894 Connector, male, 1/2 union, with nut				
5896	Connector, male, 3/8", 1/2 union, brass, flare joint, incl	EA	17.10	8.32
5898	Connector, male, 1/2", 1/2 union, brass, flare joint, incl	EA	19.19	9.26
5900	Connector, male, 5/8", 1/2 union, brass, flare joint, incl	EA	21.09	9.95
15143 5904 Connector, female, 1/2 union, with nut				
5906	Connector, female, incl nuts, 3/8", 1/2 union, brass, flare	EA	17.40	8.43
5908	Connector, female, incl nuts, 1/2", 1/2 union, brass, flare	EA	19.21	9.07
5910	Connector, female, incl nuts, 5/8", 1/2 union, brass, flare	EA	21.17	10.02
15144 4200 Wrought Copper Solder Fittings				
15144 4210 Coupling - C x C				
4211	1/4" Coupling	EA	6.37	
4212	3/8" Coupling	EA	6.45	
4213	1/2" Coupling	EA	6.63	
15144 4220 90 Degree Elbow - C x C				
4221	1/4" 90 Degree Elbow	EA	6.78	
4222	3/8" 90 Degree Elbow	EA	6.83	
4223	1/2" 90 Degree Elbow	EA	6.46	
15144 4230 45 Degree Elbow - C x C				
4231	1/4" 45 Degree Elbow	EA	8.09	
4232	3/8" 45 Degree Elbow	EA	7.51	
4233	1/2" 45 Degree Elbow	EA	6.74	
15144 4240 Tee - C x C x C				
4241	1/4" Tee	EA	12.37	
4242	3/8" Tee	EA	12.77	
4243	1/2" Tee	EA	10.84	
15144 4250 Adapter - C x M				
4251	1/4" Adapter CxM	EA	9.14	
4252	3/8" Adapter CxM	EA	7.84	
4253	1/2" Adapter CxM	EA	6.75	
15144 4260 Adapter - C x F				
4261	1/4" Adapter CxF	EA	8.06	
4262	3/8" Adapter CxF	EA	8.09	
4263	1/2" Adapter CxF	EA	6.75	
15144 4270 Cap - C				
4271	1/4" Cap	EA	4.36	
4272	3/8" Cap	EA	4.50	
4273	1/2" Cap	EA	4.23	
15145 Corrosion Resistant Pipe				
15145 0010 Pipe, corrosion resistant				
15145 2200 Pipe acid resistant, drain, B&S joint				
Note: no couplings or hangers				
2204	Pipe, corrosion/acid resistant, 7' L, 2", no cplg/hgr B&S joint	LF	42.02	3.58
2206	Pipe, corrosion/acid resistant, 7' L, 3", no cplg/hgr B&S joint	LF	56.57	3.62
2208	Pipe, corrosion/acid resistant, 7' L, 4", no cplg/hgr B&S joint	LF	75.08	3.87
2210	Pipe, corrosion/acid resistant, 7' L, 6", no cplg/hgr B&S joint	LF	120.59	4.64
15145 4980 Pipe polypropylene, acid resistant, fire retard				
Note: no couplings or hangers				
5000	Pipe, crsn/acid res, fire ret sched 40, 1.5", no cplg/hgr,	LF	9.73	2.98
5100	Pipe, crsn/acid res, fire ret sched 40, 2", no cplg/hgr, plstc,	LF	11.04	3.16
5120	Pipe, crsn/acid res, fire ret sched 40, 3", no cplg/hgr, plstc,	LF	15.06	3.37
5140	Pipe, crsn/acid res, fire ret sched 40, 4", no cplg/hgr, plstc,	LF	18.20	3.97
5160	Pipe, crsn/acid res, fire ret sched 40, 6", no cplg/hgr, plstc,	LF	27.13	5.25
15146 0010 Pipe, fittings, corrosion resistant				
15146 0030 Iron alloy bell & spigot				
15146 0509 1/4 and 1/16 bend				
0510	1/4 & 1/16 bend, iron alloy, acid res, bell & spigot, 2"	EA	79.62	
0520	1/4 & 1/16 bend, iron alloy, acid res, bell & spigot, 3"	EA	106.20	
0530	1/4 & 1/16 bend, iron alloy, acid res, bell & spigot, 4"	EA	128.56	
0540	1/4 & 1/16 bend, iron alloy, acid res, bell & spigot, 6"	EA	355.65	
15146 0560 Drain, 1/4 bend, short sweep				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0562	1/4 bend, short sweep drain, B&S joint, 2", iron alloy, acid res	EA	110.52	
0564	1/4 bend, short sweep drain, B&S joint, 3", iron alloy, acid res	EA	201.21	
0566	1/4 bend, short sweep drain, B&S joint, 4", iron alloy, acid res	EA	220.69	
0568	1/4 bend, short sweep drain, B&S joint, 6", iron alloy, acid res	EA	418.04	
15146 0619	1/8 bend			
0620	1/8 bend, iron alloy, acid res, B&S joint, 2"	EA	79.62	
0640	1/8 bend, iron alloy, acid res, B&S joint, 3"	EA	106.20	
0650	1/8 bend, iron alloy, acid res, B&S joint, 4"	EA	128.56	
0660	1/8 bend, iron alloy, acid res, B&S joint, 6"	EA	256.05	
15146 0699	Tee, sanitary			
0700	Tee, sanitary, 2", drain, iron alloy, acid res, bell & spigot	EA	114.49	
0710	Tee, sanitary, 3", drain, iron alloy, acid res, bell & spigot	EA	155.89	
0720	Tee, sanitary, 4", drain, iron alloy, acid res, bell & spigot	EA	209.04	
0730	Tee, sanitary, 6", drain, iron alloy, acid res, bell & spigot	EA	333.77	
15146 0790	Drain, tee, sanitary, reducing			
0794	Tee, reducing, B&S joint, 3"x2", sanitary, drain, iron alloy,	EA	137.58	
0796	Tee, reducing, B&S joint, 4"x2", sanitary, drain, iron alloy,	EA	167.94	
0798	Tee, reducing, B&S joint, 4"x3", sanitary, drain, iron alloy,	EA	184.30	
0800	Tee, reducing, B&S joint, 6"x3", sanitary, drain, iron alloy,	EA	315.22	
0802	Tee, reducing, B&S joint, 6"x4", sanitary, drain, iron alloy,	EA	290.90	
15146 0812	Drain, tee, test			
0814	Tee, test, B&S joint, 2", sanitary, drain, iron alloy,	EA	283.81	
0816	Tee, test, B&S joint, 3", sanitary, drain, iron alloy,	EA	338.22	
0818	Tee, test, B&S joint, 4", sanitary, drain, iron alloy,	EA	402.86	
0820	Tee, test, B&S joint, 4", sanitary, drain, iron alloy,	EA	813.08	
15146 1799	Y, sanitary			
1800	Y, sanitary, drain, iron alloy, acid res, bell & spigot, 2"	EA	123.34	
1820	Y, sanitary, drain, iron alloy, acid res, bell & spigot, 3"	EA	176.25	
1830	Y, sanitary, drain, iron alloy, acid res, bell & spigot, 4"	EA	257.37	
1840	Y, sanitary, drain, iron alloy, acid res, bell & spigot, 6"	EA	380.04	
15146 1880	Y, sanitary, reducing			
1886	Y, reducing, B&S joint, 3" x 2", sanitary, drain, iron alloy,	EA	129.89	
1888	Y, reducing, B&S joint, 4" x 2", sanitary, drain, iron alloy,	EA	149.10	
1890	Y, reducing, B&S joint, 4" x 3", sanitary, drain, iron alloy,	EA	179.49	
1892	Y, reducing, B&S joint, 6" x 3", sanitary, drain, iron alloy,	EA	292.81	
1894	Y, reducing, B&S joint, 6" x 4", sanitary, drain, iron alloy,	EA	305.33	
15146 1900	Drain, reducer			
1902	Reducer, sanitary, 2" x 1.5", drain, iron alloy, acid res, B&S	EA	69.15	
1904	Reducer, sanitary, 3" x 1.5", drain, iron alloy, acid res, B&S	EA	77.29	
1906	Reducer, sanitary, 3" x 2", drain, iron alloy, acid res, B&S	EA	84.03	
1908	Reducer, sanitary, 4" x 2", drain, iron alloy, acid res, B&S	EA	134.05	
1910	Reducer, sanitary, 4" x 3", drain, iron alloy, acid res, B&S	EA	140.16	
1912	Reducer, sanitary, 6" x 3", drain, iron alloy, acid res, B&S	EA	154.51	
1914	Reducer, sanitary, 6" x 4", drain, iron alloy, acid res, B&S	EA	200.97	
15146 1920	Plug, clean out			
1922	Plug, clean out, sanitary, iron alloy, acid resistant, 2"	EA	66.80	
1924	Plug, clean out, sanitary, iron alloy, acid resistant, 3"	EA	101.08	
1926	Plug, clean out, sanitary, iron alloy, acid resistant, 4"	EA	168.06	
1928	Plug, clean out, sanitary, iron alloy, acid resistant, 6"	EA	357.50	
15146 1940	Hub strainer			
1942	Hub strainer, sanitary, iron alloy, acid resistant, 2"	EA	81.23	
1944	Hub strainer, sanitary, iron alloy, acid resistant, 3"	EA	96.27	
1946	Hub strainer, sanitary, iron alloy, acid resistant, 4"	EA	107.45	
1948	Hub strainer, sanitary, iron alloy, acid resistant, 6"	EA	158.51	
15146 4000	Polypropylene, acid resistant non-pressure			
15146 4049	1/4 bend			
4050	1/4 bend, polypropylene, acid res, non-pressure, 1.5"	EA	35.66	6.35
4060	1/4 bend, polypropylene, acid res, non-pressure, 2"	EA	41.10	6.28
4080	1/4 bend, polypropylene, acid res, non-pressure, 3"	EA	69.04	7.70
4090	1/4 bend, polypropylene, acid res, non-pressure, 4"	EA	97.14	10.71
4110	1/4 bend, polypropylene, acid res, non-pressure, 6"	EA	209.04	15.65
15146 4249	1/8 bend			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4250	1/8 bend, polypropylene, acid res, non-pressure, 1.5"	EA	35.38	6.35
4260	1/8 bend, polypropylene, acid res, non-pressure, 2"	EA	53.75	8.51
4280	1/8 bend, polypropylene, acid res, non-pressure, 3"	EA	70.17	7.63
4290	1/8 bend, polypropylene, acid res, non-pressure, 4"	EA	65.68	8.59
4310	1/8 bend, polypropylene, acid res, non-pressure, 6"	EA	140.23	11.74
15146 4400 Tee, sanitary				
4420	Tee, san, polypropylene, acid res, non-pressure, 1.5"	EA	51.09	8.59
4430	Tee, san, polypropylene, acid res, non-pressure, 2"	EA	58.29	8.44
4450	Tee, san, polypropylene, acid res, non-pressure, 3"	EA	108.26	11.64
4460	Tee, san, polypropylene, acid res, non-pressure, 4"	EA	137.78	14.58
4480	Tee, san, polypropylene, acid res, non-pressure, 6"	EA	240.30	20.65
15146 4489 Tee, sanitary, reducing				
4490	Tee, san, 2"x1.5", reducing, polypropylene, acid res,	EA	58.27	8.02
4491	Tee, san, 3"x3"x1.5", reducing, polypropylene, acid res,	EA	98.15	10.89
4492	Tee, san, 3"x2", reducing, polypropylene, acid res,	EA	98.15	10.47
4493	Tee, san, 4"x4"x2", reducing, polypropylene, acid res,	EA	128.54	12.77
4494	Tee, san, 4"x3", reducing, polypropylene, acid res,	EA	132.81	13.23
4496	Tee, san, 6"x4", reducing, polypropylene, acid res,	EA	239.95	20.51
15146 4649 Wye, 45_				
4650	Wye 45 deg, polypropylene, acid res, non-pressure, 1.5"	EA	51.48	7.72
4652	Wye 45 deg, polypropylene, acid res, non-pressure, 2"	EA	63.95	8.55
4653	Wye 45 deg, polypropylene, acid res, non-pressure, 3"	EA	104.81	10.86
4654	Wye 45 deg, polypropylene, acid res, non-pressure, 4"	EA	140.04	14.51
4656	Wye 45 deg, polypropylene, acid res, non-pressure, 6"	EA	310.48	22.28
15146 4660 Wye, reducing				
4662	Wye, rdcg, sched 40, 2"x2"x1.5", polypropylene, acid res,	EA	58.41	6.60
4665	3"x3"x1-1/2"Wye, Red Polyprop S40	EA	71.71	7.73
4666	Wye, rdcg, sched 40, 3"x3"x2", polypropylene, acid res,	EA	93.17	9.54
4668	Wye, rdcg, sched 40, 4"x4"x2", polypropylene, acid res,	EA	116.57	10.79
4669	Wye, rdcg, sched 40, 4"x4"x3", polypropylene, acid res,	EA	125.47	11.99
4671	Wye, rdcg, sched 40, 6"x6"x2", polypropylene, acid res,	EA	187.64	12.67
4673	Wye, rdcg, sched 40, 6"x6"x3", polypropylene, acid res,	EA	209.19	13.98
4675	Wye, rdcg, sched 40, 6"x6"x4", polypropylene, acid res,	EA	220.67	18.20
15146 4678 Combination Y & 1/8 bend				
4681	Comb Y&1/8 bend, sched 40, 1.5", polypropylene, acid res,	EA	58.89	8.70
4683	Comb Y&1/8 bend, sched 40, 2", polypropylene, acid res,	EA	59.08	9.58
4684	Comb Y&1/8 bend, sched 40, 3", polypropylene, acid res,	EA	101.21	13.06
4685	Comb Y&1/8 bend, sched 40, 4", polypropylene, acid res,	EA	133.54	16.85
15146 4689 Combination Y & 1/8 bend, reducing				
4692	Comb Y&1/8 bend, sched 40, 2"x2"x1.5", rdcg, polyprop, acid	EA	58.22	8.87
4694	Comb Y&1/8 bend, sched 40, 3"x3"x1.5", rdcg, polyprop, acid	EA	88.56	11.46
4695	Comb Y&1/8 bend, sched 40, 3"x3"x2", rdcg, polyprop, acid	EA	96.29	12.21
4697	Comb Y&1/8 bend, sched 40, 4"x4"x2", rdcg, polyprop, acid	EA	117.96	13.66
4699	Comb Y&1/8 bend, sched 40, 4"x4"x3", rdcg, polyprop, acid	EA	128.00	15.19
15146 4710 Hub adapter				
4712	Hub adapter, polypropylene, 1.5", acid res, non-press, sched	EA	35.65	4.01
4713	Hub adapter, polypropylene, 2", acid res, non-press, sched 40	EA	38.13	5.11
4714	Hub adapter, polypropylene, 3", acid res, non-press, sched 40	EA	55.90	6.78
4715	Hub adapter, polypropylene, 4", acid res, non-press, sched 40	EA	73.42	8.62
4716	6" Hub Adapter Polyprop Sch 40	EA	82.07	8.74
15146 4719 Mechanical joint adapter				
4721	Mech joint adapter, sched 40, 1.5", polypropylene, acid res,	EA	35.73	4.31
4722	Mech joint adapter, sched 40, 2", polypropylene, acid res,	EA	37.97	4.86
4723	Mech joint adapter, sched 40, 3", polypropylene, acid res,	EA	55.26	6.24
4724	Mech joint adapter, sched 40, 4", polypropylene, acid res,	EA	72.81	8.12
15146 4728 Couplings				
4731	Coupling, polypropylene, 1.5", acid res, non-press, sched 40	EA	29.91	4.95
4732	Coupling, polypropylene, acid res, non-press, sched 40, 2"	EA	34.00	4.97
4733	Coupling, polypropylene, acid res, non-press, sched 40, 3"	EA	50.97	6.28
4734	Coupling, polypropylene, acid res, non-press, sched 40, 4"	EA	65.54	6.14
4736	Coupling, polypropylene, acid res, non-press, sched 40, 6"	EA	103.67	12.52

15147 Hot Water/Steam/Condensate Piping Insulation

Note: Cost Does Not Include Fittings - For Fittings Add 3 LF for Each Fitting And 4 LF For Each Flanged Joint. Fitting Allowance Includes Cost of PVC Covers. Insulation Demolition Cost Includes the Fitting Demolition Cost.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15147 1000	Fiberglass Pipe Covering With Fire Retardant Jackets For Concealed Areas.			
15147 1000	1" Thick Fib Cover w/ fire retardant jacket			
1010	1/2"D Pipe, 1"Thk Fib Pipe Cover w/Fire Retardant Jackets	LF	2.96	1.25
1101	<i>For Equipment or Congested Area ADD</i>		0.56	
1012	3/4"D Pipe, 1"Thk Fib Pipe Cover w/Fire Retardant Jackets	LF	3.07	1.25
1101	<i>For Equipment or Congested Area ADD</i>		0.57	
1014	1"D Pipe, 1"Thk Fib Pipe Cover w/Fire Retardant Jackets	LF	3.10	1.25
1101	<i>For Equipment or Congested Area ADD</i>		0.58	
1016	1-1/4"D Pipe, 1"Thk Fib Pipe Cvr w/Fire Retardant Jackets	LF	3.21	1.21
1101	<i>For Equipment or Congested Area ADD</i>		0.59	
1018	1-1/2"D Pipe, 1"Thk Fib Pipe Cvr w/Fire Retardant Jackets	LF	3.46	1.53
1101	<i>For Equipment or Congested Area ADD</i>		0.64	
1020	2"D Pipe, 1"Thk Fib Pipe Cover w/Fire Retardant Jackets	LF	3.64	1.53
1101	<i>For Equipment or Congested Area ADD</i>		0.67	
1022	2-1/2"D Pipe, 1"Tk Fib Pipe Cover w/Fire Retardant Jackets	LF	3.84	1.53
1101	<i>For Equipment or Congested Area ADD</i>		0.70	
1024	3"D Pipe, 1" Thk Fbgs Pipe Cover w/Fire Retardant Jackets	LF	4.06	1.49
1101	<i>For Equipment or Congested Area ADD</i>		0.74	
1026	4"D Pipe, 1" Thk Fbgs Pipe Cover w/Fire Retardant Jackets	LF	4.66	1.49
1101	<i>For Equipment or Congested Area ADD</i>		0.84	
1028	6"D Pipe, 1-1/2"Thk Fbgs Pipe Cvr w/Fire Retardant Jackets	LF	6.61	2.05
1101	<i>For Equipment or Congested Area ADD</i>		1.17	
15147 1030	2" Thick Fib Cover w/ fire retardant jacket			
1032	8"D Pipe, 2" Thk Fbgs Pipe Cover w/Fire Retardant Jackets	LF	10.45	2.53
1101	<i>For Equipment or Congested Area ADD</i>		1.80	
1034	10"D Pipe, 2" Thk Fbgs Pipe Cover w/Fire Retardant Jackets	LF	12.40	1.98
1101	<i>For Equipment or Congested Area ADD</i>		2.14	
1036	12"D Pipe, 2" Thk Fbgs Pipe Cover w/Fire Retardant Jackets	LF	14.03	3.65
1101	<i>For Equipment or Congested Area ADD</i>		2.43	
15147 1040	1/2" Thick Fib Cover w/ Standard Jacket			
1042	1/2 In Dia. Pipe, 1/2 In Thick	LF	1.88	0.87
1101	<i>For Equipment or Congested Area ADD</i>		0.34	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.19	
1044	3/4 In Dia. Pipe, 1/2 In Thick	LF	1.96	0.87
1101	<i>For Equipment or Congested Area ADD</i>		0.36	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.22	
1046	1 In Dia. Pipe, 1/2 In Thick	LF	2.07	0.86
1101	<i>For Equipment or Congested Area ADD</i>		0.38	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.23	
1048	1-1/4 In Dia. Pipe, 1/2 In Thick	LF	2.17	0.90
1101	<i>For Equipment or Congested Area ADD</i>		0.39	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.25	
1050	1-1/2 In Dia. Pipe, 1/2 In Thick	LF	2.26	0.90
1101	<i>For Equipment or Congested Area ADD</i>		0.41	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.27	
1052	2 In Dia. Pipe, 1/2 In Thick	LF	2.41	0.90
1101	<i>For Equipment or Congested Area ADD</i>		0.43	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.29	
1054	2-1/2 In Dia. Pipe, 1/2 In Thick	LF	2.55	0.94
1101	<i>For Equipment or Congested Area ADD</i>		0.46	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.33	
1056	3 In Dia. Pipe, 1/2 In Thick	LF	2.73	0.94
1101	<i>For Equipment or Congested Area ADD</i>		0.49	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.37	
1058	4 In Dia. Pipe, 1/2 In Thick	LF	3.21	1.08
1101	<i>For Equipment or Congested Area ADD</i>		0.56	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.47	
1060	6 In Dia. Pipe, 1/2 In Thick	LF	3.80	1.18
1101	<i>For Equipment or Congested Area ADD</i>		0.67	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.57	
15147 1080	1" Thick Fib Cover w/ Standard Jacket			
1082	6 In Dia. Pipe, 1 In Thick	LF	5.65	1.49
1101	<i>For Equipment or Congested Area ADD</i>		0.97	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		0.98	
1084	8 In Dia. Pipe, 1 In Thick	LF	9.43	1.91
1101	<i>For Equipment or Congested Area ADD</i>		1.57	
1102	<i>For Calcium Silicte With Canvas Jacket ADD</i>		1.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1086	10 In Dia. Pipe, 1 In Thick	LF	11.18	2.33
1101	For Equipment or Congested Area ADD		1.86	
1102	For Calcium Silicate With Canvas Jacket ADD		2.25	
1088	12 In Dia. Pipe, 1 In Thick	LF	12.64	2.53
1101	For Equipment or Congested Area ADD		2.11	
1102	For Calcium Silicate With Canvas Jacket ADD		2.51	
1090	14 In Dia. Pipe, 1 In Thick	LF	14.74	2.78
1101	For Equipment or Congested Area ADD		2.43	
1102	For Calcium Silicate With Canvas Jacket ADD		3.10	
15147 1100	1-1/2" Thick Fib Cover w/ Standard Jacket			
1102	1/2 In Dia. Pipe, 1-1/2 In Thk	LF	2.83	1.08
1101	For Equipment or Congested Area ADD		0.51	
1102	For Calcium Silicate With Canvas Jacket ADD		0.34	
1104	3/4 In Dia. Pipe, 1-1/2 In Thk	LF	3.38	1.08
1101	For Equipment or Congested Area ADD		0.59	
1102	For Calcium Silicate With Canvas Jacket ADD		0.50	
1106	1 In Dia. Pipe, 1-1/2 In Thick	LF	3.47	1.08
1101	For Equipment or Congested Area ADD		0.61	
1102	For Calcium Silicate With Canvas Jacket ADD		0.52	
1108	1-1/4 In Dia. Pipe, 1-1/2 In Thk	LF	3.63	1.08
1101	For Equipment or Congested Area ADD		0.63	
1102	For Calcium Silicate With Canvas Jacket ADD		0.56	
1110	1-1/2 In Dia. Pipe, 1-1/2 In Thk	LF	3.79	1.08
1101	For Equipment or Congested Area ADD		0.66	
1102	For Calcium Silicate With Canvas Jacket ADD		0.60	
1112	2 In Dia. Pipe, 1-1/2 In Thick	LF	4.04	1.28
1101	For Equipment or Congested Area ADD		0.70	
1102	For Calcium Silicate With Canvas Jacket ADD		0.66	
1114	2-1/2 In Dia. Pipe, 1-1/2 In Thk	LF	4.31	1.28
1101	For Equipment or Congested Area ADD		0.74	
1102	For Calcium Silicate With Canvas Jacket ADD		0.72	
1116	3 In Dia. Pipe, 1-1/2 In Thick	LF	4.44	1.29
1101	For Equipment or Congested Area ADD		0.76	
1102	For Calcium Silicate With Canvas Jacket ADD		0.74	
1118	4 In Dia. Pipe, 1-1/2 In Thick	LF	4.96	1.39
1101	For Equipment or Congested Area ADD		0.85	
1102	For Calcium Silicate With Canvas Jacket ADD		0.86	
1120	8 In Dia. Pipe, 1-1/2 In Thick	LF	6.84	1.70
1101	For Equipment or Congested Area ADD		1.16	
1102	For Calcium Silicate With Canvas Jacket ADD		1.23	
1122	10 In Dia. Pipe, 1-1/2 In Thick	LF	8.38	1.91
1101	For Equipment or Congested Area ADD		1.42	
1102	For Calcium Silicate With Canvas Jacket ADD		1.55	
1124	12 In Dia. Pipe, 1-1/2 In Thick	LF	9.44	2.36
1101	For Equipment or Congested Area ADD		1.60	
1102	For Calcium Silicate With Canvas Jacket ADD		1.72	
1126	14 In Dia. Pipe, 1-1/2 In Thick	LF	11.05	2.77
1101	For Equipment or Congested Area ADD		1.88	
1102	For Calcium Silicate With Canvas Jacket ADD		1.98	
15147 1150	2" Thick Fib Cover w/ Standard Jacket			
1152	1/2 In Dia. Pipe, 2 In Thick	LF	4.50	1.29
1101	For Equipment or Congested Area ADD		0.77	
1102	For Calcium Silicate With Canvas Jacket ADD		0.76	
1154	3/4 In Dia. Pipe, 2 In Thick	LF	4.59	1.29
1101	For Equipment or Congested Area ADD		0.79	
1102	For Calcium Silicate With Canvas Jacket ADD		0.79	
1156	1 In Dia. Pipe, 2 In Thick	LF	4.80	1.28
1101	For Equipment or Congested Area ADD		0.82	
1102	For Calcium Silicate With Canvas Jacket ADD		0.85	
1158	1-1/4 In Dia. Pipe, 2 In Thick	LF	4.99	1.28
1101	For Equipment or Congested Area ADD		0.85	
1102	For Calcium Silicate With Canvas Jacket ADD		0.89	
1160	1-1/2 In Dia. Pipe, 2 In Thick	LF	5.17	1.28
1101	For Equipment or Congested Area ADD		0.88	
1102	For Calcium Silicate With Canvas Jacket ADD		0.94	
1162	2 In Dia. Pipe, 2 In Thick	LF	5.38	1.29
1101	For Equipment or Congested Area ADD		0.91	
1102	For Calcium Silicate With Canvas Jacket ADD		0.98	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1164	2-1/2 In Dia. Pipe, 2 In Thick	LF	5.72	1.28
1101	For Equipment or Congested Area ADD		0.97	
1102	For Calcium Silicte With Canvas Jacket ADD		1.06	
1166	3 In Dia. Pipe, 2 In Thick	LF	6.03	1.50
1101	For Equipment or Congested Area ADD		1.02	
1102	For Calcium Silicte With Canvas Jacket ADD		1.13	
1168	4 In Dia. Pipe, 2 In Thick	LF	6.77	1.49
1101	For Equipment or Congested Area ADD		1.13	
1102	For Calcium Silicte With Canvas Jacket ADD		1.32	
1170	6 In Dia. Pipe, 2 In Thick	LF	7.77	1.70
1101	For Equipment or Congested Area ADD		1.30	
1102	For Calcium Silicte With Canvas Jacket ADD		1.52	
1172	14 In Dia. Pipe, 2 In Thick	LF	15.58	4.27
1101	For Equipment or Congested Area ADD		2.69	
1102	For Calcium Silicte With Canvas Jacket ADD		2.55	
1174	16 In Dia. Pipe, 2 In Thick	LF	17.31	4.89
1101	For Equipment or Congested Area ADD		3.00	
1102	For Calcium Silicte With Canvas Jacket ADD		2.80	
1176	18 In Dia. Pipe, 2 In Thick	LF	19.54	5.73
1101	For Equipment or Congested Area ADD		3.40	
1102	For Calcium Silicte With Canvas Jacket ADD		3.05	
1178	20 In Dia. Pipe, 2 In Thick	LF	21.68	6.38
1101	For Equipment or Congested Area ADD		3.77	
1102	For Calcium Silicte With Canvas Jacket ADD		3.38	
1180	24 In Dia. Pipe, 2 In Thick	LF	24.45	7.22
1101	For Equipment or Congested Area ADD		4.26	
1102	For Calcium Silicte With Canvas Jacket ADD		3.80	
15147 1200	2-1/2" Thick Fib Cover w/ Standard Jacket			
1202	1/2 In Dia. Pipe, 2-1/2 In Thick	LF	5.14	1.49
1101	For Equipment or Congested Area ADD		0.88	
1102	For Calcium Silicte With Canvas Jacket ADD		0.86	
1204	3/4 In Dia. Pipe, 2-1/2 In Thick	LF	5.24	1.49
1101	For Equipment or Congested Area ADD		0.90	
1102	For Calcium Silicte With Canvas Jacket ADD		0.89	
1206	1 In Dia. Pipe, 2-1/2 In Thick	LF	5.48	1.49
1101	For Equipment or Congested Area ADD		0.94	
1102	For Calcium Silicte With Canvas Jacket ADD		0.96	
1208	1-1/4 In Dia. Pipe, 2-1/2 In Thick	LF	5.68	1.49
1101	For Equipment or Congested Area ADD		0.97	
1102	For Calcium Silicte With Canvas Jacket ADD		1.01	
1210	1-1/2 In Dia. Pipe, 2-1/2 In Thick	LF	5.89	1.49
1101	For Equipment or Congested Area ADD		1.00	
1102	For Calcium Silicte With Canvas Jacket ADD		1.07	
1212	2 In Dia. Pipe, 2-1/2 In Thick	LF	6.13	1.49
1101	For Equipment or Congested Area ADD		1.04	
1102	For Calcium Silicte With Canvas Jacket ADD		1.11	
1214	2-1/2 In Dia. Pipe, 2-1/2 In Thick	LF	6.52	1.49
1101	For Equipment or Congested Area ADD		1.10	
1102	For Calcium Silicte With Canvas Jacket ADD		1.20	
1216	3 In Dia. Pipe, 2-1/2 In Thick	LF	6.87	1.49
1101	For Equipment or Congested Area ADD		1.16	
1102	For Calcium Silicte With Canvas Jacket ADD		1.28	
1218	4 In Dia. Pipe, 2-1/2 In Thick	LF	7.71	1.70
1101	For Equipment or Congested Area ADD		1.29	
1102	For Calcium Silicte With Canvas Jacket ADD		1.49	
1220	6 In Dia. Pipe, 2-1/2 In Thick	LF	8.85	2.18
1101	For Equipment or Congested Area ADD		1.48	
1102	For Calcium Silicte With Canvas Jacket ADD		1.72	
1222	8 In Dia. Pipe, 2-1/2 In Thick	LF	12.41	2.26
1101	For Equipment or Congested Area ADD		2.04	
1102	For Calcium Silicte With Canvas Jacket ADD		2.68	
1224	10 In Dia. Pipe, 2-1/2 In Thick	LF	14.94	2.57
1101	For Equipment or Congested Area ADD		2.44	
1102	For Calcium Silicte With Canvas Jacket ADD		3.28	
1226	12 In Dia. Pipe, 2-1/2 In Thick	LF	16.63	2.99
1101	For Equipment or Congested Area ADD		2.74	
1102	For Calcium Silicte With Canvas Jacket ADD		3.50	
1228	14 In Dia. Pipe, 2-1/2 In Thick	LF	18.96	3.40

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1101	For Equipment or Congested Area ADD		3.12	
1102	For Calcium Silicte With Canvas Jacket ADD		4.06	
1230	16 In Dia. Pipe, 2-1/2 In Thick	LF	21.85	4.23
1101	For Equipment or Congested Area ADD		3.62	
1102	For Calcium Silicte With Canvas Jacket ADD		4.47	
1232	18 In Dia. Pipe, 2-1/2 In Thick	LF	23.65	4.48
1101	For Equipment or Congested Area ADD		3.91	
1102	For Calcium Silicte With Canvas Jacket ADD		4.91	
1234	20 In Dia. Pipe, 2-1/2 In Thick	LF	26.78	5.10
1101	For Equipment or Congested Area ADD		4.43	
1102	For Calcium Silicte With Canvas Jacket ADD		5.54	
15147 1300 Insulation Jacketing WBands				
Note: These Prices Are For Jacketing Only And Must Be Added To Insulation Prices				
1301	0.006" Alum Insul Jacket w/Bands	SF	5.14	3.05
1302	0.016" Alum Insul Jacket w/Bands	SF	5.29	3.05
1303	0.010" SST Insul Jacket w/Bands	SF	6.30	3.68
1304	PVC Snap On Insulation Jacket W Fasteners, .020", W/Fittings	SF	5.86	1.25
15149 Glass Pipe				
15151 1080 Glass pipe, no couplings or hangers				
2120	Pipe glass process pressure bead jt no cplg no hgr 2" dia	LF	24.10	4.93
2140	Pipe glass process pressure bead jt no cplg no hgr 3" dia	LF	29.72	5.50
2160	Pipe glass process pressure bead jt no cplg no hgr 4" dia	LF	43.82	7.88
15151 3000 Drainage Pipe				
Note: Price Includes Fittings Couplings And Hangers. Fittings Are Assumed Every 10 Ft (3M). ASTM C1053				
3010	1-1/2"(40mm) Glass Drainage Pipe Includes Hangers and Fittings	LF	25.86	6.15
3020	2" (50mm) Glass Drainage Pipe Includes Hangers and Fittings	LF	32.76	7.55
3030	3" (80mm) Glass Drainage Pipe Includes Hangers and Fittings	LF	40.65	8.34
3040	4" (10cm) Glass Drainage Pipe Includes Hangers and Fittings	LF	64.20	11.28
3050	6" (15cm) Glass Drainage Pipe Includes Hangers and Fittings	LF	96.76	12.95
9382	8"Flange,150# Socket Weld CPVC	EA	164.68	
15152 0010 Pipe, glass, fittings				
15152 2000 Process supply (pressure), beaded ends				
15152 2051 90_ sweep elbow				
2100	Pipe, glass ftg, 90 deg sweep elb, 2", process supply, beaded	EA	36.22	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		72.44	
2120	Pipe, glass ftg, 90 deg sweep elb, 3", process supply, beaded	EA	57.72	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		115.44	
2130	Pipe, glass ftg, 90 deg sweep elb, 4", process supply, beaded	EA	80.36	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		160.72	
15152 2251 Tee, straight				
2310	Pipe, glass ftg, straight, 3", process supply, beaded ends, tee	EA	66.78	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		133.56	
2320	Pipe, glass ftg, straight, 4", process supply, beaded ends, tee	EA	112.05	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		224.10	
15152 2350 Coupling, Viton liner				
2410	Pipe, glass ftg, to 400 degF,2", prcs sply,beaded ends,cplg,	EA	62.49	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		87.14	
2420	Pipe, glass ftg, to 400 degF,3", prcs sply,beaded ends,cplg,	EA	102.50	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		159.58	
2430	Pipe, glass ftg, to 400 degF,4", prcs sply,beaded ends,cplg,	EA	120.88	
2550	Pipe,glass fittings,for beaded joint armored fittings, add		192.40	
15153 Plastic Pipe				
15153 2000 Abs - Pvc Dw Pipe With Fittings - Sch 80				
Note: Price Includes Fittings And Hangers. Assume 3 Hangers Per 10Ft (3M) Not For Use Where Detail Is Available.				
2001	1-1/2"(40mm)ABS-PVC DW Pipe S80 Includes Fittings and Hangers	LF	10.29	
2002	2" (50mm) ABS-PVC DW Pipe S80 I ncludes Fittings and Hangers	LF	11.34	
2003	3" (80mm) ABS-PVC DW Pipe S80 I ncludes Fittings and Hangers	LF	14.06	
2004	4" (10cm) ABS-PVC DW Pipe S80 I ncludes Fittings and Hangers	LF	16.14	
2005	6" (15cm) ABS-PVC DW Pipe S80 I ncludes Fittings and Hangers	LF	20.44	
15153 8300 Standard Dimension Ratio Sdr-17				
15153 8310 Screened Pipes				
8311	4" SDR-17 Screened Pipe	LF	14.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8312	6" SDR-17 Screened Pipe	LF	17.59	
15153 8340	Flange Assemblies			
8341	3" Flange Assembly, Polyeth SDR- 17	EA	59.67	
8342	4" Flange Assembly, Polyeth SDR- 17	EA	72.26	
8343	6" Flange Assembly, Polyeth SDR- 17	EA	87.46	
15153 9020	90 Degree Elbow, Flanged			
9021	2" 90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	669.19	
9022	3" 90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	771.56	
9023	4" 90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	963.15	
9024	6" 90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,677.47	
9025	8" 90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,703.66	
9026	10"90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	3,639.35	
9027	12"90 Deg Elbow, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	4,854.51	
15153 9030	45 Degree, Flanged			
9031	2" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	670.23	
9032	3" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	769.75	
9033	4" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	961.73	
9034	6" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,669.13	
9035	8" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,691.59	
9036	10" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	3,622.99	
9037	12" 45 Degree, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	4,833.61	
15153 9040	Tee, Flanged			
9041	2" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	934.04	
9042	3" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,168.74	
9043	4" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,320.28	
9044	6" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,140.49	
9045	8" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,705.06	
9046	10" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	4,665.35	
9047	12" Tee, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	6,360.18	
15153 9050	Wye, Flanged			
9051	2" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,367.32	
9052	3" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	1,788.43	
9053	4" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,108.01	
9054	6" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	2,694.30	
9055	8" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	3,580.88	
9056	10" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	5,770.04	
9057	12" Wye, Fbgs Reinf With Carbon Steel Secondary Pipe	EA	7,564.35	
15153 9060	Concentric Reducer, Flanged			
9061	2" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	738.33	
9062	3" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	983.01	
9063	4" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	1,056.45	
9064	6" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	1,387.99	
9065	8" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	1,882.81	
9066	10" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	2,448.46	
9067	12" Concentric Reducer, With Carbon Steel Secondary Pipe	EA	3,432.78	
15153 9070	Adapter, Bell X Male Or Female			
9071	2"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	544.70	
9072	3"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	613.21	
9073	4"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	687.01	
9074	6"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	1,033.88	
9075	8"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	907.15	
9076	10"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	1,197.85	
9077	12"Adapter, Bell x Male or Female With Carbon Steel Secondary Pipe	EA	2,095.88	
15153 9080	Nipples			
9081	2" x 6" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	119.80	
9082	2" x 12" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	239.49	
9083	3" x 8" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	456.89	
9084	3" x 12" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	521.36	
9085	4" x 8" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	499.72	
9086	4" x 12" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	589.10	
9087	6" x 12" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	892.44	
9088	8" x 18" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	422.52	
9089	8" x 24" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pipe	EA	570.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15153 9090 Nipples (Continued)				
9091	10" x 18" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pip	EA	769.30	
9092	10" x 24" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pip	EA	1,154.99	
9093	12" x 18" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pip	EA	910.78	
9094	12" x 24" Nipple, Fbgs Reinforced With Carbon Steel Secondary Pip	EA	1,173.82	
15153 9320 Flanges				
9321	6" Cplg Sch 80 Socket Weld CPVC	EA	75.33	
9322	8" Cplg Sch 80 Socket Weld CPVC	EA	110.68	
9323	4" Flange, Fiberglass Reinforced With Carbon Steel Secondary Pip	EA	436.03	
9324	6" Flange, Fiberglass Reinforced With Carbon Steel Secondary Pip	EA	639.48	
9325	8" Flange, Fiberglass Reinforced With Carbon Steel Secondary Pip	EA	810.49	
9326	10" Flange, Fiberglass Reinforced With Carbon Steel Secondary Pip	EA	1,121.19	
9327	12" Flange, Fiberglass Reinforced With Carbon Steel Secondary Pip	EA	1,635.87	
15154 0010 Pipe, plastic, with no couplings and hangers				
15154 8500 Polyethylene pipe no couplings and hangers				
15154 8510 SDR 21				
8512	Polyethylene pipe, SDR 21, 1" dia	LF	4.91	1.14
8514	Polyethylene pipe, SDR 21, 2" dia	LF	5.87	1.18
8516	Polyethylene pipe, SDR 21, 4" dia	LF	6.95	1.25
8517	Polyethylene pipe, SDR 21, 6" dia	LF	10.54	1.51
8518	Polyethylene pipe, SDR 21, 10" dia	LF	19.78	2.13
8519	Polyethylene pipe, SDR 21, 12" dia	LF	24.23	2.20
8521	Polyethylene pipe, SDR 21, 18" dia	LF	51.44	4.63
8523	Polyethylene pipe, SDR 21, 24" dia	LF	75.02	5.08
8610	3" Polyethylene Pipe, SDR-21	LF	5.68	1.14
8620	8" Polyethylene Pipe, SDR-21	LF	13.76	1.68
8630	14" Polyethylene Pipe, SDR-21	LF	30.90	2.87
8640	16" Polyethylene Pipe, SDR-21	LF	39.27	3.51
8650	20" Polyethylene Pipe, SDR-21	LF	55.37	4.37
8660	22" Polyethylene Pipe, SDR-21	LF	63.16	4.22
15155 0010 Pipe plastic, no couplings and hangers				
15155 0080 Fiberglass reinforced				
0120	Pipe fiberglass reinforced genl svce no cplg/hgr 2" dia	LF	7.35	1.10
0140	Pipe fiberglass reinforced genl svce no cplg/hgr 3" dia	LF	9.56	1.45
0150	Pipe fiberglass reinforced genl svce no cplg/hgr 4" dia	LF	11.39	0.99
0160	Pipe fiberglass reinforced genl svce no cplg/hgr 6" dia	LF	17.57	1.53
0170	Pipe fiberglass reinforced genl svce no cplg/hgr 8" dia	LF	28.43	3.63
0180	Pipe fiberglass reinforced genl svce no cplg/hgr 10" dia	LF	51.55	5.69
0190	Pipe fiberglass reinforced genl svce no cplg/hgr 12" dia	LF	52.65	5.80
15155 1839 PVC schedule 40				
1840	Pipe PVC sched 40 no coupling/hanger 1/4" dia	LF	1.32	0.34
1860	Pipe PVC sched 40 no coupling/hanger 1/2" dia	LF	1.38	0.53
1870	Pipe PVC sched 40 no coupling/hanger 3/4" dia	LF	1.65	0.75
1880	Pipe PVC sched 40 no coupling/hanger 1" dia	LF	2.06	0.83
1882	1-1/4" Sch 40 PVC Press Pipe Socket Weld	LF	2.63	0.96
1900	Pipe PVC sched 40 no coupling/hanger 1.5" dia	LF	3.80	1.32
1910	Pipe PVC sched 40 no coupling/hanger 2" dia	LF	4.93	1.88
1911	2-1/2" Sch 40 PVC Press Pipe Socket Weld	LF	4.09	1.23
1912	3" Sch 40 PVC Press Pipe Socket Weld	LF	5.08	1.85
1940	Pipe PVC sched 40 no coupling/hanger 4" dia	LF	6.77	2.20
1960	Pipe PVC sched 40 no coupling/hanger 6" dia	LF	9.54	2.80
1970	Pipe PVC sched 40 no coupling/hanger 8" dia	LF	13.59	3.48
1980	Pipe PVC sched 40 no coupling/hanger 10" dia	LF	17.59	4.79
1990	Pipe PVC sched 40 no coupling/hanger 12" dia	LF	21.76	5.58
15155 2459 PVC schedule 80				
2460	Pipe PVC sched 80 no coupling/hanger 1/2" dia	LF	1.43	0.57
2470	Pipe PVC sched 80 no coupling/hanger 3/4" dia	LF	1.70	0.80
2480	Pipe PVC sched 80 no coupling/hanger 1" dia	LF	2.13	0.79
2500	Pipe PVC sched 80 no coupling/hanger 1.5" dia	LF	4.01	1.44
2510	Pipe PVC sched 80 no coupling/hanger 2" dia	LF	5.16	2.17
2540	Pipe PVC sched 80 no coupling/hanger 4" dia	LF	7.45	2.27
2560	Pipe PVC sched 80 no coupling/hanger 6" dia	LF	10.69	2.88
2570	Pipe PVC sched 80 no coupling/hanger 8" dia	LF	14.88	3.52

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15155 2599 Plastic Pipe With Fittings & Hangers				
15155 2600 PVC				
2610	1-1/2" (40mm)ABS-PVC DWV Pipe S80 Includes Fittings and Hangers	LF	10.24	4.20
2611	1-1/4" Pipe Schedule 80 PVC	LF	3.05	1.13
2620	2" (50mm) ABS-PVC DWV Pipe S80 Includes Fittings and Hangers	LF	11.28	4.38
2621	2-1/2" Pipe Schedule 80 PVC	LF	5.28	1.61
2630	3" (80mm) ABS-PVC DWV Pipe S80 Includes Fittings and Hangers	LF	13.92	5.06
2631	3" Pipe Schedule 80 PVC	LF	6.06	1.68
2640	4" (10cm) ABS-PVC DWV Pipe S80 Includes Fittings and Hangers	LF	15.94	5.40
2641	10" Pipe Schedule 80 PVC	LF	19.81	3.35
2650	6" (15cm) ABS-PVC DWV Pipe S80 Includes Fittings and Hangers	LF	19.93	6.15
15155 2700 Abs - Pvc Dw Pipe With Fittings - Sch 40				
2710	1-1/2" (40mm)ABS-PVC DWV Pipe S40 Includes Fittings and Hangers	LF	11.83	4.48
2720	2" (50mm) ABS-PVC DWV Pipe S40 Includes Fittings and Hangers	LF	13.37	4.82
2730	3" (80mm) ABS-PVC DWV Pipe S40 Includes Fittings and Hangers	LF	17.61	5.74
2740	4" (10cm) ABS-PVC DWV Pipe S40 Includes Fittings and Hangers	LF	20.72	6.02
2750	6" (15cm) ABS-PVC DWV Pipe S40 Includes Fittings and Hangers	LF	27.34	6.87
15155 4400 DWV, PVC schedule 40				
4420	Pipe PVC DWV sched 40 no coupling/hanger 1.5" dia	LF	3.78	1.55
4460	Pipe PVC DWV sched 40 no coupling/hanger 2" dia	LF	4.86	1.88
4470	Pipe PVC DWV sched 40 no coupling/hanger 3" dia	LF	5.98	1.99
4480	Pipe PVC DWV sched 40 no coupling/hanger 4" dia	LF	6.94	2.09
4490	Pipe PVC DWV sched 40 no coupling/hanger 6" dia	LF	9.54	2.63
4491	Pipe PVC DWV sched 40 no coupling/hanger 8" dia	LF	14.02	3.34
4492	Pipe PVC DWV sched 40 no coupling/hanger 10" dia	LF	28.12	7.72
15157 0010 Pipe, plastic, fittings				
15157 0030 Epoxy resin, fiberglass reinforced				
15157 0170 Elbow, 90°, flanged				
0172	Fiberglass reinf epoxy, flanged, 2", general service, elbow, 90	EA	124.51	5.96
0173	Fiberglass reinf epoxy, flanged, 3", general service, elbow, 90	EA	149.91	8.69
0174	Fiberglass reinf epoxy, flanged, 4", general service, elbow, 90	EA	193.52	11.32
0176	Fiberglass reinf epoxy, flanged, 6", general service, elbow, 90	EA	341.92	18.45
0177	Fiberglass reinf epoxy, flanged, 8", general service, elbow, 90	EA	583.93	26.14
0178	Fiberglass reinf epoxy, flanged, 10", general service, elbow, 90	EA	793.45	34.81
0179	Fiberglass reinf epoxy, flanged, 12", general service, elbow, 90	EA	1,080.86	52.22
15157 0186 Elbow, 45°, flanged				
0188	Fiberglass reinf epoxy, flanged, 2", general service, elbow, 45	EA	124.17	5.96
0189	Fiberglass reinf epoxy, flanged, 3", general service, elbow, 45	EA	149.91	8.69
0190	Fiberglass reinf epoxy, flanged, 4", general service, elbow, 45	EA	193.52	11.32
0192	Fiberglass reinf epoxy, flanged, 6", general service, elbow, 45	EA	344.86	18.45
0193	Fiberglass reinf epoxy, flanged, 8", general service, elbow, 45	EA	584.61	26.14
0194	Fiberglass reinf epoxy, flanged, 10", general service, elbow, 45	EA	794.35	34.81
0195	Fiberglass reinf epoxy, flanged, 12", general service, elbow, 45	EA	1,080.63	52.22
15157 0352 Tee, flanged				
0354	Fiberglass reinf epoxy, general service, tee, flanged, 2"	EA	168.64	8.02
0355	Fiberglass reinf epoxy, general service, tee, flanged, 3"	EA	237.52	13.62
0356	Fiberglass reinf epoxy, general service, tee, flanged, 4"	EA	272.20	17.74
0358	Fiberglass reinf epoxy, general service, tee, flanged, 6"	EA	511.71	30.66
0359	Fiberglass reinf epoxy, general service, tee, flanged, 8"	EA	823.11	39.16
0360	Fiberglass reinf epoxy, general service, tee, flanged, 10"	EA	1,159.29	48.73
0361	Fiberglass reinf epoxy, general service, tee, flanged, 12"	EA	1,482.02	63.09
15157 0365 Wye, flanged				
0367	Fiberglass reinf epoxy, general service, wye, flanged, 2"	EA	258.96	8.02
0368	Fiberglass reinf epoxy, general service, wye, flanged, 3"	EA	358.28	13.62
0369	Fiberglass reinf epoxy, general service, wye, flanged, 4"	EA	427.82	17.74
0371	Fiberglass reinf epoxy, general service, wye, flanged, 6"	EA	565.36	30.66
0372	Fiberglass reinf epoxy, general service, wye, flanged, 8"	EA	755.43	39.16
0373	Fiberglass reinf epoxy, general service, wye, flanged, 10"	EA	1,214.07	48.73
0374	Fiberglass reinf epoxy, general service, wye, flanged, 12"	EA	1,598.82	63.09
15157 0380 Couplings				
0410	Fiberglass reinf epoxy, general service, couplings, 2"	EA	32.04	6.70
0420	Fiberglass reinf epoxy, general service, couplings, 3"	EA	48.70	10.15
0430	Fiberglass reinf epoxy, general service, couplings, 4"	EA	55.35	8.37

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0440	Fiberglass reinf epoxy, general service, couplings, 6"	EA	88.62	35.48
0450	Fiberglass reinf epoxy, general service, couplings, 8"	EA	121.40	46.78
0460	Fiberglass reinf epoxy, general service, couplings, 10"	EA	174.18	62.29
0470	Fiberglass reinf epoxy, general service, couplings, 12"	EA	215.14	78.86
15157 0474	Reducer, concentric, flanged			
0475	Fiberglass reinf epoxy, flgd, 2"x1.5", genl svce, reducer,	EA	137.53	4.51
0476	Fiberglass reinf epoxy, flgd, 3"x2", genl svce, reducer,	EA	186.97	5.92
0477	Fiberglass reinf epoxy, flgd, 4"x3", genl svce, reducer,	EA	201.58	7.74
0479	Fiberglass reinf epoxy, flgd, 6"x4", genl svce, reducer,	EA	262.51	9.86
0480	Fiberglass reinf epoxy, flgd, 8"x6", genl svce, reducer,	EA	368.13	14.69
0481	Fiberglass reinf epoxy, flgd, 10"x8", genl svce, reducer,	EA	483.90	19.43
0482	Fiberglass reinf epoxy, flgd, 12"x10", genl svce, reducer,	EA	683.27	23.71
15157 0486	Adapter, bell x male or female			
0488	Fiberglass reinf epoxy, bell x male or female, 2", genl svce,	EA	41.43	5.43
0489	Fiberglass reinf epoxy, bell x male or female, 3", genl svce,	EA	55.54	7.59
0491	Fiberglass reinf epoxy, bell x male or female, 4", genl svce,	EA	70.40	7.20
0492	Fiberglass reinf epoxy, bell x male or female, 6", genl svce,	EA	120.88	15.90
0493	Fiberglass reinf epoxy, bell x male or female, 8", genl svce,	EA	161.01	28.14
0494	Fiberglass reinf epoxy, bell x male or female, 10", genl svce,	EA	260.20	42.24
0495	Fiberglass reinf epoxy, bell x male or female, 12", genl svce,	EA	351.35	43.65
15157 0499	Nipple			
0502	Fiberglass reinf epoxy, general service, nipple, 2" x 6"	EA	25.08	4.04
0504	Fiberglass reinf epoxy, general service, nipple, 2" x 12"	EA	27.80	4.22
0506	Fiberglass reinf epoxy, general service, nipple, 3" x 8"	EA	34.21	2.20
0507	Fiberglass reinf epoxy, general service, nipple, 3" x 12"	EA	37.04	3.80
0508	Fiberglass reinf epoxy, general service, nipple, 4" x 8"	EA	40.92	2.45
0510	Fiberglass reinf epoxy, general service, nipple, 4" x 12"	EA	47.65	3.16
0512	Fiberglass reinf epoxy, general service, nipple, 6" x 12"	EA	71.08	4.40
0514	Fiberglass reinf epoxy, general service, nipple, 8" x 18"	EA	112.63	7.80
0516	Fiberglass reinf epoxy, general service, nipple, 8" x 24"	EA	127.63	19.76
0518	Fiberglass reinf epoxy, general service, nipple, 10" x 18"	EA	141.36	11.82
0520	Fiberglass reinf epoxy, general service, nipple, 10" x 24"	EA	170.56	14.68
0522	Fiberglass reinf epoxy, general service, nipple, 12" x 18"	EA	166.47	12.51
0524	Fiberglass reinf epoxy, general service, nipple, 12" x 24"	EA	306.31	27.52
15157 0528	Flange			
0532	Fiberglass reinf epoxy, general service, flange, 2"	EA	31.58	2.98
0533	Fiberglass reinf epoxy, general service, flange, 3"	EA	40.83	4.44
0534	Fiberglass reinf epoxy, general service, flange, 4"	EA	53.97	5.50
0536	Fiberglass reinf epoxy, general service, flange, 6"	EA	90.15	9.33
0537	Fiberglass reinf epoxy, general service, flange, 8"	EA	137.54	13.49
0538	Fiberglass reinf epoxy, general service, flange, 10"	EA	187.00	17.37
0539	Fiberglass reinf epoxy, general service, flange, 12"	EA	261.77	26.11
15157 2100	PVC, schedule 80			
15157 2109	90_ elbow			
2110	PVC, hi impact/pressure, sched 80, 90 deg elbow, 1/2"	EA	17.79	4.99
2130	PVC, hi impact/pressure, sched 80, 90 deg elbow, 3/4"	EA	19.08	5.33
2140	PVC, hi impact/pressure, sched 80, 90 deg elbow, 1"	EA	22.22	6.01
2142	1-1/4"90 Degree Elbow Sch 80 PVC	EA	20.52	4.73
2160	PVC, hi impact/pressure, sched 80, 90 deg elbow, 1.5"	EA	26.21	7.45
2170	PVC, hi impact/pressure, sched 80, 90 deg elbow, 2"	EA	29.33	7.09
2172	2-1/2"90 Degree Elbow Sch 80 PVC	EA	34.55	5.36
2174	3" 90 Degree Elbow Sch 80 PVC	EA	44.05	5.75
2190	PVC, hi impact/pressure, sched 80, 90 deg elbow, 4"	EA	61.44	9.08
2200	PVC, hi impact/pressure, sched 80, 90 deg elbow, 6"	EA	112.22	16.68
2210	PVC, hi impact/pressure, sched 80, 90 deg elbow, 8"	EA	178.95	26.07
2212	10" 90 Degree Elbow Sch 80 PVC	EA	315.42	30.69
15157 2249	45_ elbow			
2250	PVC, hi impact/pressure, sched 80, 45 deg elbow, 1/2"	EA	18.68	9.95
2270	PVC, hi impact/pressure, sched 80, 45 deg elbow, 3/4"	EA	20.64	8.06
2280	PVC, hi impact/pressure, sched 80, 45 deg elbow, 1"	EA	24.24	7.90
2282	1-1/4"45 Degree Elbow Sch 80 PVC	EA	23.28	4.58
2300	PVC, hi impact/pressure, sched 80, 45 deg elbow, 1.5"	EA	29.71	7.26
2310	PVC, hi impact/pressure, sched 80, 45 deg elbow, 2"	EA	34.15	7.06
2312	2-1/2"45 Degree Elbow Sch 80 PVC	EA	45.87	5.15

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2314	3" 45 Degree Elbow Sch 80 PVC	EA	61.89	5.50
2330	PVC, hi impact/pressure, sched 80, 45 deg elbow, 4"	EA	85.79	9.47
2340	PVC, hi impact/pressure, sched 80, 45 deg elbow, 6"	EA	122.98	17.03
2350	PVC, hi impact/pressure, sched 80, 45 deg elbow, 8"	EA	189.14	28.68
2352	10" 45 Degree Elbow Sch 80 PVC	EA	260.99	32.00
15157 2399 Tee				
2400	PVC, hi impact/pressure, sched 80, tee, 1/2"	EA	28.01	14.03
2420	PVC, hi impact/pressure, sched 80, tee, 3/4"	EA	30.45	13.20
2430	PVC, hi impact/pressure, sched 80, tee, 1"	EA	33.94	11.95
2432	1-1/4" Tee Schedule 80 PVC	EA	23.95	6.29
2450	PVC, hi impact/pressure, sched 80, tee, 1.5"	EA	47.90	11.50
2460	PVC, hi impact/pressure, sched 80, tee, 2"	EA	53.16	10.82
2462	2-1/2" Tee Schedule 80 PVC	EA	43.43	10.56
2464	3" Tee Schedule 80 PVC	EA	52.02	12.78
2480	PVC, hi impact/pressure, sched 80, tee, 4"	EA	90.82	15.11
2490	PVC, hi impact/pressure, sched 80, tee, 6"	EA	165.60	23.28
2500	PVC, hi impact/pressure, sched 80, tee, 8"	EA	218.61	31.55
2502	10" Tee Schedule 80 PVC	EA	336.21	34.08
15157 2509 Flange, 150 lb				
2510	PVC, sched 80, flange, 150 lb, 1/2", socket	EA	14.94	5.07
2514	PVC, sched 80, flange, 150 lb, 3/4" socket	EA	15.93	4.54
2518	PVC, sched 80, flange, 150 lb, 1" socket	EA	18.02	4.28
2519	1-1/4" Flange, 150# Socket Weld PVC	EA	17.12	3.33
2522	PVC, sched 80, flange, 150 lb, 1-1/2" socket	EA	20.19	3.75
2526	PVC, sched 80, flange, 150 lb, 2" socket	EA	23.62	3.66
2527	2-1/2" Flange, 150# Socket Weld PVC	EA	26.76	3.69
2528	3" Flange, 150# Socket Weld PVC	EA	51.71	12.82
2531	PVC, sched 80, flange, 150 lb, 4" socket	EA	40.72	3.94
2534	PVC, sched 80, flange, 150 lb, 6" socket	EA	60.07	5.43
2538	PVC, sched 80, flange, 150 lb, 8" socket	EA	95.72	7.00
2539	10" Flange, 150# Socket Weld PVC	EA	156.36	9.06
15157 2549 Coupling				
2550	PVC, hi impact/pressure, sched 80, coupling, 1/2"	EA	18.22	10.33
2570	PVC, hi impact/pressure, sched 80, coupling, 3/4"	EA	19.67	8.40
2580	PVC, hi impact/pressure, sched 80, coupling, 1"	EA	22.09	8.55
2582	1-1/4" Cplg Sch 80 Socket Weld	EA	20.11	4.73
2600	PVC, hi impact/pressure, sched 80, coupling, 1.5"	EA	26.44	7.49
2610	PVC, hi impact/pressure, sched 80, coupling, 2"	EA	29.20	7.13
2612	2-1/2" Cplg Sch 80 Socket Weld PVC	EA	30.46	5.36
2614	3" Cplg Sch 80 Socket Weld PVC	EA	36.01	5.75
2630	PVC, hi impact/pressure, sched 80, coupling, 4"	EA	47.47	7.34
2640	PVC, hi impact/pressure, sched 80, coupling, 6"	EA	73.34	13.13
2650	PVC, hi impact/pressure, sched 80, coupling, 8"	EA	116.49	30.53
2652	10" Cplg Sch 80 Socket Weld PVC	EA	162.33	16.75
15157 2700 PVC (white), schedule 40, socket joints				
15157 2759 90_ elbow				
2760	PVC (white), sched 40, socket joints, elbow 90 deg, 1/2"	EA	14.03	8.36
2770	PVC (white), sched 40, socket joints, elbow 90 deg, 3/4"	EA	14.72	7.11
2780	PVC (white), sched 40, socket joints, elbow 90 deg, 1"	EA	17.36	6.77
2782	1-1/4" 90 Deg Elbow, PVC Sch 40 Socket Weld	EA	15.62	4.46
2800	PVC (white), sched 40, socket joints, elbow 90 deg, 1.5"	EA	19.95	5.82
2810	PVC (white), sched 40, socket joints, elbow 90 deg, 2"	EA	21.91	5.36
2812	2-1/2" 90 Deg Elbow, PVC Sch 40 Socket Weld	EA	27.18	5.15
2814	3" 90 Degree Elbow, PVC Sch 40 Socket Weld	EA	35.81	5.14
2840	PVC (white), sched 40, socket joints, elbow 90 deg, 4"	EA	51.21	7.70
2860	PVC (white), sched 40, socket joints, elbow 90 deg, 6"	EA	104.87	15.65
2870	PVC (white), sched 40, socket joints, elbow 90 deg, 8"	EA	174.34	28.14
2872	10" 90 Degree Elbow, PVC Sch 40 Socket Weld	EA	251.10	23.66
15157 2979 45_ elbow				
2980	PVC (white), sched 40, socket joints, elbow 45 deg, 1/2"	EA	14.20	8.28
2990	PVC (white), sched 40, socket joints, elbow 45 deg, 3/4"	EA	15.10	6.35
3000	PVC (white), sched 40, socket joints, elbow 45 deg, 1"	EA	17.65	6.92
3002	1-1/4" 45 Deg Elbow, PVC Sch 40 Socket Weld	EA	15.97	4.50
3020	PVC (white), sched 40, socket joints, elbow 45 deg, 1.5"	EA	20.38	5.82

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3030	PVC (white), sched 40, socket joints, elbow 45 deg, 2"	EA	22.18	5.36
3032	2-1/2" 45 Deg Elbow, PVC Sch 40 Socket Weld	EA	27.14	5.15
3034	3" 45 Degree Elbow, PVC Sch 40 Socket Weld	EA	33.66	5.11
3060	PVC (white), sched 40, socket joints, elbow 45 deg, 4"	EA	54.45	7.84
3080	PVC (white), sched 40, socket joints, elbow 45 deg, 6"	EA	110.35	16.46
3090	PVC (white), sched 40, socket joints, elbow 45 deg, 8"	EA	192.28	32.23
3092	10" 45 Degree Elbow, PVC Sch 40 Socket Weld	EA	264.22	26.29
15157 3179 Tee				
3180	PVC (white), sched 40, socket joints, tee, 1/2"	EA	21.98	12.03
3190	PVC (white), sched 40, socket joints, tee, 3/4"	EA	23.65	11.46
3200	PVC (white), sched 40, socket joints, tee, 1"	EA	25.95	10.02
3202	1-1/4" Tee, PVC S40, Socket Weld	EA	24.08	6.73
3220	PVC (white), sched 40, socket joints, tee, 1.5"	EA	31.65	9.38
3230	PVC (white), sched 40, socket joints, tee, 2"	EA	35.40	8.94
3232	2-1/2" Tee, PVC S40, Socket Weld	EA	42.16	7.52
3234	3" Tee, PVC Sch 40, Socket Weld	EA	52.94	7.84
3260	PVC (white), sched 40, socket joints, tee, 4"	EA	78.90	12.70
3280	PVC (white), sched 40, socket joints, tee, 6"	EA	166.81	24.38
3290	PVC (white), sched 40, socket joints, tee, 8"	EA	303.49	49.02
3291	PVC (white), sched 40, socket joints, tee, 10"	EA	541.89	38.40
3292	PVC (white), sched 40, socket joints, tee, 12"	EA	783.47	71.79
15157 3379 Coupling				
3380	PVC (white), sched 40, socket joints, coupling, 1/2"	EA	13.95	8.55
3390	PVC (white), sched 40, socket joints, coupling, 3/4"	EA	14.69	7.41
3400	PVC (white), sched 40, socket joints, coupling, 1"	EA	17.29	7.00
3402	1-1/4"Cplg,Socket Weld,PVC Sch40	EA	15.47	4.50
3420	PVC (white), sched 40, socket joints, coupling, 1.5"	EA	19.60	5.86
3430	PVC (white), sched 40, socket joints, coupling, 2"	EA	21.35	5.39
3432	2-1/2"Cplg,Socket Weld,PVC Sch40	EA	27.82	5.25
3434	3"Coupling,Socket Weld,PVC Sch40	EA	30.28	5.25
3460	PVC (white), sched 40, socket joints, coupling, 4"	EA	40.86	6.85
3480	PVC (white), sched 40, socket joints, coupling, 6"	EA	64.29	12.56
3490	PVC (white), sched 40, socket joints, coupling, 8"	EA	96.11	26.36
3492	10" Coupling, Socket Weld, PVC Sch 40	EA	128.61	22.85
15157 3599 Cap				
3600	Cap sched 40 PVC socket, 1/2"	EA	7.13	2.16
3610	Cap sched 40 PVC socket, 3/4"	EA	7.48	1.70
3620	Cap sched 40 PVC socket, 1"	EA	8.85	1.97
3622	1-1/4" Cap, PVC Schedule 40	EA	8.28	2.27
3640	Cap sched 40 PVC socket, 1.5"	EA	10.15	1.63
3650	Cap sched 40 PVC socket, 2"	EA	10.98	1.38
3652	2-1/2" Cap, PVC Schedule 40	EA	13.88	2.45
3654	3" Cap, PVC Schedule 40	EA	16.63	2.80
3680	Cap sched 40 PVC socket, 4"	EA	25.59	2.13
3690	Cap sched 40 PVC socket, 6"	EA	44.34	4.36
3700	Cap sched 40 PVC socket, 8"	EA	79.66	8.23
3702	10" Cap, PVC Schedule 40	EA	100.81	7.91
15157 3710 Reducing insert, socket weld				
3712	Reducing insert, PVC sched 40, socket weld, 3/4"	EA	16.09	8.13
3713	Reducing insert, PVC sched 40, socket weld, 1"	EA	18.56	7.49
3714	1-1/4"PVC Sch 40 Reducing Insert Socket Weld	EA	16.79	4.50
3715	Reducing insert, PVC sched 40, socket weld, 1.5"	EA	21.11	6.35
3716	Reducing insert, PVC sched 40, socket weld, 2"	EA	22.36	5.75
3717	Reducing insert, PVC sched 40, socket weld, 4"	EA	47.38	8.19
3718	Reducing insert, PVC sched 40, socket weld, 6"	EA	93.97	19.05
3719	Reducing insert, PVC sched 40, socket weld, 8"	EA	114.00	17.37
3720	2-1/2"PVC Sch 40 Reducing Insert Socket Weld	EA	22.04	5.25
3721	3"PVC Sch 40 Reducing Insert Socket Weld	EA	26.44	5.25
3722	10" PVC Sch 40 Reducing Insert Socket Weld	EA	167.18	15.16
15157 3730 Reducing insert, socket weld x female/male thd				
3732	Reducing insert, socket weld x female/male thread, 1/2", PVC	EA	14.58	8.63
3733	Reducing insert, socket weld x female/male thread, 3/4", PVC	EA	15.12	7.52
3734	Reducing insert, socket weld x female/male thread, 1", PVC	EA	17.56	7.04
3735	1-1/4"PVC Sch 40 Reducing Insert Socket Weld x Female/Male Threa	EA	16.62	4.46

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3736	Reducing insert, socket weld x female/male thread, 1.5", PVC	EA	21.48	6.35
3737	Reducing insert, socket weld x female/male thread, 2", PVC	EA	27.62	6.99
3738	Reducing insert, socket weld x female/male thread, 4", PVC	EA	56.93	9.58
3739	2-1/2"PVC Sch 40 Reducing Insert Socket Weld x Female/Male Threa	EA	30.35	5.25
3740	3" PVC Sch 40 Reducing Insert Socket Weld x Female/Male Thread	EA	35.41	5.25
15157 3742	Male adapter, socket weld x male thread			
3744	Male adapter, PVC sched 40, socket weld x male thread, 1/2"	EA	13.45	8.25
3745	Male adapter, PVC sched 40, socket weld x male thread, 3/4"	EA	14.08	7.15
3746	Male adapter, PVC sched 40, socket weld x male thread, 1"	EA	16.76	6.85
3747	1-1/4" PVC Sch 40 Male Adapter Socket Weld x Male Thread	EA	16.28	4.50
3748	Male adapter, PVC sched 40, socket weld x male thread, 1.5"	EA	21.58	6.51
3749	Male adapter, PVC sched 40, socket weld x male thread, 2"	EA	25.32	6.49
3750	Male adapter, PVC sched 40, socket weld x male thread, 4"	EA	59.82	10.25
3751	2-1/2" PVC Sch 40 Male Adapter Socket Weld x Male Thread	EA	27.90	5.21
3752	3" PVC Sch 40 Male Adapter Socket Weld x Male Thread	EA	37.40	5.22
15157 3754	Female adapter, socket weld x female thread			
3756	Female adapter, 1/2", PVC sched 40, socket weld x female thread	EA	13.63	8.25
3757	Female adapter, 3/4", PVC sched 40, socket weld x female thread	EA	14.45	7.30
3758	Female adapter, 1", PVC sched 40, socket weld x female thread	EA	16.64	6.77
3759	1-1/4" PVC Sch 40 Female Adapter Socket Weld x Female Thread	EA	15.74	4.50
3760	Female adapter, 1.5", PVC sched 40, socket weld x female thread	EA	21.58	6.51
3761	Female adapter, 2", PVC sched 40, socket weld x female thread	EA	25.42	6.56
3762	Female adapter, 4", PVC sched 40, socket weld x female thread	EA	60.75	9.79
3763	2-1/2" PVC Sch 40 Female Adapter Socket Weld x Female Thread	EA	29.31	5.18
3764	3" PVC Sch 40 Female Adapter Socket Weld x Female Thread	EA	34.81	5.18
15157 3800	PVC, schedule 80, socket joints			
15157 3810	Reducing insert			
3812	PVC, sched 80, socket jt, reducing insert, 3/4"	EA	14.02	6.88
3813	PVC, sched 80, socket jt, reducing insert, 1"	EA	17.63	7.22
3814	1-1/4"Reducing Insert Sch 80 PVC Socket Weld	EA	14.21	4.76
3815	PVC, sched 80, socket jt, reducing insert, 1.5"	EA	24.26	7.11
3816	PVC, sched 80, socket jt, reducing insert, 2"	EA	27.90	6.88
3817	PVC, sched 80, socket jt, reducing insert, 4"	EA	64.57	9.86
3818	PVC, sched 80, socket jt, reducing insert, 6"	EA	87.73	18.03
3819	PVC, sched 80, socket jt, reducing insert, 8"	EA	119.31	30.93
3820	2-1/2"Reducing Insert Sch 80 PVC Socket Weld	EA	29.01	5.43
3821	3" Reducing Insert Sch 80 PVC Socket Weld	EA	40.08	5.71
3822	10" Reducing Insert Sch 80 PVC Socket Weld	EA	165.13	
15157 3830	Reducing insert, socket weld x female/male thd			
3832	PVC, sched 80, sock wld x f/m thd, 1/2", socket jt, reducing	EA	15.00	6.24
3833	PVC, sched 80, sock wld x f/m thd, 3/4", socket jt, reducing	EA	14.42	6.84
3834	PVC, sched 80, sock wld x f/m thd, 1", socket jt, reducing	EA	17.12	7.00
3835	1-1/4"Reducing Insert Sch 80 PVC Socket Weld x Female/Male Threa	EA	16.55	4.73
3836	PVC, sched 80, sock wld x f/m thd, 1.5", socket jt, reducing	EA	23.99	6.85
3837	PVC, sched 80, sock wld x f/m thd, 2", socket jt, reducing	EA	26.50	6.46
3838	PVC, sched 80, sock wld x f/m thd, 4", socket jt, reducing	EA	48.38	6.28
3839	2-1/2"Reducing Insert Sch 80 PVC Socket Weld x Female/Male Threa	EA	27.54	5.36
3840	3" Reducing Insert Sch 80 PVC Socket Weld x Female/Male Thread	EA	32.27	5.64
15157 3844	Male adapter, socket weld x male thread			
3846	PVC, sched 80, 1/2", socket jt, adapter, male socket x male thd	EA	15.15	8.44
3847	PVC, sched 80, 3/4", socket jt, adapter, male socket x male thd	EA	15.93	6.96
3848	PVC, sched 80, 1", socket jt, adapter, male socket x male thd	EA	19.96	7.22
3849	1-1/4" Male Adapter Sch 80 PVC Socket Weld x Male Thread	EA	19.83	4.69
3850	PVC, sched 80, 1.5", socket jt, adapter, male socket x male thd	EA	27.01	7.11
3851	PVC, sched 80, 2", socket jt, adapter, male socket x male thd	EA	32.00	6.99
3852	PVC, sched 80, 4", socket jt, adapter, male socket x male thd	EA	61.78	9.12
3853	2-1/2" Male Adapter Sch 80 PVC Socket Weld x Male Thread	EA	32.40	5.36
3854	3" Male Adapter Sch 80 PVC Socket Weld x Male Thread	EA	38.58	5.75
15157 3860	Female adapter, socket weld x female thread			
3862	PVC, sched 80, female socket x female thd, 1/2", socket jt,	EA	14.64	8.47
3863	PVC, sched 80, female socket x female thd, 3/4", socket jt,	EA	16.92	7.30
3864	PVC, sched 80, female socket x female thd, 1", socket jt,	EA	20.68	7.64
3865	1-1/4" Female Adapter Sch 80 PVC Socket Weld x Female Thread	EA	20.91	4.61
3866	PVC, sched 80, female socket x female thd, 1.5", socket jt,	EA	29.95	7.83

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3867	PVC, sched 80, female socket x female thd, 2", socket jt,	EA	39.53	8.16
3868	PVC, sched 80, female socket x female thd, 4", socket jt,	EA	94.32	11.99
3869	2-1/2" Female Adapter Sch 80 PVC Socket Weld x Female Thread	EA	43.60	5.18
3870	3" Female Adapter Sch 80 PVC Socket Weld x Female Thread	EA	57.75	5.57
15157 3872	Union, socket joints			
3874	PVC, sched 80, socket jt, union, 1/2"	EA	21.48	7.30
3875	PVC, sched 80, socket jt, union, 3/4"	EA	23.87	6.66
3876	PVC, sched 80, socket jt, union, 1"	EA	28.25	6.69
3877	1-1/4" Union S80 Socket Weld PVC	EA	27.60	4.58
3878	PVC, sched 80, socket jt, union, 1.5"	EA	41.40	6.35
3879	PVC, sched 80, socket jt, union, 2"	EA	45.60	6.00
3880	2-1/2" Union S80 Socket Weld PVC	EA	46.10	4.93
3881	3" Union Sch 80 Socket Weld PVC	EA	57.61	5.43
15157 3887	Cap			
3890	PVC, sched 80, socket jt, cap, 1/2"	EA	11.72	2.95
3891	PVC, sched 80, socket jt, cap, 3/4"	EA	12.62	3.03
3892	PVC, sched 80, socket jt, cap, 1"	EA	14.76	2.65
3893	1-1/4" Cap Schedule 80 PVC	EA	14.57	2.50
3894	PVC, sched 80, socket jt, cap, 1.5"	EA	18.00	2.50
3895	PVC, sched 80, socket jt, cap, 2"	EA	25.41	2.94
3896	PVC, sched 80, socket jt, cap, 4"	EA	59.05	4.15
3897	PVC, sched 80, socket jt, cap, 6"	EA	113.06	5.71
3898	PVC, sched 80, socket jt, cap, 8"	EA	145.39	8.41
3899	2-1/2" Cap Schedule 80 PVC	EA	39.24	5.71
3900	3" Cap Schedule 80 PVC	EA	54.28	7.27
3901	10" Cap Schedule 80 PVC	EA	213.32	9.10
15157 4500	DW, ABS, non pressure, socket joints			
15157 4899	Wye			
4900	DW, ABS, non press, socket joints, wye, 1.25"	EA	30.12	
4902	DW, ABS, non press, socket joints, wye, 1.5"	EA	32.92	
4904	DW, ABS, non press, socket joints, wye, 2"	EA	36.13	
4906	DW, ABS, non press, socket joints, wye, 3"	EA	57.67	
15157 5000	DW, PVC, schedule 40, socket joints			
15157 5039	1/4 bend			
5040	DW, PVC, sched 40, socket joints, 1/4 bend, 1.25"	EA	19.28	7.98
5060	DW, PVC, sched 40, socket joints, 1/4 bend, 1.5"	EA	19.53	8.93
5070	DW, PVC, sched 40, socket joints, 1/4 bend, 2"	EA	21.05	9.22
5080	DW, PVC, sched 40, socket joints, 1/4 bend, 3"	EA	35.81	13.16
5090	DW, PVC, sched 40, socket joints, 1/4 bend, 4"	EA	45.68	14.58
5100	DW, PVC, sched 40, socket joints, 1/4 bend, 6"	EA	79.37	25.55
5105	DW, PVC, sched 40, socket joints, 1/4 bend, 8"	EA	132.09	30.46
5106	DW, PVC, sched 40, socket joints, 1/4 bend, 10"	EA	208.96	42.28
15157 5109	1/4 bend, long sweep			
5110	DW, PVC, socket joints, 1/4 bend, long sweep, 1.5"	EA	21.25	7.30
5112	DW, PVC, socket joints, 1/4 bend, long sweep, 2"	EA	22.04	8.37
5114	DW, PVC, socket joints, 1/4 bend, long sweep, 3"	EA	38.36	11.67
5116	DW, PVC, socket joints, 1/4 bend, long sweep, 4"	EA	50.35	12.56
15157 5149	1/8 bend			
5150	DW, PVC, sched 40, socket joints, 1/8 bend, 1.25"	EA	19.24	8.17
5170	DW, PVC, sched 40, socket joints, 1/8 bend, 1.5"	EA	19.63	8.74
5180	DW, PVC, sched 40, socket joints, 1/8 bend, 2"	EA	21.01	9.19
5190	DW, PVC, sched 40, socket joints, 1/8 bend, 3"	EA	35.51	13.30
5200	DW, PVC, sched 40, socket joints, 1/8 bend, 4"	EA	44.48	15.29
5210	DW, PVC, sched 40, socket joints, 1/8 bend, 6"	EA	98.69	26.96
5215	DW, PVC, sched 40, socket joints, 1/8 bend, 8"	EA	132.05	32.20
5216	DW, PVC, sched 40, socket joints, 1/8 bend, 10"	EA	192.32	11.49
5217	DW, PVC, sched 40, socket joints, 1/8 bend, 12"	EA	253.74	9.54
15157 5249	Tee sanitary			
5250	DW, PVC, sched 40, socket joints, tee, sanitary, 1.25"	EA	29.38	
5254	DW, PVC, sched 40, socket joints, tee, sanitary, 1.5"	EA	31.37	13.54
5255	DW, PVC, sched 40, socket joints, tee, sanitary, 2"	EA	34.96	14.55
5256	DW, PVC, sched 40, socket joints, tee, sanitary, 3"	EA	55.79	20.90
5257	DW, PVC, sched 40, socket joints, tee, sanitary, 4"	EA	71.06	22.53

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5259	DW, PVC, sched 40, socket joints, tee, sanitary, 6"	EA	169.58	24.23
15157 5276	Tee sanitary, reducing			
5281	Tee, sanitary, reducing, DW, PVC, sched 40, 2x1-1/2x1.5"	EA	36.47	14.65
5282	Tee, sanitary, reducing, DW, PVC, sched 40, 2" x 1.5" x 2"	EA	37.65	14.15
5283	Tee, sanitary, reducing, DW, PVC, sched 40, 2" x 2" x 1.5"	EA	37.92	15.82
5284	Tee, sanitary, reducing, DW, PVC, sched 40, 3" x 3" x 1.5"	EA	52.28	21.01
5285	Tee, sanitary, reducing, DW, PVC, sched 40, 3" x 3" x 2"	EA	56.33	22.85
5286	Tee, sanitary, reducing, DW, PVC, sched 40, 4" x 4" x 1.5"	EA	68.64	27.00
5287	Tee, sanitary, reducing, DW, PVC, sched 40, 4" x 4" x 2"	EA	73.51	20.93
5288	Tee, sanitary, reducing, DW, PVC, sched 40, 4" x 4" x 3"	EA	85.84	21.15
5291	Tee, sanitary, reducing, DW, PVC, sched 40, 6" x 6" x 4"	EA	164.09	24.37
15157 5294	Tee, double sanitary			
5295	Tee, double sanitary, DW, PVC, sched 40, 1.5"	EA	42.95	15.35
5296	Tee, double sanitary, DW, PVC, sched 40, 2"	EA	54.81	19.87
5297	Tee, double sanitary, DW, PVC, sched 40, 3"	EA	92.00	24.62
5298	Tee, double sanitary, DW, PVC, sched 40, 4"	EA	128.44	30.37
15157 5303	Wye, reducing			
5304	Wye, reducing, DW, PVC, sched 40, 2" x 1.5" x 1.5"	EA	39.47	12.63
5305	Wye, reducing, DW, PVC, sched 40, 2" x 2" x 1.5"	EA	43.93	15.04
5306	Wye, reducing, DW, PVC, sched 40, 3" x 3" x 2"	EA	58.85	22.99
5307	Wye, reducing, DW, PVC, sched 40, 4" x 4" x 2"	EA	63.20	21.01
5309	Wye, reducing, DW, PVC, sched 40, 4" x 4" x 3"	EA	70.30	22.10
15157 5313	Combination Y & 1/8 bend			
5314	Combination Y & 1/8 bend, DW, PVC, sched 40, 1.5"	EA	34.50	11.35
5315	Combination Y & 1/8 bend, DW, PVC, sched 40, 2"	EA	38.90	12.84
5317	Combination Y & 1/8 bend, DW, PVC, sched 40, 3"	EA	60.69	15.58
5318	Combination Y & 1/8 bend, DW, PVC, sched 40, 4"	EA	80.69	15.22
5319	Combination Y & 1/8 bend, DW, PVC, sched 40, 6"	EA	182.11	27.25
5320	Combination Y & 1/8 bend, DW, PVC, sched 40, 8"	EA	254.37	34.81
5321	Combination Y & 1/8 bend, DW, PVC, sched 40, 10"	EA	369.34	41.77
5322	Combination Y & 1/8 bend, DW, PVC, sched 40, 12"	EA	501.08	52.21
15157 5324	Combination Y & 1/8 bend, reducing; and wye			
5325	Combination Y & 1/8 bend, 2" x 1.5", reducing, DW, PVC, sched	EA	39.49	9.54
5327	Combination Y & 1/8 bend, 3" x 1.5", reducing, DW, PVC, sched	EA	54.25	21.86
5328	Combination Y & 1/8 bend, 3" x 3" x 2", reducing, DW, PVC,	EA	53.93	15.29
5329	Combination Y & 1/8 bend, 4" x 4" x 2", reducing, DW, PVC,	EA	66.33	22.96
5330	Combination Y & 1/8 bend, 4" x 4" x 3", reducing, DW, PVC,	EA	72.72	17.31
5331	DW, PVC, sched 40, socket joints, wye, 1.25"	EA	29.37	8.28
5332	DW, PVC, sched 40, socket joints, wye, 1.5"	EA	32.12	9.08
5333	DW, PVC, sched 40, socket joints, wye, 2"	EA	35.26	10.00
5334	DW, PVC, sched 40, socket joints, wye, 3"	EA	55.84	15.44
5335	DW, PVC, sched 40, socket joints, wye, 4"	EA	70.95	18.95
5336	DW, PVC, sched 40, socket joints, wye, 6"	EA	152.98	34.49
5337	DW, PVC, sched 40, socket joints, wye, 8"	EA	239.16	52.22
5338	DW, PVC, sched 40, socket joints, wye, 10"	EA	345.30	65.27
5339	DW, PVC, sched 40, socket joints, wye, 12"	EA	497.87	87.02
15157 5346	Double wye			
5347	DW, PVC, sched 40, socket joints, double wye, 1.5"	EA	41.78	13.31
5348	DW, PVC, sched 40, socket joints, double wye, 2"	EA	52.40	17.56
5349	DW, PVC, sched 40, socket joints, double wye, 3"	EA	84.09	20.79
5350	DW, PVC, sched 40, socket joints, double wye, 4"	EA	121.21	22.88
15157 5358	Double wye, reducing; & comb dbl wye & 1/8 bend			
5359	Double wye, reducing, 2"x2"x1.5"x1.5", DW, PVC, sched	EA	55.82	19.52
5360	Double wye, reducing, 3"x3"x2"x2", DW, PVC, sched 40,	EA	88.88	25.47
5361	Double wye, reducing, 4"x4"x3"x3", DW, PVC, sched 40,	EA	119.73	26.50
5362	Combination dbl wye & 1/8 bend, socket joints, 1.5", DW, PVC,	EA	53.96	16.38
5363	Combination dbl wye & 1/8 bend, socket joints, 2", DW, PVC,	EA	63.68	21.79
5364	Combination dbl wye & 1/8 bend, socket joints, 3", DW, PVC,	EA	114.93	35.16
5365	Combination dbl wye & 1/8 bend, socket joints, 4", DW, PVC,	EA	181.56	23.84
15157 5409	Reducer bushing			
5410	DW, PVC, 2" x 1.25", sched 40, socket joints, reducer bushing	EA	18.49	7.95
5411	DW, PVC, 2" x 1.5", sched 40, socket joints, reducer bushing	EA	19.71	8.05
5412	DW, PVC, 3" x 1.5", sched 40, socket joints, reducer bushing	EA	23.55	7.70

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5413	DW, PVC, sched 40, socket joints, reducer bushing, 3" x 2"	EA	26.37	9.26
5414	DW, PVC, sched 40, socket joints, reducer bushing, 4" x 2"	EA	27.26	7.84
5415	DW, PVC, sched 40, socket joints, reducer bushing, 4" x 3"	EA	33.86	9.72
5416	DW, PVC, sched 40, socket joints, reducer bushing, 6" x 4"	EA	52.22	7.95
15157 5424 Closet flange				
5425	DW, PVC, sched 40, socket joints, closet flange 4"	EA	21.97	6.14
5426	4"x3" ABS-PVC Closet Flange	EA	23.12	6.21
15157 7549 Union, socket joints				
7550	PVC union, sched 40, socket joints, 1/2"	EA	17.41	4.80
7560	PVC union, sched 40, socket joints, 3/4"	EA	18.52	4.58
7570	PVC union, sched 40, socket joints, 1"	EA	21.91	4.27
7572	1-1/4" Union Socket Weld, PVC S40	EA	24.57	3.73
7590	PVC union, sched 40, socket joints, 1.5"	EA	29.13	4.01
7600	PVC union, sched 40, socket joints, 2"	EA	36.28	4.22
7601	2-1/2" Union Socket Weld, PVC S40	EA	49.59	4.61
7602	3" Union Socket Weld, PVC Sch 40	EA	60.12	4.61
15157 7607 Polyethylene fittings, SDR 21				
15157 7610 90_ elbow				
7614	Polyethylene pipe, SDR 21, 90 deg elbow, 4"	EA	68.58	10.86
7615	3" 90 Deg Elbows, Polyethylene SDR-21	EA	31.36	4.97
7616	Polyethylene pipe, SDR 21, 90 deg elbow, 6"	EA	126.27	16.35
7617	Polyethylene pipe, SDR 21, 90 deg elbow, 10"	EA	343.56	59.45
7618	Polyethylene pipe, SDR 21, 90 deg elbow, 12"	EA	489.93	83.71
7619	14" 90 Deg Elbows, Polyethylene SDR-21	EA	292.94	46.29
7620	Polyethylene pipe, SDR 21, 90 deg elbow, 18"	EA	856.01	115.96
7621	Polyethylene pipe, SDR 21, 90 deg elbow, 24"	EA	1,680.28	154.17
7622	16" 90 Deg Elbows, Polyethylene SDR-21	EA	345.48	53.94
7623	20" 90 Deg Elbows, Polyethylene SDR-21	EA	533.69	66.37
7624	22" 90 Deg Elbows, Polyethylene SDR-21	EA	642.86	66.59
15157 7626 45_ elbow				
7627	20" 45 Deg Elbows, Polyethylene SDR-21	EA	1,032.65	64.34
7628	22" 45 Deg Elbows, Polyethylene SDR-21	EA	1,049.57	65.26
7629	3" 45 Deg Elbows, Polyethylene SDR-21	EA	58.98	4.68
7630	Polyethylene pipe, SDR 21, 45 deg elbow, 4"	EA	68.75	10.35
7632	Polyethylene pipe, SDR 21, 45 deg elbow, 6"	EA	125.88	15.39
7633	Polyethylene pipe, SDR 21, 45 deg elbow, 10"	EA	263.94	28.10
7634	Polyethylene pipe, SDR 21, 45 deg elbow, 12"	EA	350.48	33.44
7635	Polyethylene pipe, SDR 21, 45 deg elbow, 18"	EA	562.48	38.78
7636	Polyethylene pipe, SDR 21, 45 deg elbow, 24"	EA	1,052.90	58.33
7637	8" 45 Deg Elbows, Polyethylene SDR-21	EA	187.42	18.13
7638	14" 45 Deg Elbows, Polyethylene SDR-21	EA	480.36	44.79
7639	16" 45 Deg Elbows, Polyethylene SDR-21	EA	606.78	52.06
15157 7640 Tee				
7641	14" Tees, Polyethylene SDR-21	EA	417.54	71.88
7642	8" Tees, Polyethylene SDR-21	EA	210.50	28.77
7643	3" Tees, Polyethylene SDR-21	EA	49.57	7.84
7644	Polyethylene pipe, SDR 21, tee, 4"	EA	98.09	23.49
7646	Polyethylene pipe, SDR 21, tee, 6"	EA	170.60	38.29
7647	Polyethylene pipe, SDR 21, tee, 10"	EA	435.83	73.45
7648	Polyethylene pipe, SDR 21, tee, 12"	EA	602.34	101.74
7649	16" Tees, Polyethylene SDR-21	EA	556.67	82.74
7650	Polyethylene pipe, SDR 21, tee, 18"	EA	1,067.73	149.81
7651	Polyethylene pipe, SDR 21, tee, 24"	EA	1,782.70	223.03
7652	20" Tees, Polyethylene SDR-21	EA	751.44	102.48
7653	26" Tees, Polyethylene SDR-21	EA	922.12	104.47
15157 7656 Wye				
7657	22" 45 Degree Wyes, Polyethylene SDR-21	EA	1,122.07	100.79
7658	8" 45 Degree Wyes, Polyethylene SDR-21	EA	240.69	28.23
7659	3" 45 Degree Wyes, Polyethylene SDR-21	EA	87.57	7.33
7660	Polyethylene pipe, SDR 21, wye, 45 deg, 4"	EA	192.97	19.59
7662	Polyethylene pipe, SDR 21, wye, 45 deg, 6"	EA	301.96	28.87
7663	Polyethylene pipe, SDR 21, wye, 45 deg, 10"	EA	527.22	79.72
7664	Polyethylene pipe, SDR 21, wye, 45 deg, 12"	EA	820.18	109.88
7665	14" 45 Degree Wyes, Polyethylene SDR-21	EA	512.98	70.20

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7666	Polyethylene pipe, SDR 21, wye, 45 deg, 18"	EA	1,905.76	197.76
7667	Polyethylene pipe, SDR 21, wye, 45 deg, 24"	EA	2,755.73	215.53
7668	16" 45 Degree Wyes, Polyethylene SDR-21	EA	726.53	80.64
7669	20" 45 Degree Wyes, Polyethylene SDR-21	EA	1,005.50	99.95
15157 7670	Reducer			
7674	Polyethylene pipe, SDR 21, reducer, 4" x 3"	EA	64.79	7.84
7676	Polyethylene pipe, SDR 21, reducer, 6" x 4"	EA	115.06	11.16
7677	8"x6" Reducers, Polyethylene SDR-21	EA	130.87	14.92
7678	Polyethylene pipe, SDR 21, reducer, 12" x 10"	EA	292.38	48.14
7679	10"x8" Reducers, Polyethylene SDR-21	EA	162.62	23.98
7680	Polyethylene pipe, SDR 21, reducer, 20" x 18"	EA	593.78	128.65
7681	14"x12" Reducers, Polyethylene SDR-21	EA	229.28	43.84
7682	16"x14" Reducers, Polyethylene SDR-21	EA	248.38	51.68
7683	18"x16" Reducers, Polyethylene SDR-21	EA	284.85	58.91
7684	22"x20" Reducers, Polyethylene SDR-21	EA	314.90	70.46
7685	24"x22" Reducers, Polyethylene SDR-21	EA	321.67	71.72
15157 7686	Cap			
7687	3" Caps, Polyethylene SDR-21	EA	14.23	2.62
7688	Polyethylene pipe, SDR 21, cap, 4"	EA	41.23	6.00
7689	Polyethylene pipe, SDR 21, cap, 6"	EA	79.51	11.97
7690	8" Caps, Polyethylene SDR-21	EA	92.60	11.63
15157 7696	Flange			
7700	Polyethylene pipe, SDR 21, flange, 4"	EA	61.24	7.77
7701	3" Flange Assemblies, Polyeth SDR-21	EA	42.79	6.15
7702	Polyethylene pipe, SDR 21, flange, 6"	EA	106.43	12.56
7703	Polyethylene pipe, SDR 21, flange, 10"	EA	214.31	20.68
7704	Polyethylene pipe, SDR 21, flange, 12"	EA	334.63	30.31
7706	Polyethylene pipe, SDR 21, flange, 18"	EA	588.17	41.50
7708	Polyethylene pipe, SDR 21, flange, 24"	EA	1,105.02	49.26
7709	8" Flange Assemblies, Polyeth SDR-21	EA	99.05	12.86
7710	14" Flange Assemblies, Polyeth SDR-21	EA	210.40	22.26
7711	16" Flange Assemblies, Polyeth SDR-21	EA	269.78	25.02
7712	20" Flange Assemblies, Polyeth SDR-21	EA	422.95	35.69
7713	22" Flange Assemblies, Polyeth SDR-21	EA	476.15	35.81
15157 7720	Polyethylene pipe and fittings, SDR 17			
15157 7722	Screened pipe			
7724	Polyethylene screened pipe, SDR 17, 4" dia	LF	16.84	
7726	Polyethylene screened pipe, SDR 17, 6" dia	LF	87.22	
15157 7730	Flange			
7732	Polyethylene pipe, SDR 17, flange, 3"	EA	49.00	
7733	Polyethylene pipe, SDR 17, flange, 4"	EA	61.24	
7734	Polyethylene pipe, SDR 17, flange, 6"	EA	117.41	
15157 9000	CPVC Pressure Pipe And Fittings-Socket Weld			
15157 9100	CPVC Pipe And Fittings, Schedule 80			
15157 9110	Pipe			
9111	1/2" Pipe Schedule 80 CPVC	LF	2.48	
9112	3/4" Pipe Schedule 80 CPVC	LF	2.81	
9113	1" Pipe Schedule 80 CPVC	LF	3.72	
9114	1-1/4" Pipe Schedule 80 CPVC	LF	4.66	
9115	1-1/2" Pipe Schedule 80 CPVC	LF	5.47	
9116	2" Pipe Schedule 80 CPVC	LF	7.01	
9117	2-1/2" Pipe Schedule 80 CPVC	LF	8.07	
9118	3" Pipe Schedule 80 CPVC	LF	11.21	
9119	4" Pipe Schedule 80 CPVC	LF	15.41	
15157 9120	Pipe (Continued)			
9121	6" Pipe Schedule 80 CPVC	LF	22.26	
9122	8" Pipe Schedule 80 CPVC	LF	31.79	
15157 9130	90 Degree Elbows			
9131	1/2" 90 Degree Elbow Sch 80 CPVC	EA	6.67	
9132	3/4" 90 Degree Elbow Sch 80 CPVC	EA	8.96	
9133	1" 90 Degree Elbow Sch 80 CPVC	EA	11.37	
9134	1-1/4" 90 Degree Elbow Sch 80CPVC	EA	17.57	
9135	1-1/2" 90 Degree Elbow Sch 80CPVC	EA	20.22	

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9136	2" 90 Degree Elbow Sch 80 CPVC	EA	26.14	
9137	2-1/2" 90 Degree Elbow Sch 80CPVC	EA	43.12	
9138	3" 90 Degree Elbow Sch 80 CPVC	EA	54.27	
9139	4" 90 Degree Elbow Sch 80 CPVC	EA	73.25	
15157 9140	90 Degree Elbows (Continued)			
9141	6" 90 Degree Elbow Sch 80 CPVC	EA	113.52	
9142	8" 90 Degree Elbow Sch 80 CPVC	EA	157.16	
15157 9150	45 Degree Elbows			
9151	1/2" 45 Degree Elbow Sch 80 CPVC	EA	7.20	
9152	3/4" 45 Degree Elbow Sch 80 CPVC	EA	9.41	
9153	1" 45 Degree Elbow Sch 80 CPVC	EA	12.58	
9154	1-1/4" 45 Degree Elbow Sch 80CPVC	EA	19.30	
9155	1-1/2" 45 Degree Elbow Sch 80CPVC	EA	21.51	
9156	2" 45 Degree Elbow Sch 80 CPVC	EA	25.86	
9157	2-1/2" 45 Degree Elbow Sch 80CPVC	EA	45.54	
9158	3" 45 Degree Elbow Sch 80 CPVC	EA	55.36	
9159	4" 45 Degree Elbow Sch 80 CPVC	EA	69.32	
15157 9160	45 Degree Elbows (Continued)			
9161	6" 45 Degree Elbow Sch 80 CPVC	EA	130.78	
9162	8" 45 Degree Elbow Sch 80 CPVC	EA	168.05	
15157 9170	Tees			
9171	1/2" Tee Schedule 80 CPVC	EA	10.39	
9172	3/4" Tee Schedule 80 CPVC	EA	13.81	
9173	1" Tee Schedule 80 CPVC	EA	17.94	
9174	1-1/4" Tee Schedule 80 CPVC	EA	25.63	
9175	1-1/2" Tee Schedule 80 CPVC	EA	30.25	
9176	2" Tee Schedule 80 CPVC	EA	36.48	
9177	2-1/2" Tee Schedule 80 CPVC	EA	57.65	
9178	3" Tee Schedule 80 CPVC	EA	68.39	
9179	4" Tee Schedule 80 CPVC	EA	87.92	
15157 9180	Tees (Continued)			
9181	6" Tee Schedule 80 CPVC	EA	141.88	
9182	8" Tee Schedule 80 CPVC	EA	197.99	
15157 9200	CPVC Fittings, Schedule 80			
15157 9210	Reducing Inserts, Socket Weld			
9211	3/4" Reducing Insert Sch 80 CPVC Socket Weld	EA	8.26	
9212	1" Reducing Insert Sch 80 CPVC Socket Weld	EA	10.50	
9213	1-1/4" Reducing Insert Sch 80CPVC Socket Weld	EA	16.34	
9214	1-1/2" Reducing Insert Sch 80CPVC Socket Weld	EA	18.61	
9215	2" Reducing Insert Sch 80 CPVC Socket Weld	EA	23.90	
9216	2-1/2" Reducing Insert Sch 80CPVC Socket Weld	EA	32.89	
9217	3" Reducing Insert Sch 80 CPVC Socket Weld	EA	46.04	
9218	4" Reducing Insert Sch 80 CPVC Socket Weld	EA	58.84	
9219	6" Reducing Insert Sch 80 CPVC Socket Weld	EA	72.51	
9221	8" Reducing Insert Sch 80 CPVC Socket Weld	EA	128.22	
15157 9230	Reducing Inserts, Socket Weld X Female Or Male Thread			
9231	1/2" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Threa	EA	7.37	
9232	3/4" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Threa	EA	8.33	
9233	1" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Thread	EA	10.36	
9234	1-1/4" Reducing Insert Sch 80CPVC Socket Weld x Female/Male Threa	EA	15.92	
9235	1-1/2" Reducing Insert Sch 80CPVC Socket Weld x Female/Male Threa	EA	18.49	
9236	2" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Thread	EA	25.29	
9237	2-1/2" Reducing Insert Sch 80CPVC Socket Weld x Female/Male Threa	EA	38.25	
9238	3" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Thread	EA	60.34	
9239	4" Reducing Insert Sch 80 CPVC Socket Weld x Female/Male Thread	EA	91.87	
15157 9270	Male Adapters, Socket Weld X Male Thread			
9271	1/2" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	6.70	
9272	3/4" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	8.96	
9273	1" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	11.81	
9274	1-1/4" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	16.89	
9275	1-1/2" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	19.94	
9276	2" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	25.78	
9277	2-1/2" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	41.18	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9278	3" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	274.06	
9279	4" Male Adapter Sch 80 CPVC Socket Weld x Male Thread	EA	74.19	
15157 9280	Female Adapters, Socket Weld X Female Thread			
9281	1/2" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	7.15	
9282	3/4" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	9.09	
9283	1" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	13.13	
9284	1-1/4" Female Adapter Sch 80CPVC Socket Weld x Female Thread	EA	17.03	
9285	1-1/2" Female Adapter Sch 80CPVC Socket Weld x Female Thread	EA	19.35	
9286	2" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	25.29	
9287	2-1/2" Female Adapter Sch 80CPVC Socket Weld x Female Thread	EA	41.47	
9288	3" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	57.72	
9289	4" Female Adapter Sch 80 CPVC Socket Weld x Female Thread	EA	96.96	
15157 9310	Couplings, Socket Weld			
9311	1/2" Cplg Sch 80 Socket WeldCPVC	EA	7.08	
9312	3/4" Cplg Sch 80 Socket WeldCPVC	EA	9.59	
9313	1" Cplg Sch 80 Socket Weld CPVC	EA	12.12	
9314	1-1/4"Cplg Sch80 Socket WeldCPVC	EA	17.34	
9315	1-1/2"Cplg Sch80 Socket WeldCPVC	EA	20.14	
9316	2" Cplg Sch 80 Socket Weld CPVC	EA	24.51	
9317	2-1/2"Cplg Sch80 Socket WeldCPVC	EA	41.80	
9318	3" Cplg Sch 80 Socket Weld CPVC	EA	156.17	
9319	4" Cplg Sch 80 Socket Weld CPVC	EA	61.84	
9321	6" Cplg Sch 80 Socket Weld CPVC	EA	97.30	
9322	8" Cplg Sch 80 Socket Weld CPVC	EA	155.20	
15157 9330	Unions, Socket Weld			
9331	1/2"Union Sch80 Socket Weld CPVC	EA	13.03	
9332	3/4"Union Sch80 Socket Weld CPVC	EA	15.10	
9333	1" Union Sch 80 Socket Weld CPVC	EA	19.41	
9334	1-1/4"Union S80 Socket Weld CPVC	EA	28.34	
9335	1-1/2"Union S80 Socket Weld CPVC	EA	32.09	
9336	2" Union Sch 80 Socket Weld CPVC	EA	43.99	
9337	2-1/2"Union S80 Socket Weld CPVC	EA	70.52	
9338	3"Union Sch 80 Socket Weld CPVC	EA	77.29	
9339	4"Union Sch 80 Socket Weld CPVC	EA	115.75	
9341	6"Union Sch 80 Socket Weld CPVC	EA	152.86	
9342	8"Union Sch 80 Socket Weld CPVC	EA	188.08	
15157 9350	Caps			
9351	1/2" Cap Schedule 80 CPVC	EA	6.95	
9352	3/4" Cap Schedule 80 CPVC	EA	9.39	
9353	1" Cap Schedule 80 CPVC	EA	12.72	
9354	1-1/4" Cap Schedule 80 CPVC	EA	16.86	
9355	1-1/2" Cap Schedule 80 CPVC	EA	18.59	
9356	2" Cap Schedule 80 CPVC	EA	22.65	
9357	2-1/2" Cap Schedule 80 CPVC	EA	34.85	
9358	3" Cap Schedule 80 CPVC	EA	45.24	
9359	4" Cap Schedule 80 CPVC	EA	58.35	
9361	6" Cap Schedule 80 CPVC	EA	72.54	
9362	8" Cap Schedule 80 CPVC	EA	87.41	
15157 9370	Flanges, 150 Lb Socket Weld			
9371	1/2"Flange, 150# Socket Weld CPVC	EA	12.99	
9372	3/4"Flange, 150# Socket Weld CPVC	EA	15.18	
9373	1"Flange, 150# Socket Weld CPVC	EA	18.86	
9374	1-1/4"Flange, 150#Socket WeldCPVC	EA	22.94	
9375	1-1/2"Flange, 150#Socket WeldCPVC	EA	27.91	
9376	2"Flange, 150# Socket Weld CPVC	EA	35.13	
9377	2-1/2"Flange, 150#Socket WeldCPVC	EA	50.67	
9378	3"Flange, 150# Socket Weld CPVC	EA	58.76	
9379	4"Flange, 150# Socket Weld CPVC	EA	77.72	
9381	6"Flange, 150# Socket Weld CPVC	EA	106.08	

15158 Packaged Waste, Vent, Or Water Piping Units

15158 1000 Cast Iron Vent Thru Roof

Note: Includes Roof Flashing, Gaskets And Two Linear Ft Of C.I. Pipe.

15158 1100 Hub-Type

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1101	2" Hub-Type CI Vent Thru Roof	EA	106.27	30.64
1102	3" Hub-Type CI Vent Thru Roof	EA	123.69	34.52
1103	4" Hub-Type CI Vent Thru Roof	EA	138.78	37.64
15158 1200	No-Hub			
1201	2" No Hub CI Vent Thru Roof	EA	96.80	26.80
1202	3" No Hub CI Vent Thru Roof	EA	110.74	30.34
1203	4" No Hub CI Vent Thru Roof	EA	114.11	30.15

15160 Stainless Steel Pipe

15162 0010 Pipe stainless steel

15162 1000 Sch 40S Pipe - Type 304, With 150 Lb Screwed Fittings

Note: Price Includes Hangers And Fittings. Fittings Are Assumed Every 10 Ft. Not For Use Where Detail Is Available.

1001	1/2" (12mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	9.63	
1002	3/4" (20mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	11.31	
1003	1" (25mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	13.56	
1004	1-1/4" (32mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	16.30	
1005	1-1/2" (40mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	17.77	
1006	2" (50mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	23.24	
1007	2-1/2" (60mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	31.63	
1008	3" (80mm) SST Pipe, Sch 40 Type 304 w/150# Scrd Ftng	LF	38.71	

15162 2039 Schedule 10

15162 2039 Type 304

2040	Pipe sst sched 10, type 304, PE, no weld no hgr 1/4" dia	LF	4.56	
2080	Pipe sst sched 10, type 304, PE, no weld no hgr 1" dia	LF	8.93	1.13
2090	1-1/4" SST Pipe, Sch 10 Type 304 With Butt Weld Fitting	LF	12.25	2.95
2100	Pipe sst sched 10, type 304, PE, no weld no hgr 1.5" dia	LF	12.07	1.49
2110	Pipe sst sched 10, type 304, PE, no weld no hgr 2" dia	LF	15.59	2.09
2120	2-1/2" SST Pipe, Sch 10 Type 304 With Butt Weld Fitting	LF	20.35	4.12
2130	3" SST Pipe, Sch 10 Type 304 With Butt Weld Fitting	LF	24.27	4.61
2140	Pipe sst sched 10, type 304, PE, no weld no hgr 4" dia	LF	29.98	3.16
2160	Pipe sst sched 10, type 304, PE, no weld no hgr 6" dia	LF	49.61	5.51

15162 2789 Type 316

2790	Pipe sst sched 10, type 316, PE, no weld no hgr 1/4" dia	LF	4.96	0.95
2830	Pipe sst sched 10, type 316, PE, no weld no hgr 1" dia	LF	10.74	1.13
2832	1-1/4" SST Pipe, Sch 10 Type 316	LF	12.55	2.95
2850	Pipe sst sched 10, type 316, PE, no weld no hgr 1.5" dia	LF	14.69	1.49
2860	Pipe sst sched 10, type 316, PE, no weld no hgr 2" dia	LF	18.76	2.09
2862	2-1/2" SST Pipe, Sch 10 Type 316	LF	21.16	4.12
2864	3" SST Pipe, Sch 10 Type 316	LF	25.78	4.61
2890	Pipe sst sched 10, type 316, PE, no weld no hgr 4" dia	LF	36.79	3.16
2910	Pipe sst sched 10, type 316, PE, no weld no hgr 6" dia	LF	60.70	5.51

15162 3000 Schedule 40

15162 3000 Type 304

3010	Pipe sst sched 40, 1/2", type 304, threaded, cplg 10' OC, no	LF	10.48	1.97
3012	Pipe sst sched 40, 3/4", type 304, threaded, cplg 10' OC, no	LF	11.85	2.76
3014	Pipe sst sched 40, 1", type 304, threaded, cplg 10' OC, no	LF	14.82	3.21
3016	Pipe sst sched 40, 1.5", type 304, threaded, cplg 10' OC, no	LF	20.29	4.08
3018	Pipe sst sched 40, 2", type 304, threaded, cplg 10' OC, no	LF	26.32	5.04
3020	Pipe sst sched 40, 4", type 304, threaded, cplg 10' OC, no	LF	65.82	9.97

15162 3100 Type 316

3110	Pipe sst sched 40, 1/2", type 316, threaded, cplg 10' OC, no	LF	12.01	2.04
3112	Pipe sst sched 40, 3/4", type 316, threaded, cplg 10' OC, no	LF	13.44	2.91
3114	Pipe sst sched 40, 1", type 316, threaded, cplg 10' OC, no	LF	17.35	3.44
3116	Pipe sst sched 40, 1.5", type 316, threaded, cplg 10' OC, no	LF	24.00	4.37
3118	Pipe sst sched 40, 2", type 316, threaded, cplg 10' OC, no	LF	31.61	5.43
3120	Pipe sst sched 40, 4", type 316, threaded, cplg 10' OC, no	LF	82.85	11.07

15162 3200 Type

3210	1-1/4"SST, Sch 40 Type 316 w/150# Threaded Ftng	LF	14.51	2.28
3220	2-1/2"SST, Sch 40 Type 316 w/150# Threaded Ftng	LF	30.15	4.18
3230	3"SST, Sch 40 Type 316 w/150# Threaded Ftng	LF	39.45	5.13

15162 3500 Type

3510	1-1/4" SST Pipe, Sch 40 Type 304 With 150# Threaded Fitting	LF	13.20	2.32
3520	2-1/2" SST Pipe, Sch 40 Type 304 With 150# Threaded Fitting	LF	27.51	4.22

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3530	3" SST Pipe, Sch 40 Type 304 With 150# Threaded Fitting	LF	34.57	5.17
15162 5000 Tubing				
15162 5010 Type 304				
5021	Stainless tubing, .035 wall, 1/4", no joints, no hangers,	LF	2.68	1.10
5022	Stainless tubing, .035 wall, 3/8", no joints, no hangers,	LF	2.91	1.02
5023	Stainless tubing, .035 wall, 1/2", no joints, no hangers,	LF	3.25	1.29
5024	Stainless tubing, .035 wall, 5/8", no joints, no hangers,	LF	3.93	0.91
5025	Stainless tubing, .035 wall, 3/4", no joints, no hangers,	LF	4.53	1.09
5026	Stainless tubing, .035 wall, 7/8", no joints, no hangers,	LF	5.21	1.40
5027	Stainless tubing, .035 wall, 1", no joints, no hangers, type 304	LF	5.14	1.43
5041	Stainless tubing, .049 wall, 1/4", no joints, no hangers,	LF	3.02	0.72
5042	Stainless tubing, .049 wall, 3/8", no joints, no hangers,	LF	3.25	0.91
5043	Stainless tubing, .049 wall, 1/2", no joints, no hangers,	LF	3.70	0.87
5044	Stainless tubing, .049 wall, 5/8", no joints, no hangers,	LF	4.15	1.17
5045	Stainless tubing, .049 wall, 3/4", no joints, no hangers,	LF	4.76	1.36
5046	Stainless tubing, .049 wall, 7/8", no joints, no hangers,	LF	5.67	1.47
5047	Stainless tubing, .049 wall, 1", no joints, no hangers, type 304	LF	5.48	1.55
5061	Stainless tubing, .065 wall, 1/4", no joints, no hangers,	LF	3.59	0.95
5062	Stainless tubing, .065 wall, 3/8", no joints, no hangers,	LF	4.49	1.06
5063	Stainless tubing, .065 wall, 1/2", no joints, no hangers,	LF	4.72	1.36
5064	Stainless tubing, .065 wall, 5/8", no joints, no hangers,	LF	4.72	1.36
5065	Stainless tubing, .065 wall, 3/4", no joints, no hangers,	LF	5.44	1.32
5066	Stainless tubing, .065 wall, 7/8", no joints, no hangers,	LF	6.34	1.73
5067	Stainless tubing, .065 wall, 1", no joints, no hangers, type 304	LF	6.38	1.70
15162 5210 Type 316				
5221	Stainless tubing, .035 wall, 1/4", no joints, no hangers,	LF	2.91	1.13
5222	Stainless tubing, .035 wall, 3/8", no joints, no hangers,	LF	3.02	0.91
5223	Stainless tubing, .035 wall, 1/2", no joints, no hangers,	LF	3.47	1.10
5224	Stainless tubing, .035 wall, 5/8", no joints, no hangers,	LF	4.32	0.91
5225	Stainless tubing, .035 wall, 3/4", no joints, no hangers,	LF	4.76	1.09
5226	Stainless tubing, .035 wall, 7/8", no joints, no hangers,	LF	5.84	1.24
5227	Stainless tubing, .035 wall, 1", no joints, no hangers, type 316	LF	5.65	1.36
5241	Stainless tubing, .049 wall, 1/4", no joints, no hangers,	LF	3.25	0.72
5242	Stainless tubing, .049 wall, 3/8", no joints, no hangers,	LF	3.36	0.87
5243	Stainless tubing, .049 wall, 1/2", no joints, no hangers,	LF	4.04	0.91
5244	Stainless tubing, .049 wall, 5/8", no joints, no hangers,	LF	4.38	1.13
5245	Stainless tubing, .049 wall, 3/4", no joints, no hangers,	LF	4.99	1.28
5246	Stainless tubing, .049 wall, 7/8", no joints, no hangers,	LF	6.34	1.28
5247	Stainless tubing, .049 wall, 1", no joints, no hangers, type 316	LF	6.05	1.59
5261	Stainless tubing, .065 wall, 1/4", no joints, no hangers,	LF	3.81	0.95
5262	Stainless tubing, .065 wall, 3/8", no joints, no hangers,	LF	4.72	1.06
5263	Stainless tubing, .065 wall, 1/2", no joints, no hangers,	LF	5.00	1.36
5264	Stainless tubing, .065 wall, 5/8", no joints, no hangers,	LF	5.29	1.40
5265	Stainless tubing, .065 wall, 3/4", no joints, no hangers,	LF	6.00	1.32
5266	Stainless tubing, .065 wall, 7/8", no joints, no hangers,	LF	7.59	1.32
5267	Stainless tubing, .065 wall, 1", no joints, no hangers, type 316	LF	7.12	1.74
15162 5300 Stainless schedule 10, butt weld pipe, type 316L				
5320	Stainless sched 10, butt weld pipe, type 316L, 8"	LF	101.77	17.60
5322	Stainless sched 10, butt weld pipe, type 316L, 10"	LF	138.11	21.13
5324	Stainless sched 10, butt weld pipe, type 316L, 12"	LF	171.33	23.56
15162 5340 Type				
5342	14" SST Pipe, Sch 10 Type 316L w/Welded Butt Fitting	LF	128.54	15.78
5344	16" SST Pipe, Sch 10 Type 316L w/Welded Butt Fitting	LF	141.41	17.92
5346	18" SST Pipe, Sch 10 Type 316L w/Welded Butt Fitting	LF	156.65	20.75
5348	20" SST Pipe, Sch 10 Type 316L w/Welded Butt Fitting	LF	162.27	25.46
5350	24" SST Pipe, Sch 10 Type 316L w/Welded Butt Fitting	LF	285.00	30.68
15162 5360 Stainless schedule 40, butt weld pipe, type 316L				
5370	Stainless sched 40, butt weld pipe, type 316L, 8"	LF	184.56	16.42
5372	Stainless sched 40, butt weld pipe, type 316L, 10"	LF	278.96	19.45
5374	Stainless sched 40, butt weld pipe, type 316L, 12"	LF	314.30	19.99
15163 3300 Type 304L Sch 10 And Welded Butt Fittings				
15163 3310 Pipe				
3311	8" SST Pipe, Sch 10 Type 304L w/ Welded Butt Fitting	LF	70.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3312	10" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	87.45	
3313	12" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	107.71	
3314	14" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	133.86	
3315	16" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	147.18	
3316	18" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	164.64	
3317	20" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	168.24	
3318	24" SST Pipe, Sch 10 Type 304L w /Welded Butt Fitting	LF	300.76	
15163 3320 90 Degree Elbows				
3321	8" SST 90 Deg Elbow, Type 304L	EA	924.84	
3322	10" SST 90 Deg Elbow, Type 304L	EA	1,266.40	
3323	12" SST 90 Deg Elbow, Type 304L	EA	1,691.82	
3324	14" SST 90 Deg Elbow, Type 304L	EA	2,141.03	
3325	16" SST 90 Deg Elbow, Type 304L	EA	2,695.52	
3326	18" SST 90 Deg Elbow, Type 304L	EA	3,424.11	
3327	20" SST 90 Deg Elbow, Type 304L	EA	5,459.05	
3328	24" SST 90 Deg Elbow, Type 304L	EA	7,716.19	
15163 3330 45 Degree Elbows				
3331	8" SST 45 Deg Elbow, Type 304L	EA	859.25	
3332	10" SST 45 Deg Elbow, Type 304L	EA	1,094.03	
3333	12" SST 45 Deg Elbow, Type 304L	EA	1,431.97	
3334	14" SST 45 Deg Elbow, Type 304L	EA	1,772.58	
3335	16" SST 45 Deg Elbow, Type 304L	EA	2,224.17	
3336	18" SST 45 Deg Elbow, Type 304L	EA	3,014.10	
3337	20" SST 45 Deg Elbow, Type 304L	EA	4,967.41	
3338	24" SST 45 Deg Elbow, Type 304L	EA	6,875.07	
15163 3340 Tees				
3341	8" SST Tee, Type 304L	EA	1,146.79	
3342	10" SST Tee, Type 304L	EA	1,433.23	
3343	12" SST Tee, Type 304L	EA	2,304.83	
3344	14" SST Tee, Type 304L	EA	2,896.82	
3345	16" SST Tee, Type 304L	EA	3,241.99	
3346	18" SST Tee, Type 304L	EA	3,961.30	
3347	20" SST Tee, Type 304L	EA	5,328.10	
3348	24" SST Tee, Type 304L	EA	8,120.43	
15163 3350 Reducers				
3351	8" SST Reducer, Type 304L	EA	786.36	
3352	10" SST Reducer, Type 304L	EA	930.10	
3353	12" SST Reducer, Type 304L	EA	1,106.04	
3354	14" SST Reducer, Type 304L	EA	1,347.69	
3355	16" SST Reducer, Type 304L	EA	1,636.95	
3356	18" SST Reducer, Type 304L	EA	2,036.55	
3357	20" SST Reducer, Type 304L	EA	2,974.88	
3358	24" SST Reducer, Type 304L	EA	4,608.91	
15163 3360 Flanges				
3361	8" Flange, Sch 10, Type 304L	EA	629.96	
3362	10" Flange, Sch 10, Type 304L	EA	939.50	
3363	12" Flange, Sch 10, Type 304L	EA	1,292.44	
3364	14" Flange, Sch 10, Type 304L	EA	1,679.74	
3365	16" Flange, Sch 10, Type 304L	EA	2,237.65	
3366	18" Flange, Sch 10, Type 304L	EA	2,334.12	
3367	20" Flange, Sch 10, Type 304L	EA	3,238.95	
3368	22" Flange, Sch 10, Type 304L	EA	7,290.19	
15163 3400 Type 304L Sch 40 Pipe And Welded Butt Fittings				
15163 3410 Pipe				
3411	8" SST Pipe, Sch 40, Type 304L w/ Welded Butt Fitting	LF	131.66	
3412	10" SST Pipe, Sch 40, Type 304L w /Welded Butt Fitting	LF	184.23	
3413	12" SST Pipe, Sch 40, Type 304L w /Welded Butt Fitting	LF	224.42	
15163 3420 90 Degree Elbows				
3421	8" SST 90 Deg Elbow, Type 304L	EA	1,599.57	
3422	10" SST 90 Deg Elbow, Type 304L	EA	2,933.05	
3423	12" SST 90 Deg Elbow, Type 304L	EA	3,778.86	
15163 3430 45 Degree				
3431	8" SST 45 Deg Elbow, Type 304L	EA	1,626.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3432	10" SST 45 Deg Elbow, Type 304L	EA	2,825.83	
3433	12" SST 45 Deg Elbow, Type 304L	EA	3,782.27	
15163 3440 Tees				
3441	8" SST Tee, Type 304L	EA	2,546.84	
3442	10" SST Tee, Type 304L	EA	4,235.70	
3443	12" SST Tee, Type 304L	EA	5,344.73	
15163 3450 Reducers				
3451	8" SST Reducer, Type 304L	EA	1,102.73	
3452	10" SST Reducer, Type 304L	EA	1,513.37	
3453	12" SST Reducer, Type 304L	EA	1,651.82	
15164 0010 Pipe, stainless steel, fittings				
15164 2000 Butt weld joint, schedule 10, type 304				
15164 2020 90_ elbow				
2060	Sst ftg, butt weld jt, 1", type 304, 90 deg elb, long, sched 10	EA	46.91	2.14
2070	1-1/4"SST 90Deg Ell,S10 Type 304	EA	133.47	4.68
2080	Sst ftg, butt weld jt, 1.5", type 304, 90 deg elb, long,	EA	56.59	1.82
2090	Sst ftg, butt weld jt, 2", type 304, 90 deg elb, long, sched 10	EA	68.69	1.85
2092	2-1/2"SST 90Deg Ell,S10 Type 304	EA	239.75	5.78
2094	3" SST 90Deg Ell,Sch 10 Type 304	EA	274.75	6.11
2130	Sst ftg, butt weld jt, 4", type 304, 90 deg elb, long, sched 10	EA	199.16	5.12
2150	Sst ftg, butt weld jt, 6", type 304, 90 deg elb, long, sched 10	EA	373.05	9.28
15164 2500 45_ elbow				
2540	Sst ftg, butt weld jt, 1", type 304, 45 deg elb, long, sched 10	EA	52.06	2.29
2550	1-1/4"SST 45Deg Ell,S10 Type 304	EA	134.27	4.68
2560	Sst ftg, butt weld jt,1.5", type 304, 45 deg elb, long, sched 10	EA	56.59	1.85
2570	Sst ftg, butt weld jt, 2", type 304, 45 deg elb, long, sched 10	EA	66.47	1.71
2580	2-1/2"SST 45Deg Ell,S10 Type 304	EA	239.22	5.78
2590	3" SST 45Deg Ell,Sch 10 Type 304	EA	269.02	6.15
2610	Sst ftg, butt weld jt, 4", type 304, 45 deg elb, long, sched 10	EA	186.49	4.98
2630	Sst ftg, butt weld jt, 6", type 304, 45 deg elb, long, sched 10	EA	309.66	8.80
15164 2670 Reducer				
2673	1-1/2 x1-1/4"SST Red, S10 Tp 304	EA	154.30	4.97
2674	Sst ftg, butt weld jt, 1" x 3/4", sched 10, type 304,	EA	73.04	3.31
2675	1-1/4 x1"SST Reducers,S10 Tp 304	EA	127.25	4.64
2676	Sst ftg, butt weld jt, 2" x 1.5", sched 10, type 304,	EA	80.91	2.32
2677	2-1/2 x2"SST Reducers,S10 Tp 304	EA	218.99	5.74
2678	Sst ftg, butt weld jt, sched 10, type 304, reducer, 6" x 4"	EA	276.84	8.03
2679	3 x2-1/2"SST Reducers,S10 Tp 304	EA	260.26	6.08
15164 2680 Caps				
2680	4"x3"SST Reducers,Sch10 Type 304	EA	311.38	7.14
2681	1-1/4" SST Caps, Sch 10 Type 304	EA	84.02	2.43
2682	Sst ftg, butt weld jt, sched 10, type 304, caps, 1"	EA	56.72	1.82
2684	Sst ftg, butt weld jt, sched 10, type 304, caps, 1.5"	EA	63.10	1.78
2685	Sst ftg, butt weld jt, sched 10, type 304, caps, 2"	EA	60.36	1.45
2686	Sst ftg, butt weld jt, sched 10, type 304, caps, 4"	EA	126.97	2.43
2687	Sst ftg, butt weld jt, sched 10, type 304, caps, 6"	EA	201.00	5.49
2689	2-1/2" SST Caps, Sch 10 Type 304	EA	137.43	2.80
2690	3" SST Caps, Sch 10 Type 304	EA	157.18	3.13
15164 3000 Tee, straight				
3050	Sst ftg, butt weld jt, 1", sched 10, type 304, tee, straight	EA	86.64	3.52
3060	1-1/4" SST Tees, Sch 10 Type 304	EA	210.81	7.14
3070	Sst ftg, butt weld jt, 1.5", sched 10, type 304, tee,	EA	104.01	3.27
3080	Sst ftg, butt weld jt, 2", sched 10, type 304, tee, straight	EA	114.72	2.87
3090	2-1/2" SST Tees, Sch 10 Type 304	EA	382.77	8.51
3110	3" SST Tees, Sch 10 Type 304	EA	448.18	8.80
3120	Sst ftg, butt weld jt, 4", sched 10, type 304, tee, straight	EA	377.73	9.37
3140	Sst ftg, butt weld jt, 6", sched 10, type 304, tee, straight	EA	601.34	14.40
15164 3159 Butt weld joint, schedule 10, type 316				
15164 3161 90_ elbow				
3164	Sst ftg, butt weld jt, sched 10, type 316, 90 deg elbow, 1"	EA	49.36	2.18
3165	1-1/4" SST 90 Deg Ell,S10 Tp 316	EA	137.45	4.68
3166	Sst ftg, butt weld jt, sched 10, type 316, 90 deg elbow, 1.5"	EA	60.16	1.89
3167	Sst ftg, butt weld jt, sched 10, type 316, 90 deg elbow, 2"	EA	73.44	1.93

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3168	Sst ftg, butt weld jt, sched 10, type 316, 90 deg elbow, 4"	EA	215.33	5.23
3169	Sst ftg, butt weld jt, sched 10, type 316, 90 deg elbow, 6"	EA	418.68	9.43
3170	2-1/2" SST 90 Deg Ell, S10 Tp 316	EA	248.49	5.71
3171	3" SST 90 Deg Ell, S10 Type 316	EA	281.88	6.08
15164 3172 45_ elbow				
3173	2-1/2" SST 45 Deg Ell, S10 Tp 316	EA	245.49	5.74
3174	Sst ftg, butt weld jt, sched 10, type 316, 45 deg elbow, 1"	EA	56.06	2.40
3175	1-1/4" SST 45 Deg Ell, S10 Tp 316	EA	137.78	4.64
3176	Sst ftg, butt weld jt, sched 10, type 316, 45 deg elbow, 1.5"	EA	60.16	1.93
3177	Sst ftg, butt weld jt, sched 10, type 316, 45 deg elbow, 2"	EA	70.55	1.74
3178	Sst ftg, butt weld jt, sched 10, type 316, 45 deg elbow, 4"	EA	198.85	5.12
3179	Sst ftg, butt weld jt, sched 10, type 316, 45 deg elbow, 6"	EA	336.28	9.02
3180	3" SST 45 Deg Ell, S10 Type 316	EA	276.78	6.11
15164 3181 Tee				
3182	2-1/2" SST Tee, S10 Type 316	EA	399.53	8.43
3183	Sst ftg, butt weld jt, sched 10, type 316, tee, 1"	EA	93.77	3.67
3184	1-1/4" SST Tee, S10 Type 316	EA	219.65	7.07
3185	Sst ftg, butt weld jt, sched 10, type 316, tee, 1.5"	EA	111.86	3.38
3186	Sst ftg, butt weld jt, sched 10, type 316, tee, 2"	EA	122.64	2.91
3187	Sst ftg, butt weld jt, sched 10, type 316, tee, 4"	EA	399.52	9.37
3188	Sst ftg, butt weld jt, sched 10, type 316, tee, 6"	EA	666.70	14.43
3189	3" SST Tee, S10 Type 316	EA	476.50	8.73
15164 3192 Reducer, concentric				
3193	Sst ftg, butt weld jt, concentric, 1"x1/2", sched 10,	EA	85.44	3.74
3194	1-1/4" SST Reducer, S10 Type 316	EA	127.70	4.64
3195	Sst ftg, butt weld jt, concentric, 1.5"x1", sched 10,	EA	91.40	3.05
3196	Sst ftg, butt weld jt, concentric, 2"x1.25", sched 10,	EA	92.57	2.36
3197	2-1/2" SST Reducer, S10 Type 316	EA	262.18	5.52
3198	Sst ftg, butt weld jt, concentric, 4"x2", sched 10, type	EA	140.75	4.14
3202	Sst ftg, butt weld jt, concentric, 8"x4", sched 10, type	EA	463.07	7.36
15164 3204 Flange				
3205	2-1/2" SST Flange, S10 Type 316	EA	189.41	3.24
3206	Sst ftg, butt weld jt, sched 10, type 316, flange, 1"	EA	123.76	1.78
3207	1-1/4" SST Flange, S10 Type 316	EA	97.79	3.06
3208	Sst ftg, butt weld jt, sched 10, type 316, flange, 1.5"	EA	158.13	3.16
3209	Sst ftg, butt weld jt, sched 10, type 316, flange, 2"	EA	184.15	4.07
3210	Sst ftg, butt weld jt, sched 10, type 316, flange, 4"	EA	425.72	6.79
3211	Sst ftg, butt weld jt, sched 10, type 316, flange, 6"	EA	737.56	10.31
3212	3" SST Flange, S10 Type 316	EA	211.74	8.73
15164 3214 Cap				
3215	2-1/2" SST Cap, S10 Type 316	EA	149.40	2.72
3216	Sst ftg, butt weld jt, sched 10, type 316, cap, 1"	EA	69.17	2.00
3217	1-1/4" SST Cap, S10 Type 316	EA	93.91	2.03
3218	Sst ftg, butt weld jt, sched 10, type 316, cap, 1.5"	EA	76.68	1.92
3221	Sst ftg, butt weld jt, sched 10, type 316, cap, 2"	EA	69.42	1.53
3222	Sst ftg, butt weld jt, sched 10, type 316, cap, 4"	EA	110.55	1.92
3223	Sst ftg, butt weld jt, sched 10, type 316, cap, 6"	EA	176.30	4.38
3224	3" SST Cap, S10 Type 316	EA	167.63	3.09
15164 3225 Butt weld joint, schedule 10, type 316L				
15164 3226 90_ elbow				
3227	Sst ftg, butt weld jt, sched 10, type 316L, 90 deg elbow, 8"	EA	650.14	18.52
3228	Sst ftg, butt weld jt, sched 10, type 316L, 90 deg elbow, 10"	EA	1,153.00	38.44
3229	Sst ftg, butt weld jt, sched 10, type 316L, 90 deg elbow, 12"	EA	1,694.45	57.74
15164 3234 45_ elbow				
3235	Sst ftg, butt weld jt, sched 10, type 316L, 45 deg elbow, 8"	EA	503.60	15.87
3236	Sst ftg, butt weld jt, sched 10, type 316L, 45 deg elbow, 10"	EA	926.73	38.26
3237	Sst ftg, butt weld jt, sched 10, type 316L, 45 deg elbow, 12"	EA	1,317.33	58.03
15164 3242 Tee				
3243	Sst ftg, butt weld jt, sched 10, type 316L, tee, 8"	EA	1,260.75	44.44
3244	Sst ftg, butt weld jt, sched 10, type 316L, tee, 10"	EA	1,783.94	80.12
3245	Sst ftg, butt weld jt, sched 10, type 316L, tee, 12"	EA	2,269.01	86.20
15164 3250 Reducer				
3251	Sst ftg, butt weld jt, sched 10, type 316L, reducer, 8"	EA	586.81	15.47

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3252	Sst ftg, butt weld jt, sched 10, type 316L, reducer, 10"	EA	767.37	27.87
3253	Sst ftg, butt weld jt, sched 10, type 316L, reducer, 12"	EA	1,045.73	46.36
15164 3258 Flange				
3259	Sst ftg, butt weld jt, sched 10, type 316L, flange, 8"	EA	735.04	13.26
3261	Sst ftg, butt weld jt, sched 10, type 316L, flange, 10"	EA	981.14	16.57
3263	Sst ftg, butt weld jt, sched 10, type 316L, flange, 12"	EA	1,433.12	22.06
15164 3281 Butt weld jt, schedule 40, type 304				
15164 3283 90_ elbow				
3284	Sst ftg, butt weld jt, 1/2", type 304, 90 deg elb, long,	EA	51.57	2.87
3370	Sst ftg, butt weld jt, 6", type 304, 90 deg elb, long, sched 40	EA	464.20	11.78
3380	Sst ftg, butt weld jt, 8", type 304, 90 deg elb, long, sched 40	EA	751.75	19.88
15164 3359 Butt weld jt, schedule 40, type 316L				
15164 3860 90_ elbow				
3864	Sst ftg, butt weld jt, sched 40, type 316L, 90 deg elbow, 8"	EA	911.00	16.02
3865	Sst ftg, butt weld jt, sched 40, type 316L, 90 deg elbow, 10"	EA	1,757.10	27.14
3866	Sst ftg, butt weld jt, sched 40, type 316L, 90 deg elbow, 12"	EA	2,481.16	39.91
15164 3870 45_ elbow				
3874	Sst ftg, butt weld jt, sched 40, type 316L, 45 deg elbow, 8"	EA	674.11	13.62
3875	Sst ftg, butt weld jt, sched 40, type 316L, 45 deg elbow, 10"	EA	1,170.03	22.90
3876	Sst ftg, butt weld jt, sched 40, type 316L, 45 deg elbow, 12"	EA	1,574.80	31.26
15164 3880 Tee				
3884	Sst ftg, butt weld jt, sched 40, type 316L, tee, 8"	EA	1,376.02	23.20
3885	Sst ftg, butt weld jt, sched 40, type 316L, tee, 10"	EA	2,491.46	40.14
3886	Sst ftg, butt weld jt, sched 40, type 316L, tee, 12"	EA	3,164.02	53.94
15164 3890 Reducer				
3894	Sst ftg, butt weld jt, sched 40, type 316L, reducer, 8"	EA	427.17	8.10
3895	Sst ftg, butt weld jt, sched 40, type 316L, reducer, 10"	EA	529.91	12.04
3896	Sst ftg, butt weld jt, sched 40, type 316L, reducer, 12"	EA	725.68	21.80
15164 3900 Flange				
3904	Sst ftg, butt weld jt, sched 40, type 316L, flange, 8"	EA	601.89	73.93
3905	Sst ftg, butt weld jt, sched 40, type 316L, flange, 10"	EA	800.13	93.53
3906	Sst ftg, butt weld jt, sched 40, type 316L, flange, 12"	EA	1,215.49	125.53
15164 6260 Weld flanges, stainless steel, type 304				
15164 6270 Slip on, 150 lb (welded, front and back)				
6300	Sst ftg, weld flg, type 304, slip on, 150 lb, 1" dia	EA	76.08	3.12
6310	1-1/4"SST Flanges, Sch10 Type 304	EA	90.32	4.31
6320	Sst ftg, weld flg, type 304, slip on, 150 lb, 1.5" dia	EA	98.79	3.67
6330	Sst ftg, weld flg, type 304, slip on, 150 lb, 2" dia	EA	118.33	4.65
6332	2-1/2"SST Flanges, Sch40 Type 304	EA	101.40	5.09
6334	3" SST Flanges, Sch 40 Type 304	EA	123.23	6.54
6340	2-1/2"SST Flanges, Sch10 Type 304	EA	173.20	8.65
6350	3" SST Flanges, Sch 10 Type 304	EA	192.87	11.23
6370	Sst ftg, weld flg, type 304, slip on, 150 lb, 4" dia	EA	223.62	8.72
6390	Sst ftg, weld flg, type 304, slip on, 150 lb, 6" dia	EA	345.36	13.26
15164 7000 Threaded joint, 150 lb, type 304				
15164 7030 90_ elbow				
7080	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 1/2"	EA	32.34	18.45
7090	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 3/4"	EA	35.59	20.16
7100	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 1"	EA	41.03	22.09
7102	1-1/4"SST 90Deg Ell, S40 Type 304	EA	37.60	20.99
7120	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 1.5"	EA	53.78	24.87
7130	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 2"	EA	67.01	26.68
7132	2-1/2"SST 90Deg Ell, S40 Type 304	EA	106.16	32.20
7134	3"SST 90 Deg Ell, Sch 40 Type 304	EA	135.79	37.03
7160	Sst ftg, threaded jt, 150 lb, type 304, 90 deg elb, 4"	EA	261.33	35.57
15164 7180 45_ elbow				
7220	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 1/2"	EA	33.85	17.36
7230	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 3/4"	EA	38.05	17.93
7240	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 1"	EA	41.91	19.06
7242	1-1/4"SST 45Deg Ell, S40 Type 304	EA	36.98	16.88
7260	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 1.5"	EA	53.94	20.58
7270	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 2"	EA	68.04	35.34

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7272	2-1/2"SST 45Deg Ell,S40 Type 304	EA	119.11	31.71
7274	3"SST 45 Deg Ell,Sch 40 Type 304	EA	160.54	36.23
7300	Sst ftg, threaded jt, 150 lb, type 304, 45 deg elb, 4"	EA	308.87	61.28
15164 7320 Tee				
7360	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 1/2"	EA	48.83	28.14
7370	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 3/4"	EA	54.79	33.62
7380	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 1"	EA	60.34	36.27
7382	1-1/4" SST Tee, Sch 40 Type 304	EA	55.13	32.85
7400	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 1.5"	EA	84.90	51.94
7410	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 2"	EA	96.36	34.74
7412	2-1/2" SST Tee, Sch 40 Type 304	EA	156.36	49.50
7414	3" SST Tee, Sch 40 Type 304	EA	221.19	55.97
7440	Sst ftg, threaded jt, 150 lb, type 304, tee, straight, 4"	EA	393.69	96.02
15164 7599 Reducer, concentric				
7600	Sst ftg, threaded jt, 1/2", 150 lb, type 304, reducer cnctrc	EA	29.05	20.27
7610	Sst ftg, threaded jt, 3/4", 150 lb, type 304, reducer cnctrc	EA	32.47	22.73
7612	Sst ftg, threaded jt, 150 lb, type 304, reducer cnctrc, 1"	EA	38.94	25.08
7614	1-1/4"x1" SST Reducers,S40 Tp 304	EA	40.04	19.66
7616	1-1/2"x1-1/4" SST Red, S40 Tp 304	EA	46.17	22.54
7618	Sst ftg, threaded jt, 150 lb, type 304, reducer cnctrc, 2"	EA	71.11	31.29
7620	2-1/2"x2" SST Reducers,S40 Tp 304	EA	106.28	29.77
7621	3"x2-1/2" SST Reducers,S40 Tp 304	EA	127.67	34.94
7624	Sst ftg, threaded jt, 150 lb, type 304, reducer cnctrc, 4"	EA	212.66	33.21
7625	4"x3" SST Reducers,Sch40 Type 304	EA	190.99	41.82
15164 7710 Union				
7750	Sst ftg, threaded jt, 150 lb, type 304, union, 1/2"	EA	42.33	5.52
7760	Sst ftg, threaded jt, 150 lb, type 304, union, 3/4"	EA	50.86	5.98
7770	Sst ftg, threaded jt, 150 lb, type 304, union, 1"	EA	63.57	6.16
7772	1-1/4" SST Unions,Sch 40 Type 304	EA	74.01	4.41
7790	Sst ftg, threaded jt, 150 lb, type 304, union, 1.5"	EA	101.23	5.96
7800	Sst ftg, threaded jt, 150 lb, type 304, union, 2"	EA	127.65	6.24
15164 7838 Caps				
7839	1-1/4" SST Caps, Sch 40 Type 304	EA	23.31	8.25
7840	Sst ftg, threaded jt, 150 lb, type 304, caps, 1/2"	EA	15.72	8.74
7841	Sst ftg, threaded jt, 150 lb, type 304, caps, 3/4"	EA	18.27	10.70
7842	Sst ftg, threaded jt, 150 lb, type 304, caps, 1"	EA	22.34	11.91
7843	Sst ftg, threaded jt, 150 lb, type 304, caps, 1.5"	EA	37.83	12.42
7844	Sst ftg, threaded jt, 150 lb, type 304, caps, 2"	EA	45.74	16.14
7845	Sst ftg, threaded jt, 150 lb, type 304, caps, 4"	EA	139.66	26.40
7846	2-1/2" SST Caps, Sch 40 Type 304	EA	52.66	13.31
7847	3" SST Caps, Sch 40 Type 304	EA	70.76	15.32
15164 8000 Threaded joint, 150 lb, type 316				
15164 8000 90_ elbow				
8011	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 1/2"	EA	34.13	14.22
8012	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 3/4"	EA	37.62	19.44
8013	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 1"	EA	43.73	23.04
8014	1-1/4"SST,90 Deg Ell S40 Type316 w/150# Threaded Ftng	EA	50.25	20.04
8015	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 1.5"	EA	58.35	24.48
8016	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 2"	EA	73.63	26.54
8017	Sst ftg, threaded jt, 150 lb, type 316, 90 deg elbow, 4"	EA	306.89	44.34
8018	2-1/2"SST,90 Deg Ell S40 Type316 w/150# Threaded Ftng	EA	151.28	30.91
8019	3"SST, 90 Deg Ell S40 Type 316 w/150# Threaded Ftng	EA	198.66	35.47
15164 8020 45_ elbow, long				
8021	3" SST, 45 Deg Ell S40 Type 316 w/150# Threaded Ftng	EA	251.54	34.83
8022	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 1/2"	EA	36.01	12.78
8023	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 3/4"	EA	40.68	18.23
8024	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 1"	EA	44.82	22.17
8025	1-1/4"SST,45 Deg Ell S40 Type316 w/150# Threaded Ftng	EA	48.37	19.69
8026	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 1.5"	EA	58.56	24.06
8027	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 2"	EA	74.91	27.39
8028	Sst ftg, threaded jt, 150 lb, type 316, 45 deg elbow, 4"	EA	366.31	41.41
8029	2-1/2"SST,45Deg Ell S40 Type 316 w/150# Threaded Ftng	EA	178.90	30.49
15164 8030 Tee				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8031	2-1/2" SST Tee, S40 Type 316	EA	229.58	47.49
8032	Sst ftg, threaded jt, 150 lb, type 316, tee, 1/2"	EA	48.62	20.91
8033	Sst ftg, threaded jt, 150 lb, type 316, tee, 3/4"	EA	56.39	25.15
8034	Sst ftg, threaded jt, 150 lb, type 316, tee, 1"	EA	57.78	33.88
8035	1-1/4" SST Tee, S40 Type 316	EA	71.90	31.44
8036	Sst ftg, threaded jt, 150 lb, type 316, tee, 1.5"	EA	79.85	3.65
8037	Sst ftg, threaded jt, 150 lb, type 316, tee, 2"	EA	97.44	37.61
8038	Sst ftg, threaded jt, 150 lb, type 316, tee, 4"	EA	411.52	59.39
8039	3" SST Tee, S40 Type 316	EA	335.09	53.65
15164 8040 Reducer				
8041	1-1/4"x1"SST Reducer, S40 Type316	EA	48.94	19.09
8042	Sst ftg, threaded jt, 3/4" x 1/2", 150 lb, type 316, reducer	EA	33.71	18.35
8043	1-1/2"x1-1/4"SST Red, S40 Type316	EA	59.58	21.71
8044	Sst ftg, threaded jt, 150 lb, type 316, reducer, 1" x 3/4"	EA	41.11	19.22
8046	Sst ftg, threaded jt, 150 lb, type 316, reducer, 2" x 1.5"	EA	59.81	19.82
8047	2-1/2"x2"SST Reducer, S40 Tp 316	EA	152.86	28.59
8048	3"x2-1/2"SST Reducer, S40 Tp 316	EA	203.76	33.11
8049	4"x 3" SST Reducer, S40 Type 316	EA	291.53	40.15
15164 8060 Union				
8062	Sst ftg, threaded jt, 150 lb, type 316, union, 1/2"	EA	56.34	5.11
8063	Sst ftg, threaded jt, 150 lb, type 316, union, 3/4"	EA	68.97	5.86
8064	Sst ftg, threaded jt, 150 lb, type 316, union, 1"	EA	80.66	5.22
8065	1-1/4" SST Union, S40 Type 316	EA	107.98	4.26
8066	Sst ftg, threaded jt, 150 lb, type 316, union, 1.5"	EA	136.00	5.04
8067	Sst ftg, threaded jt, 150 lb, type 316, union, 2"	EA	168.06	5.07
8068	2-1/2" SST Flange, S40 Type 316	EA	152.09	31.56
8069	3" SST Flange, S40 Type 316	EA	180.36	35.78
15164 8080 Flange				
8088	Sst ftg, threaded jt, 150 lb, type 316, flange, 4"	EA	239.72	21.22
15164 8090 Cap				
8092	Sst ftg, threaded jt, 150 lb, type 316, cap, 1/2"	EA	11.85	4.42
8093	Sst ftg, threaded jt, 150 lb, type 316, cap, 3/4"	EA	14.05	6.46
8094	Sst ftg, threaded jt, 150 lb, type 316, cap, 1"	EA	19.10	7.79
8095	1-1/4" SST Cap, S40 Type 316	EA	32.69	7.95
8096	Sst ftg, threaded jt, 150 lb, type 316, cap, 1.5"	EA	36.94	9.58
8098	Sst ftg, threaded jt, 150 lb, type 316, cap, 2"	EA	45.36	10.97
8099	Sst ftg, threaded jt, 150 lb, type 316, cap, 4"	EA	152.32	18.53
8100	2-1/2" SST Cap, S40 Type 316	EA	73.69	12.81
8101	3" SST Cap, S40 Type 316	EA	99.80	14.75
15164 8200 Tube fittings, type 316				
15164 8204 90_ elbow				
8206	Stainless tubing, type 316, 90 deg elbow, 1/4"	EA	25.17	4.16
8207	Stainless tubing, type 316, 90 deg elbow, 3/8"	EA	29.14	4.35
8208	Stainless tubing, type 316, 90 deg elbow, 1/2"	EA	39.10	4.27
8209	Stainless tubing, type 316, 90 deg elbow, 5/8"	EA	42.82	4.77
8210	Stainless tubing, type 316, 90 deg elbow, 3/4"	EA	59.23	6.32
8211	Stainless tubing, type 316, 90 deg elbow, 7/8"	EA	83.83	7.15
8212	Stainless tubing, type 316, 90 deg elbow, 1"	EA	103.52	8.06
15164 8220 Union tee				
8222	Stainless tubing, type 316, union tee, 1/4"	EA	38.51	5.71
8224	Stainless tubing, type 316, union tee, 3/8"	EA	44.05	5.98
8225	Stainless tubing, type 316, union tee, 1/2"	EA	56.61	6.05
8226	Stainless tubing, type 316, union tee, 5/8"	EA	62.81	7.26
8227	Stainless tubing, type 316, union tee, 3/4"	EA	74.47	6.85
8228	Stainless tubing, type 316, union tee, 7/8"	EA	114.61	7.15
8229	Stainless tubing, type 316, union tee, 1"	EA	136.56	8.73
15164 8234 Union				
8236	Stainless tubing, type 316, union 1/4"	EA	21.44	5.11
8237	Stainless tubing, type 316, union, 3/8"	EA	26.43	3.67
8238	Stainless tubing, type 316, union, 1/2"	EA	32.76	3.67
8239	Stainless tubing, type 316, union, 5/8"	EA	38.40	4.08
8240	Stainless tubing, type 316, union, 3/4"	EA	44.29	4.24
8241	Stainless tubing, type 316, union, 7/8"	EA	63.91	4.54

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8242	Stainless tubing, type 316, union, 1"	EA	67.08	5.22
15164 8250	Male connector			
8252	Stainless tubing, type 316, male connector, 1/4" x 1/4"	EA	18.38	2.84
8253	Stainless tubing, type 316, male connector, 3/8" x 3/8"	EA	22.58	3.03
8254	Stainless tubing, type 316, male connector, 1/2" x 1/2"	EA	26.88	3.03
8255	5/8"x5/8"SST Male Conn, Type 316	EA	29.25	3.23
8256	Stainless tubing, type 316, male connector, 3/4" x 3/4"	EA	33.99	3.37
8257	7/8"x7/8"SST Male Conn, Type 316	EA	56.35	3.76
8258	Stainless tubing, type 316, male connector, 1" x 1"	EA	49.54	3.82
15165 2840	Gate Valves			
2841	3" SST Gate Valve, Type 316	EA	1,024.83	
2842	4" SST Gate Valve, Type 316	EA	1,467.92	
2843	6" SST Gate Valve, Type 316	EA	2,556.01	
2844	8" SST Gate Valve, Type 316	EA	4,543.82	
15165 2850	Globe Valves			
2851	3" SST Globe Valve, Type 316	EA	1,475.31	
2852	4" SST Globe Valve, Type 316	EA	1,833.50	
2853	6" SST Globe Valve, Type 316	EA	3,110.93	
15165 2860	Check Valves			
2861	3" SST Check Valve, Type 316	EA	1,122.76	
2862	4" SST Check Valve, Type 316	EA	1,735.58	
2863	6" SST Check Valve, Type 316	EA	3,045.64	
2864	8" SST Check Valve, Type 316	EA	5,327.24	
15170	Steel Pipe			
15171 2600	Rockwell Clamp And Coupling Products			
15171 2610	912 Flanged Coupling Adapter (Cast Iron)			
2611	3" CI Flanged Coupling Adapters	EA	247.60	
2612	4" CI Flanged Coupling Adapters	EA	290.80	
2613	6" CI Flanged Coupling Adapters	EA	350.97	
2614	8" CI Flanged Coupling Adapters	EA	454.33	
2615	10" CI Flanged Coupling Adapters	EA	762.78	
2616	12" CI Flanged Coupling Adapters	EA	840.04	
15171 2620	913 Flanged Coupling Adapter (Steel)			
2621	3" Stl Flanged Coupling Adapter	EA	368.09	
2622	4" Stl Flanged Coupling Adapter	EA	414.04	
2623	6" Stl Flanged Coupling Adapter	EA	522.63	
2624	8" Stl Flanged Coupling Adapter	EA	631.22	
2625	10" Stl Flanged Coupling Adapter	EA	773.22	
2626	12" Stl Flanged Coupling Adapter	EA	896.44	
2627	14" Stl Flanged Coupling Adapter	EA	1,073.92	
2628	16" Stl Flanged Coupling Adapter	EA	1,284.84	
15171 2630	441 Omni Cast Coupling (Straight & Transition)			
2631	2" Omni Cast Couplings	EA	111.30	
2632	3" Omni Cast Couplings	EA	146.28	
2633	4" Omni Cast Couplings	EA	163.13	
2634	6" Omni Cast Couplings	EA	202.15	
2635	8" Omni Cast Couplings	EA	241.35	
2636	10" Omni Cast Couplings	EA	311.99	
2637	12" Omni Cast Couplings	EA	364.06	
2638	14" Omni Cast Couplings	EA	580.11	
2639	16" Omni Cast Couplings	EA	687.62	
15171 2640	226 Full Circle Clamp Coupling (Single Bend) 10"			
2641	3" Full Circle Clamp Coupling	EA	186.91	
2642	4" Full Circle Clamp Coupling	EA	200.49	
2643	6" Full Circle Clamp Coupling	EA	226.60	
2644	8" Full Circle Clamp Coupling	EA	245.33	
2645	10" Full Circle Clamp Coupling	EA	297.44	
2646	12" Full Circle Clamp Coupling	EA	321.08	
2647	14" Full Circle Clamp Coupling	EA	338.80	
15171 3000	Pipe, Steel, Threaded, Sch 80 Black			
3001	Pipe, Iron, Threaded, Sch 80 Black - 2" Dia	LF	14.15	
3002	Pipe, Iron, Threaded, Sch 80 Black - 4" Dia	LF	19.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3003	Pipe, Iron, Threaded, Sch 80 Black - 5" Dia	LF	38.77	
15171 4000	Carbon Steel Pipe and Fittings, Sch 80, Welded			
4009	4" Carbon Steel Sch 80 Pipe, A-5 3	LF	30.18	
4012	6" Carbon Steel Sch 80 Pipe, A-5 3	LF	42.56	
4039	4" Carbon Steel 90 Degree Elbow, Sch 80	EA	97.39	
4042	6" Carbon Steel 90 Degree Elbow, Sch 80	EA	171.62	
4079	4" Carbon Steel Tee, Sch 80	EA	169.15	
4082	6" Carbon Steel Tee, Sch 80	EA	265.36	
15171 5000	Grooved End A53 Carbon Steel Pipe			
15171 5100	Grooved End A53 CS Pipe			
5111	2" Grooved End Pipe, Sch 40	LF	6.94	
5112	2-1/2" Grooved End Pipe, Sch 40	LF	8.23	
5113	3" Grooved End Pipe, Sch 40	LF	10.51	
5114	4" Grooved End Pipe, Sch 40	LF	13.86	
5115	6" Grooved End Pipe, Sch 40	LF	22.50	
5116	8" Grooved End Pipe, Sch 40	LF	31.36	
5117	10" Grooved End Pipe, Sch 40	LF	43.01	
5118	12" Grooved End Pipe, Sch 40	LF	51.89	
15171 5200	Couplings, Grooved End			
5211	Couplings, 1000# Psi, 2" Grooved End	EA	34.21	
5212	Couplings, 1000# Psi, 2-1/2" Grooved End	EA	41.06	
5213	Couplings, 1000# Psi, 3" Grooved End	EA	46.70	
5214	Couplings, 1000# Psi, 4" Grooved End	EA	67.32	
5215	Couplings, 1000# Psi, 6" Grooved End	EA	106.97	
5216	Couplings, 800# Psi, 8" Grooved End	EA	171.75	
5217	Couplings, 800# Psi, 10" Grooved End	EA	232.29	
5218	Couplings, 800# Psi, 12" Grooved End	EA	272.15	
15171 5300	90 Degree Elbows			
5311	2" 90 Degree Elbow Grooved End, 1000# Psi	EA	76.07	
5312	2-1/2" 90 Degree Elbow Grooved End, 1000# Psi	EA	91.31	
5313	3" 90 Degree Elbow Grooved End, 1000# Psi	EA	105.45	
5314	4" 90 Degree Elbow Grooved End, 1000# Psi	EA	155.45	
5315	6" 90 Degree Elbow Grooved End, 1000# Psi	EA	299.65	
5316	8" 90 Degree Elbow Grooved End, 800# Psi	EA	535.75	
5317	10" 90 Degree Elbow Grooved End, 800# Psi	EA	767.98	
5318	12" 90 Degree Elbow Grooved End, 800# Psi	EA	1,058.26	
5319	Pipe Couplings, Tapecoat, 6"	EA	15.63	
5321	Pipe Fittings, Tapecoat, 6"	EA	36.63	
5322	Pipe Couplings, Tapecoat, 8"	EA	15.63	
5323	Pipe Fittings, Tapecoat, 8"	EA	36.63	
5324	Pipe Couplings, Tapecoat, 10"	EA	18.61	
5325	Pipe Fittings, Tapecoat, 10"	EA	43.18	
5326	Pipe Couplings, Tapecoat, 12"	EA	20.72	
5327	Pipe Fittings, Tapecoat, 12"	EA	50.31	
15171 5400	Tees			
5411	2" Tee Grooved End, 1000# Psi	EA	115.02	
5412	2-1/2" Tee Grooved End, 1000# Psi	EA	139.66	
5413	3" Tee Grooved End, 1000# Psi	EA	161.81	
5414	4" Tee Grooved End, 1000# Psi	EA	239.41	
5415	6" Tee Grooved End, 1000# Psi	EA	465.39	
5416	8" Tee Grooved End, 1000# Psi	EA	849.82	
5417	10" Tee Grooved End, 1000# Psi	EA	1,313.99	
5418	12" Tee Grooved End, 1000# Psi	EA	1,700.34	
15171 5500	Flanges			
5511	2" Flange Grooved End Pipe, 250# Psi	EA	75.00	
5512	2-1/2" Flange Grooved End Pipe, 250# Psi	EA	93.48	
5513	3" Flange Grooved End Pipe, 250# Psi	EA	103.03	
5514	4" Flange Grooved End Pipe, 250# Psi	EA	138.13	
5515	6" Flange Grooved End Pipe, 250# Psi	EA	178.23	
5516	8" Flange/Grooved End Pipe, 250# Psi	EA	221.53	
5517	10" Flange Grooved End Pipe, 250 # Psi	EA	327.55	
5518	12" Flange Grooved End Pipe, 250 # Psi	EA	334.10	
15171 5600	Grooved Outlet Couplings			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5611	Black Malleable Iron, 500# Psi, 2" X 1"	EA	64.22	
5612	Black Malleable Iron, 500# Psi, 2-1/2"X1-1/2"	EA	105.18	
5613	Black Malleable Iron, 500# Psi, 3" X 1"	EA	102.14	
5614	Black Malleable Iron, 500# Psi, 3" X 1-1/2"	EA	110.58	
5615	Black Malleable Iron, 500# Psi, 4" X 1"	EA	116.90	
5616	Black Malleable Iron, 500# Psi, 4" X 2"	EA	160.26	
5617	Black Malleable Iron, 400# Psi, 6" X 2"	EA	212.05	
5618	Grooved End, 1000# Psi, 12"	EA	1,651.57	
15171 5700 Flanges				
5711	Flgs/Grooved End Pipe,250# Psi, 2"	EA	72.41	
5712	Flgs/Grooved End Pipe,250# Psi, 2-1/2"	EA	90.23	
5713	Flgs/Grooved End Pipe,250# Psi, 3"	EA	99.13	
5714	Flgs/Grooved End Pipe,250# Psi, 4"	EA	132.92	
5715	Flgs/Grooved End Pipe,250# Psi, 6"	EA	171.08	
5716	Flgs/Grooved End Pipe,250# Psi, 8"	EA	209.81	
5717	Flgs/Grooved End Pipe,250# Psi, 10"	EA	313.24	
5718	Flgs/Grooved End Pipe,250# Psi, 12"	EA	404.67	
15171 5800 Grooved Outlet Couplings				
5811	Black Malleable Iron, 500# Psi, 2" X 1"	EA	59.66	
5812	Black Malleable Iron, 500# Psi, 2-1/2"X1-1/2"	EA	98.03	
5813	Black Malleable Iron, 500# Psi, 3" X 1"	EA	96.30	
5814	Black Malleable Iron, 500# Psi, 3" X 1-1/2"	EA	104.08	
5815	Black Malleable Iron, 500# Psi, 4" X 1"	EA	109.10	
5816	Black Malleable Iron, 500# Psi, 4" X 2"	EA	150.51	
5817	Black Malleable Iron, 400# Psi, 6" X 2"	EA	199.68	
15171 5900 Butterfly Valves				
5911	But. Fly Valve, WStd Hand.200# Ps i, 2"	EA	262.45	
5912	But. Fly Valve, WStd Hand.200# Ps i, 2-1/2"	EA	320.65	
5913	But. Fly Valve, WStd Hand.200# Ps i, 3"	EA	341.29	
5914	But. Fly Valve, WStd Hand.200# Ps i, 4"	EA	428.45	
5915	But. Fly Valve, WStd Hand.200# Ps i, 6"	EA	784.76	
5916	But. Fly Valve, WMan Gear.200# Ps i, 8"	EA	1,380.14	
5917	But. Fly Valve, WMan Gear.200# Ps i, 10"	EA	1,929.68	
5918	But. Fly Valve, WMan Gear.200# Ps i, 12"	EA	2,183.41	
15171 6000 Steel Fittings, 3000#				
15171 6100 Steel Fittings, 3000#				
15171 6110 90 Degree Ell MI. Black				
6111	1/2" 90 Deg Ell, M Black	EA	15.06	
6112	3/4" 90 Deg Ell, M Black	EA	16.97	
6113	1" 90 Degree Ell, M Black	EA	23.05	
6114	1-1/4" 90 Deg Ell, M Black	EA	33.71	
6115	1-1/2" 90 Deg Ell, M Black	EA	38.71	
6116	2" 90 Degree ELL, M Black	EA	53.65	
6117	2-1/2" 90 Deg Ell, M Black	EA	114.42	
6118	3" 90 Degree Ell, M Black	EA	165.44	
6119	4" 90 Degree Ell, M Black	EA	310.32	
15171 6120 45 Degree Ell MI. Black				
6121	1/2" 45 Deg Ell, 150# M Black	EA	17.24	
6122	3/4" 45 Deg Ell, 150# M Black	EA	20.27	
6123	1" 45 Degree Ell, 150# M Black	EA	24.07	
6124	1-1/4" 45 Deg Ell,150# M Black	EA	34.99	
6125	1-1/2" 45 Deg Ell,150# M Black	EA	41.78	
6126	2" 45 Degree Ell,150# M Black	EA	53.59	
6127	2-1/2" 45 Deg Ell,150# M Black	EA	133.20	
6128	3" 45 Degree Ell,150# M Black	EA	181.31	
6129	4" 45 Degree Ell,150# M Black	EA	303.45	
15171 6130 Tees, Straight MI. Black				
6131	1/2" Tee, Straight 150# M Black	EA	18.27	
6132	3/4" Tee, Straight 150# M Black	EA	22.71	
6133	1" Tee, Straight 150# M Black	EA	31.59	
6134	1-1/4" Tee, Strt 150# M Black	EA	43.89	
6135	1-1/2" Tee, Strt 150# M Black	EA	53.46	
6136	2" Tee, Straight 150# M Black	EA	72.42	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6137	2-1/2" Tee, Strt 150# M Black	EA	141.19	
6138	3" Tee, Straight 150# M Black	EA	199.44	
6139	4" Tee, Straight 150# M Black	EA	412.51	
15171 6140	Tees, Red. Out MI. Black			
6141	1/2" Tee, Red Out 150# M Black	EA	18.86	
6142	3/4" Tee, Red Out 150# M Black	EA	23.32	
6143	1" Tee, Red Out 150# M Black	EA	32.33	
6144	1-1/4" Tee, Red Out 150# M Black	EA	45.63	
6145	1-1/2" Tee, Red Out 150# M Black	EA	55.51	
6146	2" Tee, Red Out 150# M Black	EA	75.57	
6147	2-1/2" Tee, Red Out 150# M Black	EA	148.66	
6148	3" Tee, Red Out 150# M Black	EA	210.18	
6149	4" Tee, Red Out 150# M Black	EA	374.27	
15171 6150	Couplings, St. MI. Black			
6151	1/2" Coupling, Strt 150# M Black	EA	12.38	
6152	3/4" Coupling, Strt 150# M Black	EA	14.01	
6153	1" Coupling, Strt 150# M Black	EA	16.76	
6154	1-1/4" Cplg, Strt 150# M Black	EA	19.49	
6155	1-1/2" Cplg, Strt 150# M Black	EA	23.11	
6156	2" Coupling, Strt 150# M Black	EA	30.67	
6157	2-1/2" Cplg, Strt 150# M Black	EA	55.89	
6158	3" Coupling, Strt 150# M Black	EA	75.16	
6159	4" Coupling, Strt 150# M Black	EA	114.09	
15171 6160	Couplings, Red MI. Black			
6161	1/2" Cplg, Red 150# M Black	EA	13.60	
6162	3/4" Cplg, Red 150# M Black	EA	15.34	
6163	1" Cplg, Red 150# M Black	EA	18.88	
6164	1-1/4" Cplg, Red 150# M Black	EA	22.06	
6165	1-1/2" Cplg, Red 150# M Black	EA	26.92	
6166	2" Coupling, Red 150# M Black	EA	34.75	
6167	2-1/2" Cplg, Red 150# M Black	EA	64.87	
6168	3" Coupling, Red 150# M Black	EA	93.23	
6169	4" Coupling, Red 150# M Black	EA	151.66	
15171 6170	Caps, MI. Black			
6171	1/2" Cap, 150# M Black	EA	8.31	
6172	3/4" Cap, 150# M Black	EA	9.73	
6173	1" Cap, 150# M Black	EA	11.49	
6174	1-1/4" Cap, 150# M Black	EA	13.70	
6175	1-1/2" Cap, 150# M Black	EA	16.40	
6176	2" Cap, 150# M Black	EA	21.31	
6177	2-1/2" Cap, 150# M Black	EA	41.09	
6178	3" Cap, 150# M Black	EA	61.02	
6179	4" Cap, 150# M Black	EA	91.11	
15171 6180	Square Head Plug, Black (C.I.)			
6181	1/2" Square Head Plug, Black CI	EA	5.25	
6182	3/4" Square Head Plug, Black CI	EA	6.40	
6183	1" Square Head Plug, Black CI	EA	8.96	
6184	1-1/4" Sq Head Plug, Black CI	EA	8.50	
6185	1-1/2" Sq Head Plug, Black CI	EA	9.47	
6186	2" Square Head Plug, Black CI	EA	12.49	
6187	2-1/2" Sq Head Plug, Black CI	EA	16.40	
6188	3" Square Head Plug, Black CI	EA	22.32	
6189	4" Square Head Plug, Black CI	EA	26.88	
15171 6190	Unions, MI. Black			
6191	1/2" Union, 150# M Black	EA	25.29	
6192	3/4" Union, 150# M Black	EA	27.57	
6193	1" Union, 150# M Black	EA	36.20	
6194	1-1/4" Union, 150# M Black	EA	46.68	
6195	1-1/2" Union, 150# M Black	EA	56.41	
6196	2" Union, 150# M Black	EA	70.71	
6197	2-1/2" Union, 150# M Black	EA	136.26	
6198	3" Union, 150# M Black	EA	186.32	
15171 7000	Steel Fittings, 6000#			
15171 7100	Steel Fittings, 6000#			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15171 7110 90	Degree Ell MI. Black			
7111	1/2" 90 Deg Ell, M Black	EA	17.69	
7112	3/4" 90 Deg Ell, M Black	EA	19.97	
7113	1" 90 Degree Ell, M Black	EA	28.58	
7114	1-1/4" 90 Deg Ell, M Black	EA	44.00	
7115	1-1/2" 90 Deg Ell, M Black	EA	50.69	
7116	2" 90 Degree ELL, M Black	EA	71.25	
7117	2-1/2" 90 Deg Ell, M Black	EA	159.06	
7118	3" 90 Degree Ell, M Black	EA	232.06	
7119	4" 90 Degree Ell, M Black	EA	451.82	
15171 7120 45	Degree Ell MI. Black			
7121	1/2" 45 Deg Ell, 150# M Black	EA	21.26	
7122	3/4" 45 Deg Ell, 150# M Black	EA	25.32	
7123	1" 45 Degree Ell, 150# M Black	EA	30.53	
7124	1-1/4" 45 Deg Ell, 150# M Black	EA	46.70	
7125	1-1/2" 45 Deg Ell, 150# M Black	EA	56.29	
7126	2" 45 Degree Ell, 150# M Black	EA	72.31	
7127	2-1/2" 45 Deg Ell, 150# M Black	EA	191.42	
7128	3" 45 Degree Ell, 150# M Black	EA	261.34	
7129	4" 45 Degree Ell, 150# M Black	EA	450.39	
15171 7130 Tees, Straight MI. Black				
7131	1/2" Tee, Straight 150# M Black	EA	23.45	
7132	3/4" Tee, Straight 150# M Black	EA	30.20	
7133	1" Tee, Straight 150# M Black	EA	44.86	
7134	1-1/4" Tee, Strt 150# M Black	EA	65.52	
7135	1-1/2" Tee, Strt 150# M Black	EA	80.28	
7136	2" Tee, Straight 150# M Black	EA	111.36	
7137	2-1/2" Tee, Strt 150# M Black	EA	234.92	
7138	3" Tee, Straight 150# M Black	EA	340.20	
7139	4" Tee, Straight 150# M Black	EA	743.19	
15171 7140 Tees, Red. Out MI. Black				
7141	1/2" Tee, Red Out 150# M Black	EA	18.86	
7142	3/4" Tee, Red Out 150# M Black	EA	23.32	
7143	1" Tee, Red Out 150# M Black	EA	32.33	
7144	1-1/4" Tee, Red Out 150# M Black	EA	45.63	
7145	1-1/2" Tee, Red Out 150# M Black	EA	55.51	
7146	2" Tee, Red Out 150# M Black	EA	75.57	
7147	2-1/2" Tee, Red Out 150# M Black	EA	148.66	
7148	3" Tee, Red Out 150# M Black	EA	210.18	
7149	4" Tee, Red Out 150# M Black	EA	374.27	
15171 7150 Couplings, St. MI. Black				
7151	1/2" Coupling, Strt 150# M Black	EA	13.48	
7152	3/4" Coupling, Strt 150# M Black	EA	15.30	
7153	1" Coupling, Strt 150# M Black	EA	18.73	
7154	1-1/4" Cplg, Strt 150# M Black	EA	21.99	
7155	1-1/2" Cplg, Strt 150# M Black	EA	26.45	
7156	2" Coupling, Strt 150# M Black	EA	35.58	
7157	2-1/2" Cplg, Strt 150# M Black	EA	68.22	
7158	3" Coupling, Strt 150# M Black	EA	92.16	
7159	4" Coupling, Strt 150# M Black	EA	148.02	
15171 7160 Couplings, Red MI. Black				
7161	1/2" Cplg, Red 150# M Black	EA	15.26	
7162	3/4" Cplg, Red 150# M Black	EA	17.26	
7163	1" Cplg, Red 150# M Black	EA	21.87	
7164	1-1/4" Cplg, Red 150# M Black	EA	25.77	
7165	1-1/2" Cplg, Red 150# M Black	EA	32.08	
7166	2" Coupling, Red 150# M Black	EA	41.58	
7167	2-1/2" Cplg, Red 150# M Black	EA	81.43	
7168	3" Coupling, Red 150# M Black	EA	118.79	
7169	4" Coupling, Red 150# M Black	EA	203.37	
15171 7170 Caps, MI. Black				
7171	1/2" Cap, 150# M Black	EA	10.71	
7172	3/4" Cap, 150# M Black	EA	12.86	
7173	1" Cap, 150# M Black	EA	15.28	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7174	1-1/4" Cap, 150# M Black	EA	18.65	
7175	1-1/2" Cap, 150# M Black	EA	23.17	
7176	2" Cap, 150# M Black	EA	30.13	
7177	2-1/2" Cap, 150# M Black	EA	61.86	
7178	3" Cap, 150# M Black	EA	93.75	
7179	4" Cap, 150# M Black	EA	142.14	
15171 7180	Square Head Plug, Black (C.I.)			
7181	1/2" Square Head Plug, Black CI	EA	5.25	
7182	3/4" Square Head Plug, Black CI	EA	6.41	
7183	1" Square Head Plug, Black CI	EA	8.97	
7184	1-1/4" Sq Head Plug, Black CI	EA	8.52	
7185	1-1/2" Sq Head Plug, Black CI	EA	9.48	
7186	2" Square Head Plug, Black CI	EA	12.52	
7187	2-1/2" Sq Head Plug, Black CI	EA	16.44	
7188	3" Square Head Plug, Black CI	EA	22.37	
7189	4" Square Head Plug, Black CI	EA	26.94	
15171 7190	Unions, MI. Black			
7191	1/2" Union, 150# M Black	EA	33.01	
7192	3/4" Union, 150# M Black	EA	35.50	
7193	1" Union, 150# M Black	EA	47.79	
7194	1-1/4" Union, 150# M Black	EA	62.66	
7195	1-1/2" Union, 150# M Black	EA	75.91	
7196	2" Union, 150# M Black	EA	95.36	
7197	2-1/2" Union, 150# M Black	EA	199.40	
7198	3" Union, 150# M Black	EA	275.80	
15172 0010	Steel pipe			
15172 0020	Schedule 40, threaded, no fittings or hangers			
15172 0539	Black			
0540	Pipe, steel, no coupling/hanger, 1/4" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	2.80 0.48	1.21
0542	1/2"(12mm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	2.78 0.42	1.33
0570	Pipe, steel, no coupling/hanger, 3/4" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	3.08 0.49	1.51
0580	Pipe, steel, no coupling/hanger, 1" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	3.71 0.61	1.55
0582	1-1/4" (32mm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	4.05 0.81	1.50
0584	1-1/2" (40mm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	4.78 0.96	1.50
0610	Pipe, steel, no coupling/hanger, 2" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	7.35 1.30	3.47
0612	2-1/2" (60mm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	8.18 1.97	2.90
0614	3" (80mm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	10.84 2.60	2.91
0650	Pipe, steel, no coupling/hanger, 4" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	15.75 3.54	2.98
0652	5" (12.5cm) A-53 Pipe, Sch 40 Not Incl Hangers or Fittings 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	19.30 5.24	3.22
0670	Pipe, steel, no coupling/hanger, 6" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	31.58 7.76	6.89
0680	Pipe, steel, no coupling/hanger, 8" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	40.90 11.15	7.43
0690	Pipe, steel, no coupling/hanger, 10" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	55.45 16.25	8.27
0700	Pipe, steel, no coupling/hanger, 12" dia, sched 40, black, 0800 Pipe, steel, sch 40, black threaded, for schedule 80 pipe, add	LF	69.57 21.36	9.25
15172 1280	Galvanized Threaded & Coupled Sched 40			
15172 1289	Galvanized T & C Sch 40			
Note: Price Does Not Include Hangers Or Fittings				
1290	Pipe, steel, 1/4" dia, sched 40, galv, threaded, no 1490 Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add	LF	3.35 0.64	1.59
1310	1/2" (12mm) Galv Steel Pipe ASTM A-53, T&C, Sch 40 1490 Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add	LF	3.04 0.54	1.50

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1320	Pipe, steel, 3/4" dia, sched 40, galv, threaded, no	LF	3.74	1.63
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		0.64	
1330	Pipe, steel, 1" dia, sched 40, galv, threaded, no	LF	4.10	1.47
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		0.69	
1332	1-1/4" (32mm) Galv Steel Pipe ASTM A-53, T&C, Sch 40	LF	4.65	1.47
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		1.08	
1350	Pipe, steel, 1.5" dia, sched 40, galv, threaded, no	LF	6.54	1.67
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		1.39	
1360	Pipe, steel, 2" dia, sched 40, galv, threaded, no	LF	8.11	3.20
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		1.47	
1362	2-1/2" (60mm) Galv Steel Pipe ASTM A-53, T&C, Sch 40	LF	9.61	2.84
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		2.62	
1364	3" (80mm) Galv Steel Pipe ASTM A-53, T&C, Sch 40	LF	12.69	2.84
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		3.43	
1400	Pipe, steel, 4" dia, sched 40, galv, threaded, no	LF	17.16	3.87
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		4.00	
1402	5" (12.5cm) Galv Steel Pipe ASTM A-53, T&C, Sch 40	LF	22.94	3.56
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		6.88	
1420	Pipe, steel, 6" dia, sched 40, galv, threaded, no	LF	37.17	7.11
1490	<i>Pipe, steel, sch 40, galv threaded, for schedule 80 pipe, add</i>		9.90	
15172 2038 Plain end				
15172 2039 Black				
2040	Pipe, steel, 1" dia, sched 40, black, PE, no coupling/hanger	LF	3.67	1.74
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		0.95	
2042	1-1/4" Black Pipe, PE Sch40 A53	LF	7.78	4.12
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		1.53	
2044	1-1/2" Black Pipe, PE Sch40 A53	LF	8.07	3.94
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		1.76	
2046	2" Black Pipe, PE Sch40 A53	LF	8.71	3.83
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		2.27	
2088	2-1/2" (60mm) Black Pipe, PE Sch40 A53	LF	9.89	3.76
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		3.22	
2090	Pipe, steel, 3" dia, sched 40, black, PE, no coupling/hanger	LF	12.57	4.76
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		4.06	
2110	Pipe, steel, 4" dia, sched 40, black, PE, no coupling/hanger	LF	15.38	5.89
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		5.65	
2120	Pipe, steel, 5" dia, sched 40, black, PE, no coupling/hanger	LF	22.60	7.38
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		9.73	
2130	Pipe, steel, 6" dia, sched 40, black, PE, no coupling/hanger	LF	30.99	11.06
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		12.70	
2140	Pipe, steel, 8" dia, sched 40, black, PE, no coupling/hanger	LF	40.03	14.07
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		18.43	
2150	Pipe, steel, 10" dia, sched 40, black, PE, no coupling/hanger	LF	54.16	16.65
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		27.01	
2160	Pipe, steel, 12" dia, sched 40, black, PE, no coupling/hanger	LF	67.85	16.57
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		35.64	
2162	14" (36cm) Black Pipe, PE Sch40 A53	LF	59.52	16.59
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		25.93	
2164	16" (41cm) Black Pipe, PE Sch40 A53	LF	72.27	21.09
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		30.31	
2170	Pipe, steel, 18" dia, sched 40, black, PE, no coupling/hanger	LF	80.24	17.41
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		42.43	
2172	20" (51cm) Black Pipe, PE Sch40 A53	LF	100.81	32.54
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		38.57	
2180	Pipe, steel, 24" dia, sched 40, black, PE, no coupling/hanger	LF	107.95	20.01
2190	<i>Pipe, steel, sch 40, black PE, for schedule 80 pipe, add</i>		61.26	
15174 0010 Pipe, steel, fittings, threaded				
15174 0020 Cast iron, standard weight, black				
15174 0060 90 degree elbow, straight				
0070	Steel ftg, std. wt. CI, black 90 deg elb, straight 1/4" dia.	EA	20.23	15.32
0080	Steel ftg, std. wt. CI, black 90 deg elb, straight 3/8" dia.	EA	21.46	15.32
0090	Steel ftg, std. wt. CI, black 90 deg elb, straight 1/2" dia.	EA	20.26	16.34
0100	Steel ftg, std. wt. CI, black 90 deg elb, straight 3/4" dia.	EA	21.66	17.70
0110	Steel ftg, std. wt. CI, black 90 deg elb, straight 1" dia.	EA	23.66	18.64
0120	Steel ftg, std. wt. CI, black 90 deg elb, straight 1-1/4" dia.	EA	26.30	19.76
0130	Steel ftg, std. wt. CI, black 90 deg elb, straight 1-1/2" dia.	EA	30.42	22.21

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0140	Steel ftg. std. wt. CI, black 90 deg elb, straight 2" dia.	EA	35.94	24.12
0150	Steel ftg. std. wt. CI, black 90 deg elb, straight 2-1/2" dia.	EA	53.76	30.44
0160	Steel ftg. std. wt. CI, black 90 deg elb, straight 3" dia.	EA	79.25	41.83
0170	Steel ftg. std. wt. CI, black 90 deg elb, straight 3-1/2" dia.	EA	121.42	52.41
0180	Steel ftg. std. wt. CI, black 90 deg elb, straight 4" dia.	EA	136.23	65.57
0190	Steel ftg. std. wt. CI, black 90 deg elb, straight 5" dia.	EA	203.21	78.59
0200	Steel ftg. std. wt. CI, black 90 deg elb, straight 6" dia.	EA	241.25	83.22
0210	Steel ftg. std. wt. CI, black 90 deg elb, straight 8" dia.	EA	399.16	97.36
15174 0250 45 degree elbow, straight				
0260	Steel ftg. std. wt. CI, black 45 deg elb, straight 1/4" dia.	EA	20.37	15.32
0270	Steel ftg. std. wt. CI, black 45 deg elb, straight 3/8" dia.	EA	20.60	15.32
0280	Steel ftg. std. wt. CI, black 45 deg elb, straight 1/2" dia.	EA	21.30	16.34
0300	Steel ftg. std. wt. CI, black 45 deg elb, straight 3/4" dia.	EA	22.62	17.70
0320	Steel ftg. std. wt. CI, black 45 deg elb, straight 1" dia.	EA	24.66	18.64
0330	Steel ftg. std. wt. CI, black 45 deg elb, straight 1-1/4" dia.	EA	27.01	19.40
0340	Steel ftg. std. wt. CI, black 45 deg elb, straight 1-1/2" dia.	EA	33.34	22.21
0350	Steel ftg. std. wt. CI, black 45 deg elb, straight 2" dia.	EA	37.29	24.13
0360	Steel ftg. std. wt. CI, black 45 deg elb, straight 2-1/2" dia.	EA	59.19	30.44
0370	Steel ftg. std. wt. CI, black 45 deg elb, straight 3" dia.	EA	87.74	41.83
0380	Steel ftg. std. wt. CI, black 45 deg elb, straight 3-1/2" dia.	EA	138.96	52.41
0400	Steel ftg. std. wt. CI, black 45 deg elb, straight 4" dia.	EA	160.01	65.57
0420	Steel ftg. std. wt. CI, black 45 deg elb, straight 5" dia.	EA	227.54	78.59
0440	Steel ftg. std. wt. CI, black 45 deg elb, straight 6" dia.	EA	274.07	83.22
0460	Steel ftg. std. wt. CI, black 45 deg elb, straight 8" dia.	EA	442.17	97.36
15174 0500 Tee, Straight				
0510	Steel ftg. std. wt. CI, blk Tee, straight 1/4" dia.	EA	31.89	24.84
0520	Steel ftg. std. wt. CI, blk Tee, straight 3/8 dia.	EA	32.23	24.85
0530	Steel ftg. std. wt. CI, blk Tee, straight 1/2" dia.	EA	33.45	27.23
0540	Steel ftg. std. wt. CI, blk Tee, straight 3/4" dia.	EA	34.00	27.23
0550	Steel ftg. std. wt. CI, blk Tee, straight 1" dia.	EA	37.49	29.95
0560	Steel ftg. std. wt. CI, blk Tee, straight 1-1/4" dia.	EA	41.36	30.60
0570	Steel ftg. std. wt. CI, blk Tee, straight 1-1/2" dia.	EA	46.63	33.63
0580	Steel ftg. std. wt. CI, blk Tee, straight 2" dia.	EA	56.77	39.21
0590	Steel ftg. std. wt. CI, blk Tee, straight 2-1/2" dia.	EA	83.09	47.65
0600	Steel ftg. std. wt. CI, blk Tee, straight 3" dia.	EA	126.05	71.46
0610	Steel ftg. std. wt. CI, blk Tee, straight 3-1/2" dia.	EA	181.14	83.63
0620	Steel ftg. std. wt. CI, blk Tee, straight 4" dia.	EA	206.60	104.84
0630	Steel ftg. std. wt. CI, blk Tee, straight 5" dia.	EA	327.94	131.45
0640	Steel ftg. std. wt. CI, blk Tee, straight 6" dia.	EA	375.79	146.02
0650	Steel ftg. std. wt. CI, blk Tee, straight 8" dia.	EA	655.69	194.72
15174 0660 Tee, reducing run and outlet				
0661	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 1/2" dia.	EA	36.58	27.23
0662	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 3/4" dia.	EA	36.00	27.23
0663	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 1" dia.	EA	40.04	30.63
0664	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 1-1/4" dia	EA	41.93	32.25
0665	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 1-1/2" dia	EA	49.29	34.02
0666	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 2" dia.	EA	62.14	40.13
0667	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 2-1/2" dia	EA	86.49	48.79
0668	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 3" dia.	EA	136.23	71.46
0669	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 3-1/2" dia	EA	196.98	85.65
0670	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 4" dia.	EA	222.44	104.84
0671	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 5" dia.	EA	295.11	139.86
0672	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 6" dia.	EA	425.59	151.89
0673	Steel ftg. std. wt. CI, blk Tee, reduc run and outlet 8" dia.	EA	678.33	202.51
15174 0674 Reducer, concentric				
0675	Steel ftg. std. wt. CI, blk Tee, reducer concentric 3/4" dia.	EA	20.14	13.61
0676	Steel ftg. std. wt. CI, blk, reducer concentric 1" dia.	EA	22.05	16.34
0677	Steel ftg. std. wt. CI, blk, reducer concentric 1-1/4" dia.	EA	28.74	17.02
0678	Steel ftg. std. wt. CI, blk, reducer concentric 1-1/2" dia.	EA	34.74	18.84
0679	Steel ftg. std. wt. CI, blk, reducer concentric 2" dia.	EA	41.75	20.90
0680	Steel ftg. std. wt. CI, blk, reducer concentric 2-1/2" dia.	EA	53.71	24.69
0681	Steel ftg. std. wt. CI, blk, reducer concentric 3" dia.	EA	69.94	31.18
0682	Steel ftg. std. wt. CI, blk, reducer concentric 3-1/2" dia.	EA	101.50	35.90
0683	Steel ftg. std. wt. CI, blk, reducer concentric 4" dia.	EA	109.81	42.82

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0684	Steel ftg. std. wt. CI, blk, reducer concentric 5" dia.	EA	178.11	69.79
0685	Steel ftg. std. wt. CI, blk, reducer concentric 6" dia.	EA	204.86	80.64
0686	Steel ftg. std. wt. CI, blk, reducer concentric 8" dia.	EA	218.61	86.55
15174 0687	Reducer, eccentric			
0688	Steel ftg. std. wt. CI, blk, reducer eccentric 3/4" dia.	EA	27.91	15.32
0689	Steel ftg. std. wt. CI, blk, reducer eccentric 1" dia.	EA	30.69	17.70
0690	Steel ftg. std. wt. CI, blk, reducer eccentric 1-1/4" dia	EA	36.29	17.70
0691	Steel ftg. std. wt. CI, blk, reducer eccentric 1-1/2" dia	EA	46.47	20.43
0692	Steel ftg. std. wt. CI, blk, reducer eccentric 2" dia.	EA	58.29	22.67
0693	Steel ftg. std. wt. CI, blk, reducer eccentric 2-1/2" dia	EA	75.70	27.46
0694	Steel ftg. std. wt. CI, blk, reducer eccentric 3" dia.	EA	96.97	36.72
0695	Steel ftg. std. wt. CI, blk, reducer eccentric 3-1/2" dia.	EA	157.35	43.82
0696	Steel ftg. std. wt. CI, blk, reducer eccentric 4" dia.	EA	162.89	47.65
0697	Steel ftg. std. wt. CI, blk, reducer eccentric 5" dia.	EA	232.07	85.65
0698	Steel ftg. std. wt. CI, blk, reducer eccentric 6" dia.	EA	276.17	80.64
0699	Steel ftg. std. wt. CI, blk, reducer eccentric 8" dia.	EA	784.52	86.55
15174 0700	Standard weight, galvanize cast iron, fittings			
15174 0720	90 degree elbow, straight			
0730	Steel ftg. std. wt. CI, galv 90 deg elb straight 1/4" dia.	EA	21.31	15.32
0740	Steel ftg. std. wt. CI, galv 90 deg elb straight 3/8" dia.	EA	21.31	15.31
0750	Steel ftg. std. wt. CI, galv 90 deg elb straight 1/2" dia.	EA	23.94	16.34
0760	Steel ftg. std. wt. CI, galv 90 deg elb straight 3/4" dia.	EA	25.43	17.70
0770	Steel ftg. std. wt. CI, galv 90 deg elb straight 1" dia.	EA	27.97	18.64
0780	Steel ftg. std. wt. CI, galv 90 deg elb straight 1-1/4" dia.	EA	32.73	19.40
0790	Steel ftg. std. wt. CI, galv 90 deg elb straight 1-1/2" dia.	EA	39.84	22.21
0800	Steel ftg. std. wt. CI, galv 90 deg elb straight 2" dia.	EA	49.69	24.12
0810	Steel ftg. std. wt. CI, galv 90 deg elb straight 2-1/2" dia.	EA	82.39	30.44
0820	Steel ftg. std. wt. CI, galv 90 deg elb straight 3" dia.	EA	121.13	41.83
0830	Steel ftg. std. wt. CI, galv 90 deg elb straight 3-1/2" dia.	EA	175.75	52.41
0840	Steel ftg. std. wt. CI, galv 90 deg elb straight 4" dia.	EA	212.06	65.61
0850	Steel ftg. std. wt. CI, galv 90 deg elb straight 5" dia.	EA	228.67	78.59
0860	Steel ftg. std. wt. CI, galv 90 deg elb straight 6" dia.	EA	395.17	83.22
0870	Steel ftg. std. wt. CI, galv 90 deg elb straight 8" dia.	EA	712.67	97.36
15174 0900	45 degree elbow, straight			
0910	Steel ftg. std. wt. CI, galv 45 deg elb straight 1/4" dia.	EA	22.68	15.32
0920	Steel ftg. std. wt. CI, galv 45 deg elb straight 3/8 dia.	EA	22.68	15.31
0930	Steel ftg. std. wt. CI, galv 45 deg elb straight 1/2" dia.	EA	23.82	16.34
0940	Steel ftg. std. wt. CI, galv 45 deg elb straight 3/4" dia.	EA	25.94	17.70
0950	Steel ftg. std. wt. CI, galv 45 deg elb straight 1" dia.	EA	28.53	18.64
0960	Steel ftg. std. wt. CI, galv 45 deg elb straight 1-1/4" dia.	EA	33.30	19.40
0970	Steel ftg. std. wt. CI, galv 45 deg elb straight 1-1/2" dia.	EA	41.94	22.21
0980	Steel ftg. std. wt. CI, galv 45 deg elb straight 2" dia.	EA	50.31	24.12
0990	Steel ftg. std. wt. CI, galv 45 deg elb straight 2-1/2" dia.	EA	81.26	30.44
1000	Steel ftg. std. wt. CI, galv 45 deg elb straight 3" dia.	EA	122.83	41.83
1010	Steel ftg. std. wt. CI, galv 45 deg elb straight 3-1/2" dia.	EA	170.09	52.41
1020	Steel ftg. std. wt. CI, galv 45 deg elb straight 4" dia.	EA	217.72	65.61
1030	Steel ftg. std. wt. CI, galv 45 deg elb straight 5" dia.	EA	321.48	78.59
1040	Steel ftg. std. wt. CI, galv 45 deg elb straight 6" dia.	EA	456.29	83.18
1050	Steel ftg. std. wt. CI, galv 45 deg elb straight 8" dia.	EA	690.04	97.36
15174 1100	Tee straight			
1110	Steel ftg. std. wt. CI, galv tee straight 1/4" dia.	EA	34.76	24.84
1120	Steel ftg. std. wt. CI, galv tee straight 3/8 dia.	EA	34.77	24.85
1130	Steel ftg. std. wt. CI, galv tee straight 1/2" dia.	EA	36.64	27.23
1140	Steel ftg. std. wt. CI, galv tee straight 3/4" dia.	EA	39.29	27.23
1150	Steel ftg. std. wt. CI, galv tee straight 1" dia.	EA	43.89	29.95
1160	Steel ftg. std. wt. CI, galv tee straight 1-1/4" dia.	EA	52.22	30.60
1170	Steel ftg. std. wt. CI, galv tee straight 1-1/2" dia.	EA	61.11	33.63
1180	Steel ftg. std. wt. CI, galv tee straight 2" dia.	EA	72.56	39.21
1190	Steel ftg. std. wt. CI, galv tee straight 2-1/2" dia.	EA	115.92	47.65
1200	Steel ftg. std. wt. CI, galv tee straight 3" dia.	EA	177.54	69.79
1210	Steel ftg. std. wt. CI, galv tee straight 3-1/2" dia.	EA	260.37	83.63
1220	Steel ftg. std. wt. CI, galv tee straight 4" dia.	EA	305.07	98.53
1230	Steel ftg. std. wt. CI, galv tee straight 5" dia.	EA	492.05	131.45
1240	Steel ftg. std. wt. CI, galv tee straight 6" dia.	EA	590.83	146.02

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1250	Steel ftg. std. wt. CI, galv tee straight 8" dia.	EA	1,051.83	194.72
15174 1300	Extra heavy weight, black			
15174 1310	Couplings, steel straight			
1320	Steel ftg. ext. hvy wt. CI, blk couplings straight 1/4" dia.	EA	17.04	12.93
1330	Steel ftg. ext. hvy wt. CI, blk couplings straight 3/8 dia.	EA	17.28	12.94
1340	Steel ftg. ext. hvy wt. CI, blk couplings straight 1/2" dia.	EA	18.28	12.93
1350	Steel ftg. ext. hvy wt. CI, blk couplings straight 3/4" dia.	EA	19.35	13.61
1360	Steel ftg. ext. hvy wt. CI, blk couplings straight 1" dia.	EA	23.51	15.96
1370	Steel ftg. ext. hvy wt. CI, blk couplings straight 1-1/4" dia.	EA	27.39	16.46
1380	Steel ftg. ext. hvy wt. CI, blk couplings straight 1-1/2" dia.	EA	29.37	18.20
1390	Steel ftg. ext. hvy wt. CI, blk couplings straight 2" dia.	EA	36.54	20.19
1400	Steel ftg. ext. hvy wt. CI, blk couplings straight 2-1/2" dia.	EA	47.14	24.12
1410	Steel ftg. ext. hvy wt. CI, blk couplings straight 3" dia.	EA	58.46	29.73
1420	Steel ftg. ext. hvy wt. CI, blk couplings straight 3-1/2" dia.	EA	72.07	35.05
1430	Steel ftg. ext. hvy wt. CI, blk couplings straight 4" dia.	EA	86.04	39.31
1440	Steel ftg. ext. hvy wt. CI, blk couplings straight 5" dia.	EA	135.10	65.61
1450	Steel ftg. ext. hvy wt. CI, blk couplings straight 6" dia.	EA	159.59	72.88
1460	Steel ftg. ext. hvy wt. CI, blk couplings straight 8" dia.	EA	183.53	83.22
1470	Steel ftg. ext. hvy wt. CI, blk couplings straight 10" dia.	EA	244.10	94.75
1480	Steel ftg. ext. hvy wt. CI, blk couplings straight 12" dia.	EA	347.49	142.14
15174 1510	90 degree elbow, straight			
1520	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 1/2" dia.	EA	27.92	16.34
1530	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 3/4" dia.	EA	29.73	17.70
1540	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 1" dia.	EA	33.40	19.06
1550	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 1-1/4" dia.	EA	40.54	20.08
1560	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 1-1/2" dia.	EA	48.11	22.49
1580	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 2" dia.	EA	56.54	24.69
1590	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 2-1/2" dia.	EA	90.32	31.18
1600	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 3" dia.	EA	120.00	42.82
1610	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 4" dia.	EA	249.93	92.74
1620	Steel ftg. ext. hvy wt. CI, blk 90 deg elbw straight 6" dia.	EA	518.54	92.06
15174 1650	45 degree elbow, straight			
1660	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 1/2" dia.	EA	25.20	16.34
1670	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 3/4" dia.	EA	27.47	17.70
1680	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 1" dia.	EA	31.31	19.06
1690	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 1-1/4" dia.	EA	35.50	20.08
1700	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 1-1/2" dia.	EA	52.07	22.49
1710	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 2" dia.	EA	66.16	24.69
1720	Steel ftg. ext. hvy wt. CI, blk 45 deg elbw straight 2-1/2" dia.	EA	92.58	31.18
15174 1800	Tee, straight			
1810	Steel ftg. ext. hvy wt. CI, blk tee straight 1/2" dia.	EA	43.77	27.23
1820	Steel ftg. ext. hvy wt. CI, blk tee straight 3/4" dia.	EA	44.05	27.23
1830	Steel ftg. ext. hvy wt. CI, blk tee straight 1" dia.	EA	50.68	30.63
1840	Steel ftg. ext. hvy wt. CI, blk tee straight 1-1/4" dia.	EA	59.63	31.66
1850	Steel ftg. ext. hvy wt. CI, blk tee straight 1-1/2" dia.	EA	60.09	34.02
1860	Steel ftg. ext. hvy wt. CI, blk tee straight 2" dia.	EA	72.56	40.13
1870	Steel ftg. ext. hvy wt. CI, blk tee straight 2-1/2" dia.	EA	102.90	48.79
1880	Steel ftg. ext. hvy wt. CI, blk tee straight 3" dia.	EA	155.47	71.46
1890	Steel ftg. ext. hvy wt. CI, blk tee straight 4" dia.	EA	263.19	107.36
1900	Steel ftg. ext. hvy wt. CI, blk tee straight 6" dia.	EA	619.13	161.61
15174 4164	Cast iron, standard weight, Plugs			
15174 4165	Black			
4166	Pipe, steel fittings, CI, black, plug, 1/4"	EA	8.93	7.15
4168	1/2" Square Head Plug, Black CI	EA	8.91	7.19
4169	Pipe, steel fittings, CI, black, plug, 3/4"	EA	10.54	8.51
4170	Pipe, steel fittings, CI, black, plug, 1"	EA	11.31	9.00
4171	1-1/4" Sq Head Plug, Black CI	EA	11.91	8.92
4172	Pipe, steel fittings, CI, black, plug, 1.5"	EA	13.89	10.19
4173	Pipe, steel fittings, CI, black, plug, 2"	EA	15.91	11.46
4174	Pipe, steel fittings, CI, black, plug, 4" dia	EA	40.72	22.14
4175	Pipe, steel fittings, CI, black, plug, 6" dia	EA	88.34	40.79
4176	2-1/2" Sq Head Plug, Black CI	EA	21.99	13.61
4177	3" Square Head Plug, Black CI	EA	30.79	17.53
4178	5" Square Head Plug, Black CI	EA	65.40	34.29

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15174 4370 Galvanized				
4374	Plug, CI, 125 lb, galvanized, square head, 1/2"	EA	9.10	7.15
4375	Plug, CI, 125 lb, galvanized, square head, 3/4"	EA	11.30	8.51
4376	Plug, CI, 125 lb, galvanized, square head, 1"	EA	11.93	9.00
4377	Plug, CI, 125 lb, galvanized, square head, 1.25"	EA	13.98	9.69
4378	Plug, CI, 125 lb, galvanized, square head, 1.5"	EA	15.96	10.19
4379	Plug, CI, 125 lb, galvanized, square head, 2"	EA	18.64	11.46
4380	Plug, CI, 125 lb, galvanized, square head, 2.5"	EA	26.59	12.95
4381	Plug, CI, 125 lb, galvanized, square head, 3"	EA	34.13	16.78
4382	Plug, CI, 125 lb, galvanized, square head, 4"	EA	62.33	22.14
4383	5" Square Head Plug, Galv (CI)	EA	74.28	24.40
4384	Plug, CI, 125 lb, galvanized, square head, 6"	EA	132.08	53.22
15174 4700 Nipple black				
4710	1/2"Nipple, Black Stl Sch 40, 4"	EA	20.30	17.97
7262	<i>For schedule 80 nipples, Add</i>		0.50	
4712	Nipple, black, sched 40, 3/4" x 4" long	EA	18.24	14.98
7262	<i>For schedule 80 nipples, Add</i>		0.64	
4714	Nipple, black, sched 40, 1" x 4" long	EA	22.17	17.62
7262	<i>For schedule 80 nipples, Add</i>		0.90	
4716	1-1/4"Nipple, Black Stl Sch 40, 4"	EA	28.58	21.75
7262	<i>For schedule 80 nipples, Add</i>		1.07	
4718	Nipple, black, sched 40, 1.5" x 4" long	EA	26.85	20.68
7262	<i>For schedule 80 nipples, Add</i>		1.44	
4720	Nipple, black, sched 40, 2" x 4" long	EA	31.33	22.92
7262	<i>For schedule 80 nipples, Add</i>		1.94	
4722	2-1/2"Nipple, Black Stl Sch 40, 4"	EA	36.10	25.90
7262	<i>For schedule 80 nipples, Add</i>		2.05	
4724	3" Nipple, Black Stl Sch 40, 4"	EA	46.90	33.92
7262	<i>For schedule 80 nipples, Add</i>		2.86	
4726	Nipple, black, sched 40, 4" x 4" long	EA	71.31	44.28
7262	<i>For schedule 80 nipples, Add</i>		6.54	
15174 4800 Galvanized				
4810	Nipple, galvanized, 1/2" x 4" long	EA	17.09	14.29
7263	<i>For schedule 80 nipples, Add</i>		0.53	
4812	Nipple, galvanized, 3/4" x 4" long	EA	18.34	14.98
7263	<i>For schedule 80 nipples, Add</i>		0.69	
4814	Nipple, galvanized, 1" x 4" long	EA	22.32	17.62
7263	<i>For schedule 80 nipples, Add</i>		0.97	
4816	Nipple, galvanized, 1.25" x 4" long	EA	24.69	19.12
7263	<i>For schedule 80 nipples, Add</i>		1.29	
4818	Nipple, galvanized, 1.5" x 4" long	EA	27.07	20.68
7263	<i>For schedule 80 nipples, Add</i>		1.54	
4820	Nipple, galvanized, 2" x 4" long	EA	31.63	22.92
7263	<i>For schedule 80 nipples, Add</i>		2.07	
4822	Nipple, galvanized, 2.5" x 4" long	EA	40.99	26.22
7263	<i>For schedule 80 nipples, Add</i>		4.25	
4824	Nipple, galvanized, 3" x 4" long	EA	52.26	33.56
7263	<i>For schedule 80 nipples, Add</i>		5.27	
4826	Nipple, galvanized, 4" x 4" long	EA	72.33	44.28
7263	<i>For schedule 80 nipples, Add</i>		7.00	
15174 5000 Milleable iron, 150 lb., black				
15174 5040 90_ elbow, black				
5088	1/2" 90 Deg Ell, 150# M Black	EA	18.74	16.00
5090	Steel ftg, 150# M, black, 90 deg elb, straight, 3/4"	EA	22.95	19.40
5100	Steel ftg, 150# M, black, 90 deg elb, straight, 1"	EA	25.60	20.65
5102	1-1/4" 90 Deg Ell, 150# M Black	EA	28.50	21.71
5120	Steel ftg, 150# M, black, 90 deg elb, straight, 1.5"	EA	33.38	24.69
5130	Steel ftg, 150# M, black, 90 deg elb, straight, 2"	EA	40.09	27.14
5132	2-1/2" 90 Deg Ell, 150# M Black	EA	53.58	27.67
5134	3" 90 Degree Ell, 150# M Black	EA	83.29	39.31
5170	Steel ftg, 150# M, black, 90 deg elb, straight, 4"	EA	153.76	73.90
5172	5" 90 Degree Ell, 150# M Black	EA	216.86	77.78
5190	Steel ftg, 150# M, black, 90 deg elb, straight, 6"	EA	300.12	93.26
15174 5199 Galvanized				
5208	1/2" 90 Degree Ell, 150# M Galv	EA	19.65	17.02

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5210	90 deg elbow, galvanized, straight, 150# M, 3/4"	EA	21.22	17.70
5211	90 deg elbow, galvanized, straight, 150# M, 1"	EA	24.01	18.64
5212	1-1/4"90 Degree Ell,150# M Galv	EA	26.85	19.10
5213	90 deg elbow, galvanized, straight, 150# M, 1.5"	EA	31.51	22.21
5214	90 deg elbow, galvanized, straight, 150# M, 2"	EA	38.56	24.12
5215	2-1/2"90 Degree Ell,150# M Galv	EA	58.48	29.73
5216	90 deg elbow, galvanized, straight, 150# M, 4"	EA	155.47	65.85
5217	5" 90 Degree Ell, 150# M Galv	EA	314.01	76.10
5218	90 deg elbow, galvanized, straight, 150# M, 6"	EA	324.32	83.47
5219	3" 90 Degree Ell, 150# M Galv	EA	84.34	41.79
15174 5250 45_ elbow, black				
5298	1/2" 45 Deg Ell, 150# M Black	EA	20.12	17.02
5300	Steel ftg, 150# M, black, 45 deg elb, straight, 3/4"	EA	21.78	17.70
5310	Steel ftg, 150# M, black, 45 deg elb, straight, 1"	EA	23.95	18.64
5312	1-1/4" 45 Deg Ell,150# M Black	EA	24.58	19.76
5330	Steel ftg, 150# M, black, 45 deg elb, straight, 1.5"	EA	31.53	22.21
5340	Steel ftg, 150# M, black, 45 deg elb, straight, 2"	EA	37.32	24.13
5342	2-1/2" 45 Deg Ell,150# M Black	EA	62.60	29.73
5344	3" 45 Degree Ell,150# M Black	EA	84.91	41.83
5380	Steel ftg, 150# M, black, 45 deg elb, straight, 4"	EA	150.95	65.85
5382	5" 45 Degree Ell,150# M Black	EA	335.51	74.77
5400	Steel ftg, 150# M, black, 45 deg elb, straight, 6"	EA	346.51	83.47
15174 5420 Galvanized				
5429	1/2" 45 Degree Ell, 150# M Galv	EA	20.46	17.02
5430	45 deg elbow, galvanized, straight, 150# M, 3/4"	EA	22.24	17.70
5431	45 deg elbow, galvanized, straight, 150# M, 1"	EA	24.49	18.64
5432	1-1/4"45 Degree Ell,150# M Galv	EA	28.19	21.06
5433	45 deg elbow, galvanized, straight, 150# M, 1.5"	EA	32.80	22.21
5434	45 deg elbow, galvanized, straight, 150# M, 2"	EA	39.24	24.12
5435	2-1/2"45 Degree Ell,150# M Galv	EA	67.91	29.73
5436	45 deg elbow, galvanized, straight, 150# M, 4"	EA	164.30	65.85
5437	5" 45 Degree Ell, 150# M Galv	EA	383.28	73.16
5438	45 deg elbow, galvanized, straight, 150# M, 6"	EA	393.59	83.47
5439	3" 45 Degree Ell, 150# M Galv	EA	91.81	41.83
15174 5450 Tee, black				
5498	1/2" Tee, Straight 150# M Black	EA	31.90	26.55
5500	Steel ftg, 150# M, black, tee, straight, 3/4"	EA	32.53	27.57
5510	Steel ftg, 150# M, black, tee, straight, 1"	EA	37.84	30.63
5512	1-1/4" Tee, Strt 150# M Black	EA	41.88	31.18
5530	Steel ftg, 150# M, black, tee, straight, 1.5"	EA	46.12	33.63
5540	Steel ftg, 150# M, black, tee, straight, 2"	EA	58.69	38.92
5542	2-1/2" Tee, Strt 150# M Black	EA	81.96	46.23
5580	Steel ftg, 150# M, black, tee, straight, 4"	EA	218.48	98.53
5582	3" Tee, Straight 150# M Black	EA	122.65	69.79
5584	5" Tee, Straight 150# M Black	EA	432.06	126.13
5600	Steel ftg, 150# M, black, tee, straight, 6"	EA	458.41	146.02
5602	1/2" Tee, Red Out 150# M Black	EA	34.24	26.55
5603	Steel ftg, 150# M, black, tee, reducing, 3/4"	EA	33.69	27.57
5604	Steel ftg, 150# M, black, tee, reducing, 1"	EA	38.44	29.95
5605	1-1/4" Tee, Red Out 150# M Black	EA	43.91	31.18
5606	Steel ftg, 150# M, black, tee, reducing, 1.5"	EA	52.46	33.63
5607	Steel ftg, 150# M, black, tee, reducing, 2"	EA	61.58	38.92
5609	2-1/2" Tee, Red Out 150# M Black	EA	89.88	46.23
5610	3" Tee, Red Out 150# M Black	EA	137.37	69.79
5611	Steel ftg, 150# M, black, tee, reducing, 4"	EA	233.20	98.53
5612	5" Tee, Red Out 150# M Black	EA	309.83	126.13
5613	Steel ftg, 150# M, black, tee, reducing, 6"	EA	376.88	117.19
5614	Steel ftg, 150# M, black, tee, reducing, 8"	EA	613.69	163.17
15174 5620 Galvanized				
5623	1/2" Tee, Straight 150# M Galv	EA	32.20	26.55
5624	Tee, galvanized, straight, 150# M, 3/4"	EA	32.98	27.57
5625	Tee, galvanized, straight, 150# M, 1"	EA	38.54	29.95
5626	1-1/4" Tee, Straight 150# M Galv	EA	43.05	31.18
5627	Tee, galvanized, straight, 150# M, 1.5"	EA	47.59	33.63

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5628	Tee, galvanized, straight, 150# M, 2	EA	61.24	38.92
5629	2-1/2" Tee, Straight 150# M Galv	EA	87.17	46.23
5630	Tee, galvanized, straight, 150# M, 4"	EA	236.93	98.53
5631	5" Tee, Straight 150# M Galv	EA	484.80	126.13
5632	Tee, galvanized, straight, 150# M, 6"	EA	511.15	146.02
5633	3" Tee, Straight 150# M Galv	EA	130.35	69.79
5639	1/2" Tee, Red Out 150# M Galv	EA	34.95	26.55
5640	Tee, galvanized, reducing on outlet, 150# M, 3/4"	EA	34.35	27.57
5641	Tee, galvanized, reducing on outlet, 150# M, 1"	EA	39.33	29.95
5642	1-1/4" Tee, Red Out 150# M Galv	EA	45.50	31.18
5643	Tee, galvanized, reducing on outlet, 150# M, 1.5"	EA	55.19	33.63
5644	Tee, galvanized, reducing on outlet, 150# M, 2"	EA	64.70	38.92
5645	2-1/2" Tee, Red Out 150# M Galv	EA	96.68	46.23
5646	Tee, galvanized, reducing on outlet, 150# M, 4"	EA	254.59	98.53
5647	3" Tee, Red Out 150# M Galv	EA	148.00	69.79
5648	5" Tee, Red Out 150# M Galv	EA	338.12	126.13
5649	6" Tee, Red Out 150# M Galv	EA	421.02	117.19
15174 5650 Coupling black				
5670	Steel ftg, 150# M, black, cplg, straight, 1/4"	EA	16.34	12.93
5672	1/2" Coupling, Strt 150# M Black	EA	15.97	13.27
5700	Steel ftg, 150# M, black, cplg, straight, 3/4"	EA	17.03	13.61
5710	Steel ftg, 150# M, black, cplg, straight, 1"	EA	20.98	15.96
5712	1-1/4" Cplg, Strt 150# M Black	EA	22.82	16.64
5730	Steel ftg, 150# M, black, cplg, straight, 1.5"	EA	25.61	18.20
5740	Steel ftg, 150# M, black, cplg, straight, 2"	EA	30.54	20.19
5742	2-1/2" Cplg, Strt 150# M Black	EA	46.86	23.56
5744	3" Coupling, Strt 150# M Black	EA	61.46	29.73
5780	Steel ftg, 150# M, black, cplg, straight, 4"	EA	100.76	39.31
5782	5" Coupling, Strt 150# M Black	EA	213.21	63.62
5800	Steel ftg, 150# M, black, cplg, straight, 6"	EA	169.21	72.88
15174 5804 Coupling Galvanized				
5806	Coupling, galvanized, straight, 150# M, 1/2"	EA	16.25	13.27
5807	Coupling, galvanized, straight, 150# M, 3/4"	EA	17.37	13.61
5808	Coupling, galvanized, straight, 150# M, 1"	EA	21.51	15.96
5809	Coupling, galvanized, straight, 150# M, 1.25"	EA	23.51	16.64
5810	Coupling, galvanized, straight, 150# M, 1-1/2"	EA	26.55	18.20
5811	Coupling, galvanized, straight, 150# M, 2"	EA	31.90	20.19
5812	Coupling, galvanized, straight, 150# M, 2.5"	EA	50.54	23.56
5813	Coupling, galvanized, straight, 150# M, 3"	EA	66.55	29.73
5814	Coupling, galvanized, straight, 150# M, 4"	EA	110.83	39.31
5815	5" Coupling, Straight 150# M Galv	EA	156.83	61.81
5816	6" Coupling, Straight 150# M Galv	EA	183.92	72.88
15174 5839 Reducer black				
5840	Stl ftg, 150# M, black, reducer, concentric, 1/4"	EA	16.48	12.93
5842	1/2" Cplg, Red 150# M Black	EA	16.19	13.27
5870	Stl ftg, 150# M, black, reducer, concentric, 3/4"	EA	19.17	15.32
5880	Stl ftg, 150# M, black, reducer, concentric, 1"	EA	21.42	15.96
5882	1-1/4" Cplg, Red 150# M Black	EA	23.30	16.64
5900	Stl ftg, 150# M, black, reducer, concentric, 1.5"	EA	26.71	18.20
5910	Stl ftg, 150# M, black, reducer, concentric, 2"	EA	32.02	20.19
5912	2-1/2" Cplg, Red 150# M Black	EA	44.71	23.73
5913	3" Coupling, Red 150# M Black	EA	57.32	29.73
5914	Stl ftg, 150# M, black, reducer, concentric, 4"	EA	101.89	39.31
5915	5" Coupling, Red 150# M Black	EA	179.81	61.81
5916	Stl ftg, 150# M, black, reducer, concentric, 6"	EA	226.37	72.88
15174 5920 Reducer Galvanized				
5924	Reducer, galvanized, concentric, 150# M, 1/2"	EA	16.56	13.28
5925	Reducer, galvanized, concentric, 150# M, 3/4"	EA	19.57	15.32
5926	Reducer, galvanized, concentric, 150# M, 1"	EA	22.03	15.96
5927	Reducer, galvanized, concentric, 150# M, 1.25"	EA	24.08	16.64
5928	Reducer, galvanized, concentric, 150# M, 1.5"	EA	27.85	18.20
5929	Reducer, galvanized, concentric, 150# M, 2"	EA	33.66	18.20
5930	Reducer, galvanized, concentric, 150# M, 2.5"	EA	48.00	23.73
5931	Reducer, galvanized, concentric, 150# M, 3"	EA	61.59	29.73

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5932	Reducer, galvanized, concentric, 150# M, 4"	EA	112.19	39.31
5933	5" Coupling, Red 150# M Galv	EA	198.94	61.81
5934	Reducer, galvanized, concentric, 150# M, 6"	EA	252.17	72.88
15174 5980	Cap black			
5989	Steel fittings, 150# M, black, cap, 1/4"	EA	8.54	6.46
5990	1/2" Cap, 150# M Black	EA	8.35	6.46
5993	Steel fittings, 150# M, black, cap, 3/4"	EA	10.09	7.83
5994	Steel fittings, 150# M, black, cap, 1"	EA	11.02	8.32
5995	1-1/4" Cap, 150# M Black	EA	12.08	8.34
5996	Steel fittings, 150# M, black, cap, 1.5"	EA	13.78	8.66
5997	Steel fittings, 150# M, black, cap, 2"	EA	16.83	10.08
5998	Steel fittings, 150# M, black, cap, 4"	EA	55.20	22.14
5999	2-1/2" Cap, 150# M Black	EA	29.30	12.95
6000	3" Cap, 150# M Black	EA	36.69	17.03
15174 6010	Cap Galvanized			
6014	Cap, galvanized, 150# M, 1/2"	EA	8.58	6.46
6015	Cap, galvanized, 150# M, 3/4"	EA	10.39	7.83
6016	Cap, galvanized, 150# M, 1"	EA	11.41	8.32
6017	Cap, galvanized, 150# M, 1.25"	EA	12.55	8.34
6018	Cap, galvanized, 150# M, 1.5"	EA	14.44	8.94
6019	Cap, galvanized, 150# M, 2"	EA	17.79	10.26
6020	Cap, galvanized, 150# M, 2.5"	EA	32.01	12.95
6021	Cap, galvanized, 150# M, 3"	EA	39.96	16.78
6024	Cap, galvanized, 150# M, 4"	EA	75.66	22.14
6025	5" Cap, 150# M Galvanized	EA	116.75	29.62
6026	Cap, galvanized, 150# M, 6"	EA	199.26	38.07
15174 6100 90	elbow reducing, galvanized			
6110	90 deg elbow, galvanized, 150 lb, reducing, 3/4" x 1/2"	EA	24.25	19.40
6112	90 deg elbow, galvanized, 150 lb, reducing, 1" x 3/4"	EA	26.69	20.65
6114	90 deg elbow, galvanized, 150 lb, reducing, 1" x 1/2"	EA	26.90	20.65
6116	90 deg elbow, galvanized, 150 lb, reducing, 1.25" x 1"	EA	31.52	22.53
6118	90 deg elbow, galvanized, 150 lb, reducing, 1.25" x 3/4"	EA	32.70	22.53
6120	90 deg elbow, galvanized, 150 lb, reducing, 1.25" x 1/2"	EA	33.10	22.53
6122	90 deg elbow, galvanized, 150 lb, reducing, 1.5" x 1.5"	EA	37.55	24.69
6124	90 deg elbow, galvanized, 150 lb, reducing, 1.5" x 1"	EA	37.55	24.69
6126	90 deg elbow, galvanized, 150 lb, reducing, 1.5" x 3/4"	EA	37.55	24.69
6128	90 deg elbow, galvanized, 150 lb, reducing, 2" x 1.5"	EA	42.26	27.46
6130	90 deg elbow, galvanized, 150 lb, reducing, 2" x 1.25"	EA	43.80	27.46
6132	90 deg elbow, galvanized, 150 lb, reducing, 2" x 1"	EA	44.26	27.46
6134	90 deg elbow, galvanized, 150 lb, reducing, 2" x 3/4"	EA	44.26	27.46
6136	90 deg elbow, galvanized, 150 lb, reducing, 2.5" x 2"	EA	76.77	33.56
6138	90 deg elbow, galvanized, 150 lb, reducing, 2.5" x 1.5"	EA	81.30	33.56
6140	90 deg elbow, galvanized, 150 lb, reducing, 3" x 2.5"	EA	114.49	47.12
6142	90 deg elbow, galvanized, 150 lb, reducing, 3" x 2"	EA	114.49	47.12
6144	90 deg elbow, galvanized, 150 lb, reducing, 4" x 3"	EA	206.43	73.90
15174 6160 90	Degree Reducing Ell 150 LB MI. Black			
6168	1-1/4"x 1/2" 90 Deg Reducing Ell 150# M Black	EA	14.96	11.69
6169	3/4"x1/2" 90 Degree Reducing Ell 150# M Black	EA	8.88	7.19
6170	90 deg elbow, black, 150 lb, reducing, 1" x 3/4"	EA	25.83	20.65
6171	1" x 1/2" 90 Degree Reducing Ell 150# M Black	EA	11.31	9.05
6172	1-1/4"x1" 90 Degree Reducing Ell 150# M Black	EA	14.57	11.42
6173	1-1/4"x 3/4" 90 Deg Reducing Ell 150# M Black	EA	14.67	11.42
6174	90 deg elbow, black, 150 lb, reducing, 1.5" x 1"	EA	33.76	24.69
6175	1-1/2"x 1-1/4" 90 Degree Red Ell 150# M Black	EA	16.79	12.78
6178	90 deg elbow, black, 150 lb, reducing, 1.5" x 3/4"	EA	35.30	24.69
6182	90 deg elbow, black, 150 lb, reducing, 2" x 1.5"	EA	40.26	26.82
6183	2"x1-1/4" 90 Degree Reducing Ell 150# M Black	EA	22.19	15.69
6184	2-1/2" x 1-1/2" 90 Deg Red Ell 150# M Black	EA	36.29	22.69
6186	90 deg elbow, black, 150 lb, reducing, 2' x 1"	EA	41.50	26.22
6190	90 deg elbow, black, 150 lb, reducing, 2" x 3/4"	EA	42.07	26.22
6194	90 deg elbow, black, 150 lb, reducing, 2.5" x 2"	EA	64.32	33.56
6197	3"x2-1/2" 90 Degree Reducing Ell 150# M Black	EA	50.43	29.81
6198	3" x 2" 90 Degree Reducing Ell 150# M Black	EA	50.43	29.81
6200	4" x 3" 90 Degree Reducing Ell 150# M Black	EA	64.26	30.93

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15174 7000 Union brass seat				
7010	Steel ftg, 150# M, black, union, w/brass seat, 1/4"	EA	28.12	18.04
7012	1/2" Union, 150# M Black	EA	13.09	10.15
7040	Steel ftg, 150# M, black, union, w/brass seat, 3/4"	EA	29.16	21.10
7050	Steel ftg, 150# M, black, union, w/brass seat, 1"	EA	32.88	22.27
7052	1-1/4" Union, 150# M Black	EA	22.00	16.04
7070	Steel ftg, 150# M, black, union, w/brass seat, 1.5"	EA	43.58	25.94
7080	Steel ftg, 150# M, black, union, w/brass seat, 2"	EA	49.17	28.35
7082	2-1/2" Union, 150# M Black	EA	43.60	24.68
7084	3" Union, 150# M Black	EA	55.66	29.81
15174 7120 Galvanized				
7124	Union, galvanized, 150# M, 1/2"	EA	27.17	19.40
7125	Union, galvanized, 150# M, 3/4"	EA	29.65	21.10
7126	Union, galvanized, 150# M, 1"	EA	33.55	22.27
7127	Union, galvanized, 150# M, 1.25"	EA	39.14	23.45
7128	Union, galvanized, 150# M, 1.5"	EA	44.48	25.94
7129	Union, galvanized, 150# M, 2"	EA	50.20	28.35
7130	Union, galvanized, 150# M, 2.5"	EA	100.83	37.08
7131	Union, galvanized, 150# M, 3"	EA	136.42	52.41
15174 8529 Plug, black				
8570	Steel fittings, 300# M, black, plug, 1/4"	EA	8.63	3.78
15176 0010 Pipe, steel/cast iron, fittings, special				
15176 1000 Drip pan elbow				
15176 1010 Cast iron, threaded inlet				
1014	Drip pan elbow, 2.5", (safety valve discharge elbow), CI, thd	EA	477.77	57.73
1015	Drip pan elbow, (safety valve discharge elbow), CI, thd, 3"	EA	525.48	66.49
1016	Drip pan elbow, 3.5", (safety valve discharge elbow), CI, thd	EA	576.73	66.67
1017	Drip pan elbow, (safety valve discharge elbow), CI, thd, 4"	EA	707.45	61.77
1018	Drip pan elbow, (safety valve discharge elbow), CI, thd, 5"	EA	942.85	87.14
1019	Drip pan elbow, (safety valve discharge elbow), CI, thd, 6"	EA	1,370.71	113.49
1020	Drip pan elbow, (safety valve discharge elbow), CI, thd, 8"	EA	4,431.37	215.42
15176 1100 Cast steel, threaded inlet				
1110	Drip pan elbow, thd, 2.5", (safety valve discharge elbow),	EA	2,275.85	51.09
1114	Drip pan elbow, thd, 3", (safety valve discharge elbow), steel	EA	2,403.62	65.64
1115	Drip pan elbow, thd, 3.5", (safety valve discharge elbow),	EA	2,535.22	77.03
1116	Drip pan elbow, thd, 4", (safety valve discharge elbow), steel	EA	3,134.85	89.80
1117	Drip pan elbow, thd, 5", (safety valve discharge elbow), steel	EA	5,215.56	100.02
1118	Drip pan elbow, thd, 6", (safety valve discharge elbow), steel	EA	5,107.65	173.75
1119	Drip pan elbow, thd, 8", (safety valve discharge elbow), steel	EA	9,838.96	264.23
15176 6000 Swivel joints, carbon steel				
15176 6010 Buna-N seat for oils, gasoline, chemicals				
6020	Swivel jt, carbon stl, 1" thd, straight, Buna-N seat	EA	221.17	14.75
6022	Swivel jt, carbon stl, 1.5" thd, straight, Buna-N seat	EA	326.59	22.58
6024	Swivel jt, carbon stl, 2" thd, straight, Buna-N seat	EA	354.78	23.86
6025	3" Thrd Swivel Joint	EA	439.64	31.25
6026	3" Flanged Swivel Joint	EA	579.22	34.52
6030	Swivel jt, carbon stl, 4" flanged, straight, Buna-N seat	EA	766.04	39.07
15178 0010 Pipe, steel/cast iron, fittings, flanged/welded				
15178 0619 Gasket and 4 to 20 bolt set - 150lb rated				
0620	Stl ftg, gskt & 4 to 20 bolt set, 1/2" thru 1.5" pipe	EA	18.58	5.30
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		1.38	
0630	Stl ftg, gskt & 4 to 20 bolt set, 2" pipe	EA	28.78	8.21
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		2.20	
0632	2-1/2" BN & G Set, A-307 MB	EA	34.35	10.53
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		1.75	
0650	Stl ftg, gskt & 4 to 20 bolt set, 3" pipe	EA	33.62	9.65
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		2.44	
0670	Stl ftg, gskt & 4 to 20 bolt set, 4" pipe	EA	48.91	13.24
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		4.44	
0680	5" Bolt Nut&Gasket Set, A-307 MB	EA	54.10	14.57
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		4.92	
0690	Stl ftg, gskt & 4 to 20 bolt set, 6" pipe	EA	67.69	17.59
0850	Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add		6.90	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0700	Stl ftg, gskt & 4 to 20 bolt set, 8" pipe	EA	78.96	21.18
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		7.38	
0710	Stl ftg, gskt & 4 to 20 bolt set, 10" pipe	EA	105.72	23.56
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		15.39	
0720	Stl ftg, gskt & 4 to 20 bolt set, 12" pipe	EA	112.79	25.15
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		16.30	
0730	14" (12@1Dx4-1/4"Lg) BN&G Sets	EA	237.94	63.26
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		22.88	
0740	Stl ftg, gskt & 4 to 20 bolt set, 16" pipe	EA	176.68	35.32
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		30.33	
0750	18" (16@1-1/8Dx6"Lg) BN&G Sets	EA	393.78	101.21
0850	<i>Pipe, stl/CI, ftgs, flanged, for 300 lb gasket set, add</i>		41.84	
15178 2290 Threaded companion flange, cast iron				
15178 2310 Black				
2320	Threaded companion flg, CI, black, 125 lb, per flg, 1" pipe	EA	26.81	7.94
2322	1-1/4"Scrd Flange, Black 125# CI	EA	29.11	16.27
2333	3/4" 90 Deg LR Weld Ell,Std Wt	EA	41.81	24.73
2340	Threaded companion flg, 1.5" pipe, CI, black, 125 lb, per flg	EA	30.66	9.22
2350	Threaded companion flg, CI, black, 125 lb, per flg, 2" pipe	EA	32.98	9.37
2352	2-1/2"Scrd Flange, Black 125# CI	EA	37.43	18.25
2354	3" Screwed Flange, Black 125# CI	EA	48.02	21.98
2390	Threaded companion flg, CI, black, 125 lb, per flg, 4" pipe	EA	82.25	24.55
2392	5" Screwed Flange, Black 125# CI	EA	79.03	30.90
2410	Threaded companion flg, CI, black, 125 lb, per flg, 6" pipe	EA	118.03	27.88
15178 2420 Screwed Flanges, Black (1500 Lb)				
2422	3/4" Screwed Flange, Black CI 1500#	EA	53.70	15.97
2424	1" Screwed Flange, Black CI 1500#	EA	55.52	15.79
2426	1-1/4"Scrd Flange, Black CI 1500#	EA	62.82	15.55
2428	1-1/2"Scrd Flange, Black CI 1500#	EA	64.93	16.10
2430	2" Screwed Flange, Black CI 1500#	EA	72.86	15.86
2432	2-1/2"Scrd Flange, Black CI 1500#	EA	121.95	16.68
2434	3" Screwed Flange, Black CI 1500#	EA	145.82	19.59
15178 2470 Galvanized				
2476	Flange, galvanized, 125 lb, screwed, 1" pipe	EA	41.77	7.94
2478	Flange, galvanized, 125 lb, screwed, 1.25" pipe	EA	47.99	8.30
2479	Flange, galvanized, 125 lb, screwed, 1.5" pipe	EA	50.97	8.80
2480	Flange, galvanized, 125 lb, screwed, 2" pipe	EA	48.04	9.19
2481	Flange, galvanized, 125 lb, screwed, 2.5" pipe	EA	57.62	11.53
2482	Flange, galvanized, 125 lb, screwed, 3" pipe	EA	74.22	15.89
2483	Flange, galvanized, 125 lb, screwed, 4" pipe	EA	109.56	24.55
2484	Flange, galvanized, 125 lb, screwed, 6" pipe	EA	166.29	29.77
2485	5" Screwed Flange, Galv (125# CI)	EA	92.24	28.97
15178 3000 Weld joint, butt, carbon steel, standard weight				
15178 3040 90_ elbow				
3115	1" 90 Deg LR Weld Ell,Std Wt	EA	41.81	16.51
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-7.85	
3116	1-1/4" 90 Deg LR Weld Ell,Std Wt	EA	47.14	18.82
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-8.90	
3117	1-1/2" 90 Deg LR Weld Ell,Std Wt	EA	50.43	20.28
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-9.55	
3118	2" 90 Deg LR Weld Ell,Std Wt	EA	64.54	24.65
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-12.32	
3119	2-1/2" 90 Deg LR Weld Ell,Std Wt	EA	80.28	30.81
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-15.36	
3120	Stl ftg, butt weld, 3" pipe, carbon steel, std wt, 90 deg	EA	95.07	33.20
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-17.81	
3130	Stl ftg, butt weld, 4" pipe, carbon steel, std wt, 90 deg	EA	136.56	37.34
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-25.28	
3140	Stl ftg, butt weld, 6" pipe, carbon steel, std wt, 90 deg	EA	226.04	48.27
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-40.28	
3150	Stl ftg, butt weld, 8" pipe, carbon steel, std wt, 90 deg	EA	312.75	57.81
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-53.37	
3160	Stl ftg, butt weld, 10" pipe, carbon steel, std wt, 90 deg	EA	463.21	85.09
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-75.78	
3170	Stl ftg, butt weld, 12" pipe, carbon steel, std wt, 90 deg	EA	586.44	96.07

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-93.99	
3172	14"90 Degree LR Weld Ell, Std Wt	EA	730.19	97.61
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-125.70	
3174	16"90 Degree LR Weld Ell, Std Wt	EA	893.53	123.48
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-150.87	
3191	Stl ftg, butt weld, 18" pipe, carbon steel, std wt, 90 deg	EA	1,295.29	167.50
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-200.20	
3193	20"90 Degree LR Weld Ell, Std Wt	EA	1,295.73	142.74
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-206.49	
3194	Stl ftg, butt weld, 24" pipe, carbon steel, std wt, 90 deg	EA	1,998.20	221.04
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-286.46	
15178 3200 45 Degree Lr Weld Ell Std. Wt.				
3202	6" 45 Degree LR Weld Ell, Std Wt	EA	235.31	59.50
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-44.79	
3204	8" 45 Degree LR Weld Ell, Std Wt	EA	337.41	80.41
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-63.55	
3206	10"45 Degree LR Weld Ell, Std Wt	EA	411.76	98.83
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-75.24	
3208	12"45 Degree LR Weld Ell, Std Wt	EA	545.76	124.58
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-99.06	
3210	14"45 Degree LR Weld Ell, Std Wt	EA	663.73	142.44
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-119.13	
3212	16"45 Degree LR Weld Ell, Std Wt	EA	801.19	178.17
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-141.57	
3214	18"45 Degree LR Weld Ell, Std Wt	EA	948.59	185.03
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-163.38	
3216	3/4" 45 Deg LR Weld Ell, Std Wt	EA	35.31	8.76
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-6.77	
3218	1" 45 Deg LR Weld Ell, Std Wt	EA	35.47	8.39
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-6.79	
3220	1-1/4" 45 Deg LR Weld Ell, Std Wt	EA	40.53	10.05
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-7.77	
3222	1-1/2" 45 Deg LR Weld Ell, Std Wt	EA	43.75	9.65
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-8.39	
3224	2" 45 Deg LR Weld Ell, Std Wt	EA	56.20	14.03
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-10.81	
3226	2-1/2" 45 Deg LR Weld Ell, Std Wt	EA	70.21	18.26
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-13.54	
15178 3350 Tee, straight				
3418	3/4" Tee, Full, Butt Weld, Std Wt	EA	73.48	17.09
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-13.24	
3420	1" Tee, Full, Butt Weld, Std Wt	EA	73.48	15.91
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-13.24	
3422	1-1/4" Tee, Full, Butt Weld, Std Wt	EA	83.06	18.34
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-14.86	
3424	1-1/2" Tee, Full, Butt Weld, Std Wt	EA	95.45	21.36
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-16.91	
3426	2" Tee, Full, Butt Weld, Std Wt	EA	113.78	30.49
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-21.21	
3428	2-1/2" Tee, Full, Butt Weld, Std Wt	EA	129.72	38.66
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-24.02	
3430	Stl ftg, butt weld, 3" pipe, carbon steel, std wt, tee,	EA	170.19	56.26
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-31.55	
3440	Stl ftg, butt weld, 4" pipe, carbon steel, std wt, tee,	EA	228.81	135.01
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-42.25	
3450	Stl ftg, butt weld, 6" pipe, carbon steel, std wt, tee,	EA	361.35	77.84
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-65.59	
3460	Stl ftg, butt weld, 8" pipe, carbon steel, std wt, tee,	EA	470.07	86.94
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-82.36	
3470	Stl ftg, butt weld, 10" pipe, carbon steel, std wt, tee,	EA	637.66	119.19
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-107.95	
3480	Stl ftg, butt weld, 12" pipe, carbon steel, std wt, tee,	EA	851.12	142.87
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-140.34	
3481	14" Tee, Full, Butt Weld Std Wt	EA	1,111.83	171.50
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-190.67	
3482	16" Tee, Full, Butt Weld Std Wt	EA	1,337.03	186.43
6405	Stl ftgs, 150 lb weld on flange, for blind flange, deduct		-229.08	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3483	Stl ftg, butt weld, 18" pipe, carbon steel, std wt, tee,	EA	2,061.03	245.12
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-316.57	
3484	20" Tee, Full, Butt Weld Std Wt	EA	2,158.73	211.56
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-335.10	
3486	Stl ftg, butt weld, 24" pipe, carbon steel, std wt, tee,	EA	3,067.70	315.08
6405	<i>Stl ftgs, 150 lb weld on flange, for blind flange, deduct</i>		-433.02	
15178 3500 Cap				
3501	Stl ftg, butt weld, carbon steel, std wt, cap, 1.5" pipe	EA	26.81	8.50
3502	1" Cap, Welded, Std Wt	EA	23.48	7.55
3503	2" Cap, Welded, Std Wt	EA	31.95	11.01
3504	Stl ftg, butt weld, carbon steel, std wt, cap, 3" pipe	EA	42.38	14.56
3505	Stl ftg, butt weld, carbon steel, std wt, cap, 4" pipe	EA	56.35	15.69
3506	Stl ftg, butt weld, carbon steel, std wt, cap, 6" pipe	EA	103.08	23.23
3507	Stl ftg, butt weld, carbon steel, std wt, cap, 8" pipe	EA	132.64	23.31
3508	Stl ftg, butt weld, carbon steel, std wt, cap, 10" pipe	EA	186.34	37.56
3509	Stl ftg, butt weld, carbon steel, std wt, cap, 12" pipe	EA	228.25	45.55
3510	14" Cap, Welded, Std Wt	EA	325.51	59.17
3512	Stl ftg, butt weld, carbon steel, std wt, cap, 16" pipe	EA	328.45	56.45
3513	2-1/2" Cap, Welded, Std Wt	EA	37.47	6.11
15178 4190 Weld fittings, standard weight				
15178 4600 Tee, reducing on outlet				
4602	Stl ftg, weld, 3" x 2.5" pipe, std wt, tee, reducing on outlet	EA	179.81	53.76
4604	Stl ftg, weld, 4" x 3" pipe, std wt, tee, reducing on outlet	EA	236.73	57.61
4606	Stl ftg, weld, 6" x 5" pipe, std wt, tee, reducing on outlet	EA	380.59	75.19
4607	Stl ftg, weld, 8" x 6" pipe, std wt, tee, reducing on outlet	EA	517.60	89.40
4608	Stl ftg, weld, 10" x 8" pipe, std wt, tee, reducing on outlet	EA	721.42	126.78
4609	Stl ftg, weld, 12" x 10" pipe, std wt, tee, reducing on outlet	EA	959.77	155.50
4610	Stl ftg, weld, 16" x 12" pipe, std wt, tee, reducing on outlet	EA	1,234.54	171.81
4611	14" Tee, Red Out Butt Weld Std Wt	EA	1,113.25	163.13
4612	18" Tee, Red Out Butt Weld Std Wt	EA	1,688.58	194.17
15178 4660 Reducer, eccentric				
4663	3" x 2" Reducer, Eccentric	EA	84.18	23.94
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		12.33	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-1.96	
4664	Reducer, eccentric, carbon steel, std wt, weld jt, 4" x 3"	EA	116.27	27.75
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		19.39	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-3.88	
4666	Reducer, eccentric, carbon steel, std wt, weld jt, 4" x 2"	EA	121.76	24.63
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		22.14	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-4.98	
4670	Reducer, eccentric, carbon steel, std wt, weld jt, 6" x 4"	EA	216.36	41.72
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		37.48	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-7.92	
4672	Reducer, eccentric, carbon steel, std wt, weld jt, 6" x 3"	EA	248.62	39.66
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		53.61	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-14.37	
4676	Reducer, eccentric, carbon steel, std wt, weld jt, 8" x 6"	EA	279.78	47.46
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		51.52	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-11.77	
4678	Reducer, eccentric, carbon steel, std wt, weld jt, 8" x 4"	EA	285.40	39.10
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		54.33	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-12.89	
4682	Reducer, eccentric, carbon steel, std wt, weld jt, 10" x 8"	EA	363.61	68.49
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		63.98	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-13.81	
4684	Reducer, eccentric, carbon steel, std wt, weld jt, 10" x 6"	EA	417.94	64.77
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		91.14	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-24.67	
4688	Reducer, eccentric, 12" x 10", carbon steel, std wt, weld jt	EA	462.14	123.54
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		89.67	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-21.73	
4690	Reducer, eccentric, carbon steel, std wt, weld jt, 12" x 8"	EA	524.39	115.55
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		120.80	
4710	<i>Reducer, eccentric, std wt, steel, for concentric reducers, deduct</i>		-34.18	
4691	14" x 12" Reducer, Eccentric	EA	648.99	163.21
4700	<i>Reducer, eccentric, std wt, steel, for 300 lb reducers, add</i>		112.54	

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4710	Reducer, eccentric, std wt, steel, for concentric reducers, deduct		-23.82	
4692	Reducer, eccentric, 16" x 12", carbon steel, std wt, weld jt	EA	837.99	174.28
4700	Reducer, eccentric, std wt, steel, for 300 lb reducers, add		242.25	
4710	Reducer, eccentric, std wt, steel, for concentric reducers, deduct		-79.23	
4693	14" x 10" Reducer, Eccentric	EA	670.56	149.56
4700	Reducer, eccentric, std wt, steel, for 300 lb reducers, add		123.33	
4710	Reducer, eccentric, std wt, steel, for concentric reducers, deduct		-28.14	
4694	16" x 14" Reducer, Eccentric	EA	757.83	183.68
4700	Reducer, eccentric, std wt, steel, for 300 lb reducers, add		140.47	
4710	Reducer, eccentric, std wt, steel, for concentric reducers, deduct		-32.34	
4695	18" x 16" Reducer, Eccentric	EA	944.21	196.59
4700	Reducer, eccentric, std wt, steel, for 300 lb reducers, add		199.60	
4710	Reducer, eccentric, std wt, steel, for concentric reducers, deduct		-52.59	
15178 6000 Weld-on flange, forged steel				
15178 6020 Slip-on, 150 lb flange, (welded front and back)				
6120	Stl ftg, weld-on flg, wld fr&back, 3" pipe, fst, slip-on,	EA	84.78	22.27
6140	Stl ftg, weld-on flg, wld fr&back, 4" pipe, fst, slip-on,	EA	122.33	29.17
6160	Stl ftg, weld-on flg, wld fr&back, 6" pipe, fst, slip-on,	EA	188.60	45.66
15178 6400 Welding neck, 150 lb flange				
6470	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 2.5" pipe	EA	64.17	14.75
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		6.96	
6480	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 3" pipe	EA	68.11	13.40
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		6.65	
6500	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 4" pipe	EA	89.81	18.24
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		7.92	
6520	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 6" pipe	EA	137.04	24.82
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		12.17	
6530	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 8" pipe	EA	211.42	38.55
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		21.29	
6540	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 10" pipe	EA	287.63	48.83
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		35.09	
6550	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 12" pipe	EA	380.76	61.64
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		51.00	
6551	14" Weld Neck Flange, 150#	EA	385.08	55.14
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		40.82	
6552	16" Weld Neck Flange, 150#	EA	512.86	58.47
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		63.77	
6553	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 18" pipe	EA	1,077.85	106.34
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		181.09	
6554	20" Weld Neck Flange, 150#	EA	815.35	68.56
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		112.13	
6556	Stl ftg, weld-on flg, fst, wldg neck, 150 lb flg, 24" pipe	EA	1,630.26	140.36
6402	Stl ftgs, 150 lb weld on flange, for 300 lb flanges, add		297.10	
15180 Grooved-Joint Pipe				
15182 0010 Pipe, grooved-joint steel fittings & valves				
15182 1000 Schedule 40, black				
1030	1/2" (12mm) A-53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	5.49	1.61
1040	3/4" (20mm) A-53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	6.31	1.61
1050	1" (25mm) A-53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	7.33	1.61
1060	1-1/4" (32mm) A53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	9.20	2.26
1070	1-1/2" (40mm) A53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	10.36	2.57
1080	2" (50mm) A53 Pipe, T&C Sch 40 Incl Hanger & 125# CI Fitting	LF	13.13	3.18
1090	Pipe, 2.5" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched	LF	14.61	2.98
1100	Pipe, 3" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched 40,	LF	17.18	3.30
1110	Pipe, 4" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched 40,	LF	20.76	4.01
1112	5" (12.5cm) Grooved Sch 40 Std Wt Incl Cplgs, Hangers & Ftngs @ 10	LF	14.60	2.19
1130	Pipe, 6" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched 40,	LF	38.09	5.77
1140	Pipe, 8" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched 40,	LF	48.97	6.35
1150	Pipe, 10" dia, grvd-jt steel incl cplg & clv hgr 10' OC, sched	LF	66.18	7.58
2010	1-1/2" Mechanical Coupling	EA	42.05	5.26
2020	2" Mechanical Coupling	EA	42.74	5.23
2030	2-1/2" Mechanical Coupling	EA	46.22	5.50
2040	3" Mechanical Coupling	EA	53.94	5.68
2050	4" Mechanical Coupling	EA	68.15	6.26
2060	5" Mechanical Coupling	EA	133.28	7.35

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2070	6" Mechanical Coupling	EA	110.16	8.20
15183 Medical Gas System Specialties				
15183 1000 Vacuum System				
1001	Vacuum Outlet Alarm Panel	EA	1,076.51	
15183 2000 Nitrogen & Oxygen System				
2001	Nitrogen & Oxygen System Pipe Manifold - 5 Cyl	EA	2,204.26	
2002	Nitrogen & Oxygen System Pipe Manifold - 10 Cyl	EA	3,838.95	
15183 3000 Outlets & Valves All Systems				
3001	Recessed Wall Mt-Single Outlet	EA	163.11	
3002	Ceiling Type, 6 Outlets	EA	280.54	
3003	2" Zone Valve w/Box	EA	312.85	
15183 4000 Alarm Panel, Medical Gases and Vacuum				
4001	Alarm Panel, Medical Gases and Vacuum	EA	1,076.51	
15187 Prefabricated Pipe Conduit				
15188 0010 Pipe conduit, prefabricated				
Note: For Entire Section Excavation, Trenching Or Backfill Or Fittings Is Not Included. For Fittings, Anchors, Tees, And Over Size Conduit, Use The Equivalent Of 10 Ft Of The Respective Size Of Pipe.				
15188 2400 Polyurethane insulation				
15188 2410 FRP carrier and casing				
2420	Pipe conduit, prefab,casing,4", 1"polyurethane insul, FRP	LF	67.44	13.02
2422	Pipe conduit, prefab,casing,6", 1"polyurethane insul, FRP	LF	100.62	15.85
2424	Pipe conduit, prefab,casing,8", 1"polyurethane insul, FRP	LF	147.33	18.93
2426	Pipe conduit, prefab,casing,10", 1"polyurethane insul, FRP	LF	195.59	22.84
2428	Pipe conduit, prefab,casing,12", 1"polyurethane insul, FRP	LF	245.32	27.63
15188 2430 FRP carrier and PVC casing				
2440	Pipe conduit, prefab,PVC casing, 4", 1"polyurethane insul, FRP	LF	46.66	18.34
2442	Pipe conduit, prefab,PVC casing, 6", 1"polyurethane insul, FRP	LF	58.47	20.09
2444	Pipe conduit, prefab,PVC casing, 8", 1"polyurethane insul, FRP	LF	77.33	23.93
2446	Pipe conduit, prefab,PVC casing, 10", 1"polyurethane insul, FRP	LF	99.66	30.53
2448	Pipe conduit, prefab,PVC casing, 12", 1"polyurethane insul, FRP	LF	124.92	40.50
15188 2450 PVC carrier and casing				
2460	Pipe conduit, prefab,casing,4", 1"polyurethane insul, PVC	LF	23.24	9.19
2462	Pipe conduit, prefab,casing,6", 1"polyurethane insul, PVC	LF	30.04	10.40
2464	Pipe conduit, prefab,casing,8", 1"polyurethane insul, PVC	LF	38.70	12.00
2466	Pipe conduit, prefab,casing,10", 1"polyurethane insul, PVC	LF	47.07	14.47
2468	Pipe conduit, prefab,casing,12", 1"polyurethane insul, PVC	LF	51.22	16.71
15188 9000 Combined steam pipe with condensate return				
9010	Pipe conduit, prefab, 8" & 4" in 16.5", comb st pipe cnds return	LF	158.23	4.23
9020	Pipe conduit, prefab, 6" & 3" in 15", comb st pipe cnds return	LF	125.08	4.24
9030	Pipe conduit, prefab, 3" & 1.5" in 10", comb st pipe cnds return	LF	84.99	3.79
9040	Pipe conduit, prefab, 2" & 1.25" in 10", comb st pipe cnds return	LF	74.53	3.98
9050	Pipe conduit, prefab,1.5" & 1.25" in 10", comb st pipe cnds	LF	73.27	3.57
15188 9100 Steam pipe only				
9110	Pipe conduit, prefab, 6" in 11.5" case, steam pipe only (no	LF	79.48	4.09
9120	Pipe conduit, prefab, 4" in 10" case, steam pipe only (no	LF	53.16	2.36
9130	Pipe conduit, prefab, 3" in 8" case, steam pipe only (no	LF	49.63	1.55
9140	Pipe conduit, prefab, 2" in 6" case, steam pipe only (no	LF	40.30	1.14
9150	Pipe conduit, prefab, 2" in 8" case, steam pipe only (no	LF	41.19	1.55
15189 Pipe Supports/Hangers				
15190 0200 Beam attachment, welded				
0202	Beam attachment, welded, 3/8"	EA	12.26	
0203	Beam attachment, welded, 1/2"	EA	12.64	
0204	Beam attachment, welded, 5/8"	EA	13.39	
0205	Beam attachment, welded, 3/4"	EA	14.04	
0206	Beam attachment, welded, 7/8"	EA	17.09	
0207	Beam attachment, welded, 1"	EA	21.81	
15190 0300 Clamps				
15190 0310 C-clamp, for mounting on steel beam flange				
0320	Pipe hanger, C-clamp, w/1knt 3/8" thd rod, for mtg on stl	EA	4.10	0.45
0330	Pipe hanger, C-clamp, w/1knt 1/2" thd rod, for mtg on stl	EA	4.70	0.45

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0340	Pipe hanger, C-clamp, w/lknt 5/8" thd rod, for mtg on stl	EA	6.16	0.45
0350	Pipe hanger, C-clamp, w/lknt 3/4" thd rod, for mtg on stl	EA	7.68	0.45
0352	Pipe hanger, C-clamp, w/lknt 7/8" thd rod, for mtg on stl	EA	8.69	0.57
15190 0480	Beam clamp, flange type			
0482	Beam clamp, flange type, for 3/8" bolt	EA	9.72	1.63
0483	Beam clamp, flange type, for 1/2" bolt	EA	10.41	1.70
0484	Beam clamp, flange type, for 5/8" bolt	EA	16.42	1.89
0485	Beam clamp, flange type, for 3/4" bolt	EA	18.79	2.08
0486	Beam clamp, flange type, for 1" bolt	EA	54.85	2.35
15190 0750	Riser or extension pipe, carbon steel			
0756	Pipe hanger, clamps, riser or ext pipe, CS, 1/2" pipe	EA	8.65	3.90
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		5.38	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		1.64	
0760	Pipe hanger, clamps, riser or ext pipe, CS, 3/4" pipe	EA	9.25	4.42
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		5.61	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		1.71	
0770	Pipe hanger, clamps, riser or ext pipe, CS, 1" pipe	EA	9.60	4.46
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		6.00	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		1.83	
0780	Pipe hanger, clamps, riser or ext pipe, CS, 1.25" pipe	EA	10.33	4.50
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		7.13	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		2.18	
0790	Pipe hanger, clamps, riser or ext pipe, CS, 1.5" pipe	EA	10.75	5.03
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		7.66	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		2.34	
0800	Pipe hanger, clamps, riser or ext pipe, CS, 2" pipe	EA	11.65	5.34
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		8.76	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		2.67	
0820	Pipe hanger, clamps, riser or ext pipe, CS, 3" pipe	EA	12.72	5.75
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		9.80	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		2.99	
0840	Pipe hanger, clamps, riser or ext pipe, CS, 4" pipe	EA	14.46	6.47
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		12.35	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		3.77	
0850	Pipe hanger, clamps, riser or ext pipe, CS, 5" pipe	EA	17.66	6.66
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		18.01	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		5.50	
0860	Pipe hanger, clamps, riser or ext pipe, CS, 6" pipe	EA	19.36	6.65
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		20.82	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		6.36	
0870	Pipe hanger, clamps, riser or ext pipe, CS, 8" pipe	EA	26.53	7.26
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		33.50	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		10.23	
0880	Pipe hanger, clamps, riser or ext pipe, CS, 10" pipe	EA	33.84	7.57
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		46.32	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		14.14	
0890	Pipe hanger, clamps, riser or ext pipe, CS, 12" pipe	EA	40.10	8.78
0900	Riser or ext pipe, CS, for plastic coating 1/2" to 12", add		55.65	
0910	Riser or ext pipe, CS, for copper plating 1/2" to 12", add		16.99	
15190 1400	Pipe hanger, adj band, non-insulated pipe			
15190 1410	Adjustable band, carbon steel			
	Note: includes all associated nuts & washers			
1420	Pipe hanger, adj band, CS, for non-insul pipe, 1/2" pipe	EA	5.04	2.52
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.52	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.31	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.31	
1430	Pipe hanger, adj band, CS, for non-insul pipe, 3/4" pipe	EA	5.09	2.41
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.52	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.31	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.31	
1440	Pipe hanger, adj band, CS, for non-insul pipe, 1" pipe	EA	5.33	2.66
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.60	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.36	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.36	
1450	Pipe hanger, adj band, CS, for non-insul pipe, 1.25" pipe	EA	5.47	2.81
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.62	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.37	
1460	Pipe hanger, adj band, CS, for non-insul pipe, 1.5" pipe	EA	5.72	3.05
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.70	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.42	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.42	
1470	Pipe hanger, adj band, CS, for non-insul pipe, 2" pipe	EA	6.30	3.16
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		0.95	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.57	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.57	
1480	Pipe hanger, adj band, CS, for non-insul pipe, 2.5" pipe	EA	6.55	3.19
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		1.01	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.60	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.60	
1490	Pipe hanger, adj band, CS, for non-insul pipe, 3" pipe	EA	6.89	3.55
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		1.12	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		0.67	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		0.67	
1510	Pipe hanger, adj band, CS, for non-insul pipe, 4" pipe	EA	8.45	4.15
1550	Pipe hanger, adj band, CS, for non-insul pipe, for cu plated, add		1.74	
1560	Pipe hanger, adj band, CS, for non-insul pipe, for galv, add		1.04	
1570	Pipe hanger, adj band, CS, for non-insul pipe, for plstc coat, add		1.04	
15190 1800 Clevis, adjustable, carbon steel				
Note: includes all associated nuts & washers				
1820	Pipe hanger, clevis, adj, CS, for non-insul pipe, 3/4" pipe	EA	5.25	2.52
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		0.69	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		0.80	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.14	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		1.87	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		5.51	
1830	Pipe hanger, clevis, adj, CS, for non-insul pipe, 1" pipe	EA	5.41	2.48
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		0.73	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		0.85	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.14	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		2.00	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		5.88	
1860	Pipe hanger, clevis, adj, CS, for non-insul pipe, 2" pipe	EA	6.24	2.91
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		1.10	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		1.28	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.22	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		2.99	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		8.80	
1880	Pipe hanger, clevis, adj, CS, for non-insul pipe, 3" pipe	EA	7.99	3.65
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		2.07	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		2.42	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.41	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		5.65	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		16.64	
1900	Pipe hanger, clevis, adj, CS, for non-insul pipe, 4" pipe	EA	9.03	4.18
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		2.55	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		2.98	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.50	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		6.97	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		20.51	
1920	Pipe hanger, clevis, adj, CS, for non-insul pipe, 6" pipe	EA	11.61	4.30
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		4.06	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		4.74	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-0.80	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		11.07	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		32.60	
1930	Pipe hanger, clevis, adj, CS, for non-insul pipe, 8" pipe	EA	15.78	4.54
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		6.67	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		7.78	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-1.31	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		18.18	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-mly U-strap, add		53.53	
1940	Pipe hanger, clevis, adj, CS, for non-insul pipe, 10" pipe	EA	24.25	4.82
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		12.10	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		14.12	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-2.38	

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2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		33.01	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		97.20	
1950	Pipe hanger, clevis, adj, CS, for non-insul pipe, 12" pipe	EA	27.77	5.11
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		14.12	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		16.47	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-2.78	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		38.50	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		113.37	
1960	Pipe hanger, clevis, adj, CS, for non-insul pipe, 14" pipe	EA	41.94	5.68
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		23.11	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		26.97	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-4.55	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		63.04	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		185.61	
1970	Pipe hanger, clevis, adj, CS, for non-insul pipe, 16" pipe	EA	58.01	6.64
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		32.78	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		38.24	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-6.46	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		89.39	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		263.20	
1971	Pipe hanger, clevis, adj, CS, for non-insul pipe, 18" pipe	EA	73.33	8.09
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		41.46	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		48.37	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-8.17	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		113.08	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		332.95	
1972	Pipe hanger, clevis, adj, CS, for non-insul pipe, 20" pipe	EA	87.08	11.03
1980	Pipe hanger, clevis, non-insul pipe, for galv, add		47.61	
1990	Pipe hanger, clevis, non-insul pipe, for cu plated 1/2" - 4", add		55.55	
2000	Pipe hanger, clevis, non-insul pipe, for lt wt 1/2" - 4", deduct		-9.38	
2010	Pipe hanger, clevis, adj, CS, for insul pipe, 3/4" - 12", add		129.85	
2020	Pipe hanger, clevis, adj, CS, for insul pipe, chrome-moly U-strap, add		382.34	
15190 2250 Split ring, malleable iron				
Note: includes all associated nuts & washers				
2260	Pipe hanger, split ring, M, for non-insul pipe, 1/2" pipe	EA	5.17	1.81
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.08	
2270	Pipe hanger, split ring, M, for non-insul pipe, 3/4" pipe	EA	5.24	1.78
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.08	
2280	Pipe hanger, split ring, M, for non-insul pipe, 1" pipe	EA	5.40	2.16
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.09	
2290	Pipe hanger, split ring, M, for non-insul pipe, 1.25" pipe	EA	5.93	2.16
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.12	
2300	Pipe hanger, split ring, M, for non-insul pipe, 1.5" pipe	EA	6.04	2.02
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.12	
2310	Pipe hanger, split ring, M, for non-insul pipe, 2" pipe	EA	6.21	2.06
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.13	
2320	Pipe hanger, split ring, M, for non-insul pipe, 2.5" pipe	EA	6.46	1.81
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.14	
2330	Pipe hanger, split ring, M, for non-insul pipe, 3" pipe	EA	6.80	1.84
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.16	
2350	Pipe hanger, split ring, M, for non-insul pipe, 4" pipe	EA	7.83	1.88
2390	Pipe hanger, split ring, M, for non-insul pipe, for cu plated, add		0.21	
15190 2400 Split Pipe Clamp Type 25 With Flange Support				
Note: Based On Pipe Size Includes all associated nuts & washers				
2410	1/2" Split Pipe Clamp Type 25	EA	29.99	
2420	3/4" Split Pipe Clamp Type 25	EA	30.28	
2430	1" Split Pipe Clamp Type 25	EA	30.52	
2440	1-1/4" Split Pipe Clamp Type 25	EA	33.20	
2450	1-1/2" Split Pipe Clamp Type 25	EA	35.40	
2460	2" Split Pipe Clamp Type 25	EA	39.51	
2470	2-1/2" Split Pipe Clamp Type 25	EA	48.66	
2480	3" Split Pipe Clamp Type 25	EA	54.73	
15190 2500 Washer, flat steel				
2502	Washer, flat steel, 3/8"	EA	0.37	
2503	Washer, flat steel, 1/2"	EA	0.45	
2504	Washer, flat steel, 5/8"	EA	0.57	
2505	Washer, flat steel, 3/4"	EA	0.68	

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2506	Washer, flat steel, 7/8"	EA	0.86	
2507	Washer, flat steel, 1"	EA	1.04	
2508	Washer, flat steel, 1-1/8"	EA	1.25	
15190 2520	Nut, steel, hex			
2522	Nut, steel, hex, 3/8"	EA	0.45	
2523	Nut, steel, hex, 1/2"	EA	0.56	
2524	Nut, steel, hex, 5/8"	EA	0.70	
2525	Nut, steel, hex, 3/4"	EA	0.91	
2526	Nut, steel, hex, 7/8"	EA	1.21	
2527	Nut, steel, hex, 1"	EA	1.53	
2528	Nut, steel, hex, 1-1/8"	EA	2.28	
15190 2532	Turnbuckle			
2534	Turnbuckle, 3/8"	EA	7.89	
2535	Turnbuckle, 1/2"	EA	9.71	
2536	Turnbuckle, 5/8"	EA	10.18	
2537	Turnbuckle, 3/4"	EA	13.51	
2538	Turnbuckle, 7/8"	EA	18.25	
2539	Turnbuckle, 1"	EA	22.98	
2540	Turnbuckle, 1-1/8"	EA	36.12	
15190 2544	Eye rod, welded			
2546	Eye rod, welded, 3/8"	EA	13.62	
2547	Eye rod, welded, 1/2"	EA	18.65	
2548	Eye rod, welded, 5/8"	EA	26.21	
2549	Eye rod, welded, 3/4"	EA	33.40	
2550	Eye rod, welded, 7/8"	EA	38.53	
2551	Eye rod, welded, 1"	EA	52.86	
15190 2556	Eye rod, welded, linked			
2558	Eye rod, welded, linked, 3/8"	EA	94.08	
2559	Eye rod, welded, linked, 1/2"	EA	126.39	
2560	Eye rod, welded, linked, 5/8"	EA	179.88	
2561	Eye rod, welded, linked, 3/4"	EA	232.77	
2562	Eye rod, welded, linked, 7/8"	EA	285.32	
2563	Eye rod, welded, linked, 1"	EA	368.70	
15190 2650	Rods, carbon steel, continuous threaded			
2678	5/16"D Threaded Rod, Brgt Finish	LF	2.20	0.38
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.13	
2680	Rods, carbon steel, continuous thread, 3/8" thread size, bright	LF	2.70	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.24	
2688	7/16"D Threaded Rod, Brgt Finish	LF	2.74	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.28	
2690	Rods, carbon steel, continuous thread, 1/2" thread size, bright	LF	3.25	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.46	
2700	Rods, carbon steel, continuous thread, 5/8" thread size, bright	LF	3.92	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.73	
2710	Rods, carbon steel, continuous thread, 3/4" thread size, bright	LF	5.07	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		1.19	
2720	Rods, carbon steel, continuous thread, 7/8" thread size, bright	LF	6.04	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		1.58	
2721	Rods, carbon steel, continuous thread, 1" thread size, bright	LF	7.57	0.89
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		1.61	
2722	Rods, carbon steel, continuous thread, 1-1/8" thread size, bright	LF	8.91	1.14
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		1.67	
2725	Rods, carbon steel, continuous thread, 1/4" thread size, bright	LF	2.48	0.57
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		0.15	
2729	Rods, carbon steel, continuous thread, 1.25" thread size, bright	LF	11.40	1.60
2730	<i>Rods, carbon steel, continuous thread, for galvanized add</i>		2.04	
15190 2734	Rods, threaded, type 304 stainless steel			
2735	Rods, threaded, type 304 sst, 1/4"	LF	3.16	0.60
2737	Rods, threaded, type 304 sst, 1/2"	LF	5.72	0.53
2738	Rods, threaded, type 304 sst, 3/4"	LF	8.21	0.57
2739	Rods, threaded, type 304 sst, 1"	LF	14.27	0.57
2741	Rods, threaded, type 304 sst, 1.25"	LF	30.52	0.83
2742	5/16"D Threaded Rod, 304 SST	LF	2.46	0.34
2743	3/8"D Threaded Rod, 304 SST	LF	2.59	0.32
2744	7/16"D Threaded Rod, 304 SST	LF	3.34	0.33

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2745	5/8"D Threaded Rod, 304 SST	LF	4.60	0.33
2746	7/8"D Threaded Rod, 304 SST	LF	7.59	0.61
15190 2820	Rod couplings			
2821	Hanger, rod coupling, 3/8"	EA	6.40	2.76
2822	Hanger, rod coupling, 1/2"	EA	7.32	3.29
2823	Hanger, rod coupling, 5/8"	EA	8.97	3.63
2824	Hanger, rod coupling, 3/4"	EA	10.77	3.97
2825	Hanger, rod coupling, 7/8"	EA	12.87	3.18
2826	Hanger, rod coupling, 1"	EA	16.73	3.52
2827	Hanger, rod coupling, 1-1/8"	EA	21.91	4.01
15190 2900	Rolls			
	Note: includes all associated nuts & washers			
15190 2910	Adjustable yoke, carbon steel with CI roll			
2918	Pipe hanger, rolls, adj yoke, CS w/CI roll, 2" pipe	EA	13.10	1.56
2930	Pipe hanger, rolls, adj yoke, CS w/CI roll, 3" pipe	EA	15.66	1.70
2950	Pipe hanger, rolls, adj yoke, CS w/CI roll, 4" pipe	EA	19.88	1.99
2970	Pipe hanger, rolls, adj yoke, CS w/CI roll, 6" pipe	EA	27.36	2.13
2980	Pipe hanger, rolls, adj yoke, CS w/CI roll, 8" pipe	EA	39.02	2.41
2990	Pipe hanger, rolls, adj yoke, CS w/CI roll, 10" pipe	EA	46.58	2.84
3000	Pipe hanger, rolls, adj yoke, CS w/CI roll, 12" pipe	EA	65.65	3.41
3010	Pipe hanger, rolls, adj yoke, CS w/CI roll, 14" pipe	EA	166.76	4.12
3020	Pipe hanger, rolls, adj yoke, CS w/CI roll, 16" pipe	EA	211.74	4.69
15190 3169	Trapeze w/roller -- Does Not Include Rod			
3170	Pipe hanger, trapeze w/rlr, 1" pipe	EA	15.34	1.70
3190	Pipe hanger, trapeze w/rlr, 1.5" pipe	EA	15.87	1.70
3200	Pipe hanger, trapeze w/rlr, 2" pipe	EA	16.55	1.85
3210	Pipe hanger, trapeze w/rlr, 2.5" pipe	EA	17.74	1.99
3220	Pipe hanger, trapeze w/rlr, 3" pipe	EA	18.50	1.99
3240	Pipe hanger, trapeze w/rlr, 4" pipe	EA	22.32	1.99
3260	Pipe hanger, trapeze w/rlr, 6" pipe	EA	30.64	2.27
3270	Pipe hanger, trapeze w/rlr, 8" pipe	EA	45.79	2.56
3280	Pipe hanger, trapeze w/rlr, 10" pipe	EA	52.94	2.84
15190 3300	Saddles Type 39 (Sizes Are Pipe Sizes)			
15190 3310	Pipe support complete, adjustable, cast iron			
3320	Pipe support, CI saddle, adjustable, 2.5" pipe	EA	92.28	1.10
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-30.30	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-53.48	
3330	Pipe support, CI saddle, adjustable, 3" pipe	EA	93.85	1.21
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-30.74	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-54.25	
3350	Pipe support, CI saddle, adjustable, 4" pipe	EA	112.69	1.63
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-36.80	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-64.94	
3370	Pipe support, CI saddle, adjustable, 6" pipe	EA	119.73	1.89
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-38.96	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-68.76	
3380	Pipe support, CI saddle, adjustable, 8" pipe	EA	133.04	1.97
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-43.29	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-76.40	
3390	Pipe support, CI saddle, adjustable, 10" pipe	EA	146.11	2.04
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-47.62	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-84.04	
3400	Pipe support, CI saddle, adjustable, 12" pipe	EA	159.09	2.19
3450	Pipe support, CI saddle, for std pipe support, 1 piece, CI, deduct		-51.95	
3460	Pipe, CI saddle, for stanchion support, CI w/stl yoke, deduct		-91.67	
15190 3549	Insulation shield Length Variable With Pipe Size			
3550	Pipe support, insulation shield, 1" thk, 1/2" pipe	EA	6.16	1.00
3570	Pipe support, insulation shield, 1" thk, 1" pipe	EA	7.53	1.00
3590	Pipe support, insulation shield, 1" thk, 1.5" pipe	EA	9.63	1.00
3600	Pipe support, insulation shield, 1" thk, 2" pipe	EA	10.27	1.04
3620	Pipe support, insulation shield, 1" thk, 3" pipe	EA	11.35	1.17
3630	Pipe support, insulation shield, 2" thk, 3.5" pipe	EA	12.39	1.45
3660	Pipe support, insulation shield, 2" thk, 6" pipe	EA	16.99	1.45
3670	Pipe support, insulation shield, 2" thk, 8" pipe	EA	18.19	1.14

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3680	Pipe support, insulation sheild, 2" thk, 10" pipe	EA	18.53	1.24
3700	Pipe support, insulation sheild, 2" thk, 14" pipe	EA	26.98	1.24
3720	Pipe support, insulation sheild, 2" thk, 18" pipe	EA	28.76	0.73
3730	Pipe support, insulation sheild, 2" thk, 20" pipe	EA	29.40	0.73
3732	Pipe support, insulation sheild, 2" thk, 24" pipe	EA	83.81	2.10
3733	Pipe support, insulation sheild, 2" thk, 30" pipe	EA	86.16	2.14
15190 3750 Covering protection saddle				
15190 3755 1" Covering				
3770	Pipe insulation protection saddle, 3/4" pipe, 1" covering	EA	8.75	2.12
3780	Pipe insulation protection saddle, 1" pipe, 1" covering	EA	8.75	2.12
3790	Pipe insulation protection saddle, 1.25" pipe, 1" covering	EA	8.75	2.12
3800	Pipe insulation protection saddle, 1.5" pipe, 1" covering	EA	9.16	2.12
3810	Pipe insulation protection saddle, 2" pipe, 1" covering	EA	10.28	2.12
3820	Pipe insulation protection saddle, 2.5" pipe, 1" covering	EA	10.43	2.12
3830	Pipe insulation protection saddle, 3" pipe, 1" covering	EA	11.45	2.12
3850	Pipe insulation protection saddle, 4" pipe, 1" covering	EA	12.15	2.12
15190 3855 1-1/2" Covering				
3940	Pipe insulation protection saddle, 1.5" pipe, 1.5" covering	EA	9.76	2.12
3950	Pipe insulation protection saddle, 2" pipe, 1.5" covering	EA	10.60	2.12
3960	Pipe insulation protection saddle, 2.5" pipe, 1.5" covering	EA	11.70	2.12
3970	Pipe insulation protection saddle, 3" pipe, 1.5" covering	EA	11.70	2.12
3990	Pipe insulation protection saddle, 4" pipe, 1.5" covering	EA	12.04	2.12
4010	Pipe insulation protection saddle, 6" pipe, 1.5" covering	EA	15.33	2.12
4020	Pipe insulation protection saddle, 8" pipe, 1.5" covering	EA	18.25	2.12
4022	Pipe insulation protection saddle, 10" pipe, 1.5" covering	EA	36.88	2.12
4024	Pipe insulation protection saddle, 12" pipe, 1.5" covering	EA	51.63	2.12
15190 4028 2" Covering				
4029	Pipe insulation protection saddle, 2.5" pipe, 2" covering	EA	21.38	2.12
4032	Pipe insulation protection saddle, 3" pipe, 2" covering	EA	24.45	2.12
4033	Pipe insulation protection saddle, 4" pipe, 2" covering	EA	24.63	2.12
4034	Pipe insulation protection saddle, 6" pipe, 2" covering	EA	33.21	2.12
4035	Pipe insulation protection saddle, 8" pipe, 2" covering	EA	38.41	2.12
4080	Pipe insulation protection saddle, 10" pipe, 2" covering	EA	40.14	2.12
4090	Pipe insulation protection saddle, 12" pipe, 2" covering	EA	57.12	2.12
4100	Pipe insulation protection saddle, 14" pipe, 2" covering	EA	57.12	2.12
4110	Pipe insulation protection saddle, 16" pipe, 2" covering	EA	78.02	2.12
15190 4186 2-1/2" Covering				
4187	Pipe insulation protection saddle, 3" pipe, 2.5" covering	EA	24.13	2.12
4188	Pipe insulation protection saddle, 4" pipe, 2.5" covering	EA	25.95	2.12
4189	Pipe insulation protection saddle, 6" pipe, 2.5" covering	EA	37.18	2.12
4190	Pipe insulation protection saddle, 8" pipe, 2.5" covering	EA	44.69	2.12
4191	Pipe insulation protection saddle, 10" pipe, 2.5" covering	EA	48.82	2.12
4192	Pipe insulation protection saddle, 12" pipe, 2.5" covering	EA	63.68	2.12
4193	Pipe insulation protection saddle, 14" pipe, 2.5" covering	EA	64.52	2.12
4194	Pipe insulation protection saddle, 16" pipe, 2.5" covering	EA	92.05	2.12
4195	Pipe insulation protection saddle, 18" pipe, 2.5" covering	EA	99.16	2.12
15190 4200 Sockets				
15190 4210 Rod end, malleable iron				
4230	Pipe hangers & supports, 3/8" thread size, sockets, rod end,	EA	2.03	0.91
4240	Pipe hangers & supports, 1/2" thread size, sockets, rod end,	EA	2.21	0.87
4250	Pipe hangers & supports, 5/8" thread size, sockets, rod end,	EA	3.50	0.98
4260	Pipe hangers & supports, 3/4" thread size, sockets, rod end,	EA	4.38	0.99
4270	Pipe hangers & supports, 7/8" thread size, sockets, rod end,	EA	5.39	0.94
15190 4289 Strap				
4290	Pipe hangers & supports, strap, 1/2" pipe	EA	5.38	1.81
4300	Pipe hangers & supports, strap, 3/4" pipe	EA	5.48	2.13
4310	Pipe hangers & supports, strap, 1" pipe	EA	5.58	2.06
4320	Pipe hangers & supports, strap, 1.25" pipe	EA	5.87	2.02
4330	Pipe hangers & supports, strap, 1.5" pipe	EA	6.37	2.27
4340	Pipe hangers & supports, strap, 2" pipe	EA	6.51	2.20
4350	Pipe hangers & supports, strap, 2.5" pipe	EA	8.22	2.13
4360	Pipe hangers & supports, strap, 3" pipe	EA	8.69	2.09
15190 4400 U-bolt, carbon steel				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4420	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1/2" pipe	EA	2.59	0.60
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.05	
4430	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 3/4" pipe	EA	2.65	0.72
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.11	
4450	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1" pipe	EA	2.76	0.68
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.16	
4460	Pipe hangers & supports, 1.25" pipe, U-bolt, CS, std, w/nuts	EA	2.91	0.68
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.31	
4470	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 1.5" pipe	EA	3.01	0.80
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.34	
4480	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 2" pipe	EA	3.09	0.76
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		1.37	
4490	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 2.5" pipe	EA	3.75	0.83
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		2.24	
4500	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 3" pipe	EA	3.94	0.91
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		2.37	
4520	Pipe hangers & supports, U-bolt, CS, std, w/nuts, 4" pipe	EA	4.24	1.02
4580	<i>Pipe hanger, u-bolt, CS, std, w/nuts, for plstc ctg on 1/2" - 6", add</i>		2.48	
15190 4600	Pipe Supports, Welded Steel Bracket			
4610	Light Welded Stl Bracket, 12" W Type 31, #2 Plain	EA	36.20	3.40
4620	Medium Welded Stl Bracket, 12" W Type 31, #2 Plain	EA	79.20	3.40
4630	Heavy Welded Stl Bracket, 12" W Type 31, #2 Plain	EA	107.21	3.40
15190 5000	Hanger			
Note: Assembly Includes Hanger, Rod, Saddle, Clamps, Etc. Not For Use Where Detail Is Available.				
5010	1/2" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	58.59	23.61
5020	1" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	61.15	23.38
5030	2" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	67.68	22.94
5040	3" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	65.32	19.76
5050	4" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	81.49	25.08
5060	6" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	89.98	26.12
5070	8" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	100.46	30.27
5080	10" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	124.00	29.21
5090	12" Hanger for Insulated Pipe Incl Hanger, Rod, Saddle&Clamp	EA	148.40	28.55
15191 Valves				
15191 1000	T&P Pressure Relief Valve, Bronze Body, Threaded			
1001	1/2"x1/2" Brz T&P Press Rlf Vlv, Thrd	EA	68.08	
1002	3/4"x3/4" Brz T&P Press Rlf Vlv, Thrd	EA	87.45	
1003	1"x1" Brz T&P Press Relief Vlv, Thrd	EA	125.16	
1004	1-1/4" x 1-1/4" Brz T&P PRV, Thrd	EA	241.02	
1005	1-1/2" x 1-1/2" Brz T&P PRV, Thrd	EA	415.39	
1006	2"x2" Brz T&P Press Relief Vlv, Thrd	EA	463.35	
15191 2000	Steam Temperature Regulator - Iron Body			
15191 2100	Steam Temperature Regulator - Iron Body			
Note: Single Seated Spring Loaded Direct Acting Diaphragm Valve, Up To 150 Psi				
2101	1/2" Temp Regulator Valve-Thrd Iron Construction	EA	724.02	
2102	3/4" Temp Regulator Valve-Thrd Iron Construction	EA	811.96	
2103	1" Temp Regulator Valve-Thrd Iron Construction	EA	899.16	
2104	1-1/4" Temp Regulator Vlv-Thrd Iron Construction	EA	904.35	
2105	1-1/2" Temp Regulator Vlv-Thrd Iron Construction	EA	1,064.51	
2106	2" Temp Regulator Valve-Thrd Iron Construction	EA	1,296.15	
2107	2-1/2" Temp Regulator Valve Flanged - Iron Construction	EA	1,646.76	
2108	3" Temp Regulator Valve Flanged - Iron Construction	EA	1,874.25	
2109	4" Temp Regulator Valve Flanged - Iron Construction	EA	2,695.93	
2111	6" Temp Regulator Valve Flanged - Iron Construction	EA	5,323.95	
15191 2200	Steam Temperature Regulator - Iron Body			
Note: Single Seated Spring Loaded Reverse Acting Diaphragm Valve.				
2201	1/2" Temp Regulator Valve-Thrd Iron Construction	EA	1,093.97	
2202	3/4" Temp Regulator Valve-Thrd Iron Construction	EA	1,282.17	
2203	1" Temp Regulator Valve-Thrd Iron Construction	EA	1,707.27	
2204	1-1/4" Temp Regulator Vlv-Thrd Iron Construction	EA	2,139.84	
2205	1-1/2" Temp Regulator Vlv-Thrd Iron Construction	EA	2,194.63	
2206	2" Temp Regulator Valve-Thrd Iron Construction	EA	2,203.28	
2207	2-1/2" Temp Regulator Valve Flanged - Iron Construction	EA	3,504.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2208	3" Temp Regulator Valve Flanged - Iron Construction	EA	4,273.80	
2209	4" Temp Regulator Valve Flanged - Iron Construction	EA	8,033.27	
2211	6" Temp Regulator Valve Flanged - Iron Construction	EA	11,525.51	
15191 2300	Steam Temperature Regulator - Iron Body			
	Note: Double Seated Spring Loaded Direct Acting Diaphragm Valve.			
2301	1/2" Temp Regulator Valve-Thrd Iron Construction	EA	1,471.18	
2302	3/4" Temp Regulator Valve-Thrd Iron Construction	EA	1,647.10	
2303	1" Temp Regulator Valve-Thrd Iron Construction	EA	1,821.83	
2304	1-1/4" Temp Regulator Vlv-Thrd Iron Construction	EA	1,827.02	
2305	1-1/2" Temp Regulator Vlv-Thrd Iron Construction	EA	2,150.20	
2306	2" Temp Regulator Valve-Thrd Iron Construction	EA	2,624.04	
2307	2-1/2" Temp Regulator Valve Flanged - Iron Construction	EA	3,315.29	
2308	3" Temp Regulator Valve Flanged - Iron Construction	EA	3,776.10	
2309	4" Temp Regulator Valve Flanged - Iron Construction	EA	5,372.59	
2311	6" Temp Regulator Valve Flanged - Iron Construction	EA	10,732.99	
15191 2400	Steam Temperature Regulator - Iron Body			
	Note: Double Seated Spring Loaded Reverse Acting Diaphragm Valve.			
2401	1/2" Temp Regulator Valve-Thrd Iron Construction	EA	1,882.61	
2402	3/4" Temp Regulator Valve-Thrd Iron Construction	EA	2,112.38	
2403	1" Temp Regulator Valve-Thrd Iron Construction	EA	2,335.87	
2404	1-1/4" Temp Regulator Vlv-Thrd Iron Construction	EA	2,504.55	
2405	1-1/2" Temp Regulator Vlv-Thrd Iron Construction	EA	2,756.58	
2406	2" Temp Regulator Valve-Thrd Iron Construction	EA	3,372.45	
2407	2-1/2" Temp Regulator Valve Flanged - Iron Construction	EA	4,244.83	
2408	3" Temp Regulator Valve Flanged - Iron Construction	EA	4,835.75	
2409	4" Temp Regulator Valve Flanged - Iron Construction	EA	6,863.79	
2411	6" Temp Regulator Valve Flanged - Iron Construction	EA	13,746.42	
15192 0010	Valves, brass			
15192 0500	Gas cocks, threaded			
0540	Valves, brass, gas cocks, threaded, 3/4" size	EA	26.70	
0560	Valves, brass, gas cocks, threaded, 1.25" size	EA	44.88	
0580	Valves, brass, gas cocks, threaded, 2" size	EA	96.05	
15192 8210	Brass FH Gas Stops			
8220	3/8" Gas Stop, Brass	EA	18.63	
8230	1/2" Gas Stop, Brass	EA	18.33	
8240	3/4" Gas Stop, Brass	EA	24.51	
8250	1" Gas Stop, Brass	EA	32.02	
8260	1-1/4" Gas Stop, Brass	EA	45.65	
8270	1-1/2" Gas Stop, Brass	EA	57.82	
8280	2" Gas Stop, Brass	EA	83.34	
15192 8300	Iron Body Gas Stops			
8310	1/2" Gas Stop, Iron Body	EA	22.15	
8320	3/4" Gas Stop, Iron Body	EA	27.50	
8330	1" Gas Stop, Iron Body	EA	35.97	
8340	1-1/4" Gas Stop, Iron Body	EA	46.14	
8350	1-1/2" Gas Stop, Iron Body	EA	58.54	
8360	2" Gas Stop, Iron Body	EA	77.61	
8370	2-1/2" Gas Stop, Iron Body	EA	148.94	
8380	3" Gas Stop, Iron Body	EA	202.32	
15193 0010	Valves, bronze			
15193 1020	Angle, 150 lb, rising stem threaded			
1030	1/8"Brz Angle Globe Vlv,Thr 125# Brazed or Soldered Connection	EA	32.49	3.27
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		2.24	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		4.87	
1040	1/4"Brz Angle Globe Vlv,Thr 125# Brazed or Soldered Connection	EA	32.49	3.27
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		2.24	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		4.87	
1050	Valves, bronze, 3/8" size, angle, 150 lb, rising stem	EA	50.56	5.18
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		3.16	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		7.58	
1060	Valves, bronze, 1/2" size, angle, 150 lb, rising stem	EA	51.70	5.03
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		3.27	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		7.76	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1070	Valves, bronze, 3/4" size, angle, 150 lb, rising stem	EA	66.91	5.26
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		4.10	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		10.04	
1080	Valves, bronze, 1" size, angle, 150 lb, rising stem threaded	EA	91.05	5.60
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		5.35	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		13.66	
1090	1-1/4"Brz Angle Glb Vlv,Thr 125# Brazed or Soldered Connection	EA	83.67	3.84
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		5.45	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		12.55	
1100	Valves, bronze, 1.5" size, angle, 150 lb, rising stem	EA	153.15	6.69
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		8.82	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		22.97	
1110	Valves, bronze, 2" size, angle, 150 lb, rising stem threaded	EA	231.24	7.68
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		12.94	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		34.69	
1120	2-1/2"Brz Angle Glb Vlv,Thr 125# Brazed or Soldered Connection	EA	235.43	14.14
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		14.31	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		35.31	
1130	3"Brz Angle Globe Valve,Thr 125# Brazed or Soldered Connection	EA	638.61	16.39
1200	Valves, angle, bronze, 150 lb rising stem for 200 lb, add		34.86	
1210	Valves, angle, bronze, 150 lb rising stem for 300 lb, add		95.79	
15193 1750	Check, swing, class 150, regrinding disc, thd			
1800	Valves, bronze, 1/8", chk, swing, CL 150, regrinding disk, Thrd	EA	39.76	3.06
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		2.56	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		5.96	
1830	Valves, bronze, 1/4", chk, swing, CL 150, regrinding disk, thrd	EA	17.74	2.95
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		1.46	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		2.66	
1840	Valves, bronze, 3/8", chk, swing, CL 150, regrinding disc,	EA	31.62	3.41
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		2.21	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		4.74	
1850	Valves, bronze, 1/2", chk, swing, CL 150, regrinding disc,	EA	31.62	3.33
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		2.21	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		4.74	
1860	Valves, bronze, 3/4", chk, swing, CL 150, regrinding disc,	EA	42.29	4.05
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		2.87	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		6.34	
1870	Valves, bronze, 1", chk, swing, CL 150, regrinding disc, thd	EA	56.25	5.33
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		3.61	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		8.44	
1890	Valves, bronze, 1.5", chk, swing, CL 150, regrinding disc,	EA	89.91	6.31
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		5.66	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		13.49	
1900	Valves, bronze, 2", chk, swing, CL 150, regrinding disc, thd	EA	125.13	7.15
2000	Valves, bronze, swing check, 150 lb, for 200 lb, add		7.63	
2040	Valves, bronze, swing check, 150 lb, for 300 lb, add		18.77	
15193 2850	Gate, NRS, 125 lb, soldered			
2898	1/4" Bronze 125# Gate Valve Threaded,Brazed or Soldered	EA	21.67	3.42
3100	Valves, bronze, gate, NRS, 125lb soldered, for 150lb rated valves, add		3.44	
3110	Valves, bronze, gate, NRS, 125lb soldered, for 200lb rated valves, add		6.87	
3120	Valves, bronze, gate, NRS, 125lb soldered, for 300lb rated valves, add		11.25	
3130	Valves, bronze, gate, NRS, 125lb, soldered, for chain operated, add		1.41	
2900	Valves, bronze, gate, NRS, soldered, 125 PSI, 3/8" size	EA	34.35	4.62
3100	Valves, bronze, gate, NRS, 125lb soldered, for 150lb rated valves, add		7.15	
3110	Valves, bronze, gate, NRS, 125lb soldered, for 200lb rated valves, add		14.31	
3120	Valves, bronze, gate, NRS, 125lb soldered, for 300lb rated valves, add		23.63	
3130	Valves, bronze, gate, NRS, 125lb, soldered, for chain operated, add		3.26	
2920	Valves, bronze, gate, NRS, soldered, 125 PSI, 1/2" size	EA	31.73	4.50
3100	Valves, bronze, gate, NRS, 125lb soldered, for 150lb rated valves, add		6.37	
3110	Valves, bronze, gate, NRS, 125lb soldered, for 200lb rated valves, add		12.73	
3120	Valves, bronze, gate, NRS, 125lb soldered, for 300lb rated valves, add		21.01	
3130	Valves, bronze, gate, NRS, 125lb, soldered, for chain operated, add		2.87	
2940	Valves, bronze, gate, NRS, soldered, 125 PSI, 3/4" size	EA	37.22	4.54
3100	Valves, bronze, gate, NRS, 125lb soldered, for 150lb rated valves, add		7.38	
3110	Valves, bronze, gate, NRS, 125lb soldered, for 200lb rated valves, add		14.77	
3120	Valves, bronze, gate, NRS, 125lb soldered, for 300lb rated valves, add		24.36	
3130	Valves, bronze, gate, NRS, 125lb, soldered, for chain operated, add		3.31	
2950	Valves, bronze, gate, NRS, soldered, 125 PSI, 1" size	EA	46.98	4.50

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		10.11	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		20.23	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		33.45	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		4.66	
2952	1-1/4" Bronze 125# Gate Valve Threaded, Brazed or Soldered	EA	53.33	3.99
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		9.66	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		19.32	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		31.78	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		4.20	
2970	Valves, bronze, gate, NRS, soldered, 125 PSI, 1.5" size	EA	73.64	5.22
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		16.27	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		32.55	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		53.86	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		7.56	
2980	Valves, bronze, gate, NRS, soldered, 125 PSI, 2" size	EA	97.68	5.98
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		22.43	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		44.85	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		74.30	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		10.53	
2982	2-1/2" Bronze 125# Gate Valve Threaded, Brazed or Soldered	EA	158.56	10.01
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		36.18	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		72.35	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		119.83	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		16.95	
2984	3" Bronze 125# Gate Valve Threaded, Brazed or Soldered	EA	189.42	11.59
3100	Valves, bronze, gate, NRS, 1251b soldered, for 1501b rated valves, add		43.68	
3110	Valves, bronze, gate, NRS, 1251b soldered, for 2001b rated valves, add		87.36	
3120	Valves, bronze, gate, NRS, 1251b soldered, for 3001b rated valves, add		144.73	
3130	Valves, bronze, gate, NRS, 1251b, soldered, for chain operated, add		20.53	
15193 3600	Gate, 150 lb, flanged			
3610	Valves, gate, bronze, 150 lb, flanged, 1" size	EA	353.09	20.69
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		46.48	
3612	1-1/4" Brz Flg Gate Valve-150#	EA	250.30	25.46
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		30.71	
3620	Valves, gate, bronze, 150 lb, flanged, 1.5" size	EA	434.53	24.13
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		57.62	
3630	Valves, gate, bronze, 150 lb, flanged, 2" size	EA	629.56	29.04
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		85.36	
3632	2-1/2" Brz Flg Gate Valve-150#	EA	602.75	46.49
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		75.76	
3634	3" Brz Flanged Gate Valve-150#	EA	725.39	52.77
3700	Valves, bronze, gate, 150 lb flanged, for chain operated type, add		91.72	
15193 4850	Globe, rising stem threaded			
15193 4850 Class 150				
4910	1/8"Globe Valve, Bronze, Thrd 125#	EA	35.49	3.23
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		7.03	
4920	1/4"Globe Valve, Bronze, Thrd 125#	EA	37.12	3.23
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		7.44	
4940	Valves, bronze, 3/8" size, globe, class 150, rising stem	EA	41.81	3.56
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		8.56	
4950	Valves, bronze, 1/2" size, globe, class 150, rising stem	EA	41.81	4.01
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		8.56	
4960	Valves, bronze, 3/4" size, globe, class 150, rising stem	EA	54.69	4.39
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		11.40	
4970	Valves, bronze, 1" size, globe, class 150, rising stem threaded	EA	77.47	5.10
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		16.98	
4980	1-1/4" Globe Valve, Brz, Thrd 125#	EA	70.86	3.88
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		13.91	
4990	Valves, bronze, 1.5" size, globe, class 150, rising stem	EA	140.41	6.88
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		31.61	
5000	Valves, bronze, 2" size, globe, class 150, rising stem threaded	EA	204.07	7.98
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		46.89	
5010	2-1/2" Globe Valve, Brz, Thrd 125#	EA	158.88	10.90
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		32.88	
5020	3" Globe Valve, Bronze, Thrd 125#	EA	573.72	13.16
5110	Valves, bronze, globe, RS, 150 lb threaded, for 200 lb threaded, add		135.54	
15193 5121	Class 300			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5122	Valves, bronze, 1/2" dia, globe, class 300, rising stem threaded	EA	57.55	3.82
5124	Valves, bronze, 3/4" dia, globe, class 300, rising stem threaded	EA	74.47	4.24
5125	Valves, bronze, 1" dia, globe, class 300, rising stem threaded	EA	108.24	4.12
5126	Valves, bronze, 1.25" dia, globe, class 300, rising stem	EA	165.32	5.22
5127	Valves, bronze, 1.5" dia, globe, class 300, rising stem threaded	EA	198.98	5.63
5128	Valves, bronze, 2" dia, globe, class 300, rising stem threaded	EA	292.35	6.62
15193 5600 Relief, pressure & temp, self-closing, threaded				
15193 5600 ASME				
5640	Valves, bronze, 3/4", relief, thd, pressure & temp,	EA	69.10	2.84
5650	Valves, bronze, 1", relief, thd, pressure & temp, self-close,	EA	102.02	3.25
5652	1-1/4" x 1-1/4" Brz PRV, Thrd	EA	73.51	6.77
5670	Valves, bronze, 1.5", relief, thd, pressure & temp,	EA	378.99	4.16
5672	2-1/2" x 2-1/2" Brz PRV, Thrd	EA	249.74	12.20
15193 5949 Poppet type, threaded				
6000	Valves, bronze, 1/2", relief, pressure, poppet type, threaded	EA	23.59	2.23
6040	Valves, bronze, 3/4", relief, pressure, poppet type, threaded	EA	50.71	4.77
15193 6400 Water, ASME, threaded				
6450	Valves, bronze, 1", relief, pressure, water, ASME, threaded	EA	95.04	4.62
6470	Valves, bronze, 1.5", relief, pressure, water, ASME, threaded	EA	203.26	3.52
6480	Valves, bronze, 2", relief, pressure, water, ASME, threaded	EA	288.34	6.01
15193 6900 Reducing, water pressure				
7740	Valves, brz, 1/2", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	110.51	3.25
7920	Valves, bronze, reducing, for higher pressure, add		24.48	
7780	Valves, brz, 3/4", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	113.03	2.91
7920	Valves, bronze, reducing, for higher pressure, add		24.48	
7790	Valves, brz, 1", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	167.58	3.21
7920	Valves, bronze, reducing, for higher pressure, add		37.92	
7800	Valves, brz, 1.25", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	290.67	3.40
7920	Valves, bronze, reducing, for higher pressure, add		67.63	
7810	Valves, brz, 1.5", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	430.72	4.01
7920	Valves, bronze, reducing, for higher pressure, add		101.86	
7820	Valves, brz, 2", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	621.71	4.69
7920	Valves, bronze, reducing, for higher pressure, add		148.55	
7840	Valves, brz, 3", rdcg, hi cap, 250 PSI to 25-75 PSI, thd	EA	960.25	6.43
7920	Valves, bronze, reducing, for higher pressure, add		230.61	
15193 8350 Tempering water				
15193 8350 Sweat connections				
8400	Valves, bronze, 1/2", tempering, water, sweat connections	EA	42.94	3.25
8440	Valves, bronze, 3/4", tempering, water, sweat connections	EA	50.90	3.93
15193 8650 Threaded connections				
Note: Adjusting Rod, Direct Action, Spring Opened, W/6 Ft Capillary Tube And Temperature Dial				
8740	Valves, bronze, 3/4", tempering, water, threaded connections	EA	219.54	5.75
8750	Valves, bronze, 1", tempering, water, threaded connections	EA	239.96	6.05
8752	1-1/4" Tempering Controller For Potable Hot Water	EA	839.86	23.65
8770	Valves, bronze, 1.5", tempering, water, threaded connections	EA	320.94	9.42
15194 0010 Valves, iron body				
Note: 125 Lb Rating				
15194 0100 Angles, 125 lb Soldered Connection 125 Lb Rating				
0115	3"IB Angle Globe Vlv, Flg, 125#	EA	724.23	52.77
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		1,231.99	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		91.55	
0116	Valves, angle, iron body, 125 lb flanged, 2" size	EA	551.15	34.98
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		987.33	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		73.60	
0117	2-1/2"IB Angle Globe Vlv, Fl, 125#	EA	615.56	46.45
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		1,045.57	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		77.69	
0118	Valves, angle, iron body, 125 lb flanged, 4" size	EA	1,004.13	66.10
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		1,648.72	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		122.24	
0119	5"IB Angle Globe Vlv, Flg, 125#	EA	1,715.23	78.64
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		3,139.72	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		234.33	
0120	Valves, angle, iron body, 125 lb flanged, 6" size	EA	1,881.69	94.35

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		3,212.23	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		238.74	
0122	Valves, angle, iron body, 125 lb flanged, 8" size	EA	3,053.41	108.09
0200	Valves, iron body, angle, 125 lb flanged, for 250 lb flanged, add		5,445.43	
0210	Valves, iron body, angle, 125lb flanged, for chain operated type, add		405.80	
15194 0799 Butterfly, lug type, gear operated				
15194 0799 200 lb				
0800	Valves, IB, gear operated, 2.5", butterfly, 200 lb, 200 PSI, lug	EA	261.15	18.95
0820	Valves, IB, gear operated, 4", butterfly, 200 lb, 200 PSI, lug	EA	318.11	28.60
0822	5"CI Butterfly Vlv, w/Bronze Disc Gear Operated, 200 PSI	EA	244.75	24.58
0840	Valves, IB, gear operated, 6", butterfly, 200 lb, 200 PSI, lug	EA	490.67	57.55
0850	Valves, IB, gear operated, 8", butterfly, 200 lb, 200 PSI, lug	EA	559.25	87.39
0860	Valves, IB, gear operated, 10", butterfly, 200 lb, 200 PSI, lug	EA	691.22	110.12
0870	Valves, IB, gear operated, 12", butterfly, 200 lb, 200 PSI, lug	EA	977.66	162.66
15194 0899 150 lb				
0900	Valves, IB, gear operated, 18", butterfly, 150 lb, 200 PSI, lug	EA	1,779.43	42.71
0910	14"CI B' fly Valve, w/Bronze Disc Gear Operated, 150 PSI	EA	2,064.07	74.13
0920	16"CI B' fly Valve, w/Bronze Disc Gear Operated, 150 PSI	EA	2,738.52	86.65
0930	Valves, IB, gear operated, 24", butterfly, 150 lb, 200 PSI, lug	EA	5,305.75	139.31
0940	20"CI B' fly Valve, w/Bronze Disc Gear Operated, 150 PSI	EA	4,272.61	103.36
15194 1020 Butterfly, wafer type, gear actuator, 200 lb				
1110	Valves, IB, 12", 200 lb, wafer type, gear actuator, butterfly	EA	612.65	145.04
15194 1200 Butterfly, wafer type, lever actuator, 200 lb 150 Psi Cwp Wafer Type				
1220	Valves, IB, lever actuator, 2", 200 lb, butterfly, wafer type	EA	103.95	12.90
1222	2-1/2"CI B' fly Vlv, w/Iron Disc w/On-Off Hdl, 150 PSI CWP w/Wafer	EA	109.09	14.83
1224	3"CI Butterfly Vlv, w/Iron Disc w/On-Off Hdl, 150 PSI CWP w/Wafer	EA	126.86	18.56
1250	Valves, IB, lever actuator, 4", 200 lb, butterfly, wafer type	EA	224.74	30.48
1252	5"CI Butterfly Vlv, w/Iron Disc w/On-Off Hdl, 150 PSI CWP w/Wafer	EA	227.98	24.68
1270	Valves, IB, lever actuator, 6", 200 lb, butterfly, wafer type	EA	358.25	46.78
1280	Valves, IB, lever actuator, 8", 200 lb, butterfly, wafer type	EA	466.72	67.84
1290	Valves, IB, lever actuator, 10", 200 lb, butterfly, wafer type	EA	682.73	75.38
1300	Valves, IB, lever actuator, 12", 200 lb, butterfly, wafer type	EA	946.25	82.17
15194 1600 Gate, threaded, 125 lb				
1604	Valves, iron body, gate, 125 lb, threaded, 1.5"	EA	183.99	12.67
1630	Valves, iron body, gate, 125 lb threaded, for 250 lb threaded, add		323.77	
1640	Valves, iron body, gate, 125lb threaded, for chain operated type, add		24.11	
1605	Valves, iron body, gate, 125 lb, threaded, 2"	EA	425.18	15.32
1630	Valves, iron body, gate, 125 lb threaded, for 250 lb threaded, add		798.09	
1640	Valves, iron body, gate, 125lb threaded, for chain operated type, add		59.65	
1606	2-1/2" Iron Body Gate Valve, Thrd 125# Bronze Md w/Threaded Valv	EA	279.25	26.31
1630	Valves, iron body, gate, 125 lb threaded, for 250 lb threaded, add		462.19	
1640	Valves, iron body, gate, 125lb threaded, for chain operated type, add		34.28	
1607	Valves, iron body, gate, 125 lb, threaded, 4"	EA	576.34	31.47
1630	Valves, iron body, gate, 125 lb threaded, for 250 lb threaded, add		1,037.71	
1640	Valves, iron body, gate, 125lb threaded, for chain operated type, add		77.37	
1608	3" Iron Body Gate Valve, Thrd 125# Bronze Md w/Threaded Valve	EA	358.37	28.09
1630	Valves, iron body, gate, 125 lb threaded, for 250 lb threaded, add		605.61	
1640	Valves, iron body, gate, 125lb threaded, for chain operated type, add		44.98	
15194 1650 Gate, 125 lb, NRS, flanged				
2198	1-1/2" Iron Body Gate Valve, NRS	EA	361.97	29.39
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		607.43	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		45.10	
2200	Valves, iron body, gate, 125 lb, NRS, flanged, 2" size	EA	345.73	39.33
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		576.49	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		42.78	
2202	2-1/2" Iron Body Gate Valve, NRS	EA	255.54	37.12
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		402.84	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		29.79	
2204	3" Iron Body Gate Valve, NRS	EA	293.85	40.10
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		469.62	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		34.76	
2280	Valves, iron body, gate, 125 lb, NRS, flanged, 4" size	EA	658.93	115.74
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		958.32	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		70.46	
2282	5" Iron Body Gate Valve, NRS	EA	712.15	80.81

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		1, 133. 56	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		83. 87	
2300	Valves, iron body, gate, 125 lb, NRS, flanged, 6" size	EA	1, 340. 40	142. 65
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		2, 129. 65	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		157. 55	
2320	Valves, iron body, gate, 125 lb, NRS, flanged, 8" size	EA	1, 734. 57	174. 34
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		2, 807. 75	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		207. 97	
2340	Valves, iron body, gate, 125 lb, NRS, flanged, 10" size	EA	2, 828. 95	210. 09
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		4, 906. 34	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		365. 01	
2360	Valves, iron body, gate, 125 lb, NRS, flanged, 12" size	EA	3, 850. 75	251. 03
2420	Valves, iron body, gate, 125 lb flanged, NRS, for 250 lb flanged, add		6, 728. 87	
2430	Valves, iron body, gate, 125lb flanged, NRS, for chain operated, add		500. 83	
15194 2460 Gate valve				
15194 2460 Lug, lever type, 125 lb				
2462	Gate valve, iron body, lug, lever type, 125 lb, 3/4"	EA	509. 20	8. 81
2464	Gate valve, iron body, lug, lever type, 125 lb, 1"	EA	578. 31	10. 21
15194 3500 OS&Y, 125 lb, threaded				
3506	Valves, gate, iron body, OS&Y, 125 lb, threaded, 1.5" size	EA	124. 93	16. 98
3540	Valves, gate, iron body, OS&Y, 125lb threaded, for 175lb, threaded, add		256. 48	
3545	Valves, gate, iron body, OS&Y, 125lb threaded, for 250lb, threaded, add		205. 65	
3507	Valves, gate, iron body, OS&Y, 125 lb, threaded, 2" size	EA	189. 36	8. 70
3540	Valves, gate, iron body, OS&Y, 125lb threaded, for 175lb, threaded, add		407. 38	
3545	Valves, gate, iron body, OS&Y, 125lb threaded, for 250lb, threaded, add		326. 45	
15194 3550 OS&Y, 125 lb, flanged				
3558	Valves, iron body, gate, 125 lb, OS&Y, flanged, 1.5" size	EA	139. 56	26. 44
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		183. 30	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		227. 87	
3600	Valves, iron body, gate, 125 lb, OS&Y, flanged, 2" size	EA	205. 38	36. 31
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		295. 79	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		368. 23	
3601	2-1/2" IB Gate Vlv, OS&Y, Thrd 125#	EA	372. 05	29. 31
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		647. 79	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		808. 47	
3602	2-1/2" Iron Body, Brz Md, Gate Vlv 125 # Flanged	EA	268. 61	31. 96
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		428. 98	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		534. 80	
3603	3" IB Gate Vlv, OS & Y, Thrd 125#	EA	413. 08	31. 63
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		715. 03	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		892. 32	
3604	3" Iron Body, Brz Md, Flg, Gate Vlv 125 #	EA	299. 42	28. 44
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		480. 76	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		599. 39	
3680	Valves, iron body, gate, 125 lb, OS&Y, flanged, 4" size	EA	429. 17	100. 23
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		498. 80	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		618. 77	
3682	5" Iron Body, Brz Md, Flg, Gate Vlv 125 #	EA	719. 96	80. 74
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		1, 149. 18	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		1, 432. 65	
3700	Valves, iron body, gate, 125 lb, OS&Y, flanged, 6" size	EA	686. 21	97. 72
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		821. 27	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		1, 019. 33	
3720	Valves, iron body, gate, 125 lb, OS&Y, flanged, 8" size	EA	1, 055. 48	140. 18
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		1, 449. 57	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		1, 803. 26	
3740	Valves, iron body, gate, 125 lb, OS&Y, flanged, 10" size	EA	1, 697. 14	201. 89
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		2, 642. 72	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		3, 293. 51	
3760	Valves, iron body, gate, 125 lb, OS&Y, flanged, 12" size	EA	2, 237. 92	277. 46
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		3, 503. 21	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		4, 366. 22	
3762	14" Iron Body, Brz Md, Gate Valve 125# Flanged	EA	4, 874. 08	172. 40
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		9, 141. 60	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		11, 419. 02	
3764	16" Iron Body, Brz Md, Gate Valve 125# Flanged	EA	6, 457. 44	199. 53
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		12, 156. 69	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		15,185.88	
3790	Valves, iron body, gate, 125 lb, OS&Y, flanged, 18" size	EA	8,020.14	332.32
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		13,973.46	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		17,439.63	
3792	20" Iron Body, Brz Md, Gate Valve 125# Flanged	EA	8,887.36	224.47
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		16,826.96	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		21,021.23	
3830	Valves, iron body, gate, 125 lb, OS&Y, flanged, 24" size	EA	16,114.48	765.81
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		28,922.05	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		36,109.05	
3832	Valves, iron body, gate, 125 lb, OS&Y, flanged, 30" size	EA	42,309.95	805.41
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		81,025.42	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		101,234.48	
3834	Valves, iron body, gate, 125 lb, OS&Y, flanged, 36" size	EA	58,216.17	1,087.80
3900	Valves, gate, iron body, OS&Y, 125lb flanged, for 250lb, flanged, add		112,674.48	
3980	Valves, gate, iron body, OS&Y, 125lb flanged, for 175lb, flanged, add		140,793.66	
15194 4100 Globe, 150 lb, flanged				
4120	Valves, iron body, globe, 150 lb flanged, 3" size	EA	820.16	63.86
4130	Valves, iron body, globe, 150 lb flanged, 4" size	EA	1,183.04	98.88
15194 4350 Globe, OS&Y, 125 lb				
15194 4352 Threaded				
4354	2" IB Globe Vlv, Thrd OS&Y-125PSI	EA	224.83	14.86
4380	Valves, iron body, globe, 125 lb threaded, for 250 lb threaded, add		100.32	
4390	Valves, iron body, globe, 125 lb threaded, for chain operated, add		28.54	
4356	2-1/2" IB Glb Vlv, Thrd OS&Y-125PSI	EA	279.80	19.55
4380	Valves, iron body, globe, 125 lb threaded, for 250 lb threaded, add		123.95	
4390	Valves, iron body, globe, 125 lb threaded, for chain operated, add		35.13	
4357	3" IB Globe Vlv, Thrd OS&Y-125PSI	EA	333.66	23.17
4380	Valves, iron body, globe, 125 lb threaded, for 250 lb threaded, add		148.43	
4390	Valves, iron body, globe, 125 lb threaded, for chain operated, add		42.16	
4358	Valves, iron body, 4" size, globe, OS&Y, class 125, threaded	EA	926.26	20.76
4380	Valves, iron body, globe, 125 lb threaded, for 250 lb threaded, add		446.57	
4390	Valves, iron body, globe, 125 lb threaded, for chain operated, add		131.84	
15194 4540 Flanged				
4550	Valves, iron body, globe, OS&Y, class 125, flanged, 2" size	EA	361.57	27.83
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		159.61	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		45.16	
4552	2-1/2" IB Glb Vlv, Flg OS&Y-125PSI	EA	264.45	26.25
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		112.29	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		31.12	
4554	3" IB Globe Valve, Flg OS&Y-125PSI	EA	311.13	29.88
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		133.81	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		37.35	
4580	Valves, iron body, globe, OS&Y, class 125, flanged, 4" size	EA	715.52	106.19
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		291.53	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		78.94	
4582	5" IB Globe Valve, Flg OS&Y-125PSI	EA	614.67	81.42
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		253.78	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		69.25	
4600	Valves, iron body, globe, OS&Y, class 125, flanged, 6" size	EA	1,191.57	142.61
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		494.26	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		135.22	
4610	Valves, iron body, globe, OS&Y, class 125, flanged, 8" size	EA	2,098.45	230.04
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		927.39	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		262.55	
4612	Valves, iron body, 10" size, globe, OS&Y, class 125, flanged	EA	4,308.80	193.84
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		2,015.95	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		586.99	
4614	Valves, iron body, 12" size, globe, OS&Y, class 125, flanged	EA	5,989.88	250.89
4630	Valves, iron body, globe, 125 lb flanged, for 250 lb flanged, add		2,815.77	
4640	Valves, iron body, globe, 125 lb flanged, for chain operated, add		821.70	
15194 5450 Swing check, 125 lb				
15194 5450 Threaded				
5500	Valves, iron body, swing check, 125 lb, threaded, 2" size	EA	185.96	12.14
15194 5950 Flanged				
5994	Valves, iron body, swing check, 125 lb, flanged, 1" size	EA	463.21	18.53

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
			848.62	
5998	Valves, iron body, swing check, 125 lb, flanged, 1.5" size	EA	644.79	21.64
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		1,198.81	
6000	Valves, iron body, swing check, 125 lb, flanged, 2" size	EA	239.34	27.23
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		369.76	
6060	Valves, iron body, swing check, 125 lb, flanged, 4" size	EA	575.18	79.05
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		809.75	
6070	Valves, iron body, swing check, 125 lb, flanged, 6" size	EA	947.66	107.44
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		1,373.18	
6080	Valves, iron body, swing check, 125 lb, flanged, 8" size	EA	1,239.61	106.32
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		1,852.64	
6090	Valves, iron body, swing check, 125 lb, flanged, 10" size	EA	1,917.80	124.59
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		3,123.59	
6100	Valves, iron body, swing check, 125 lb, flanged, 12" size	EA	2,883.28	145.91
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		4,845.12	
6110	Valves, iron body, swing check, 125 lb, flanged, 18" size	EA	17,967.12	350.78
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		34,729.28	
6114	Valves, iron body, swing check, 125 lb, flanged, 24" size	EA	33,291.37	436.90
6160	Valves, iron body, swg chk, 125 lb flanged, for 250 lb flanged, add		64,495.28	
15194 6600 Silent check, bronze trim				
15194 6610 Compact wafer type, flanges				
6640	Valves, IB, for 125 or 150 lb flg, 2" size, silent chk, compact	EA	175.10	5.37
6642	2-1/2" Sgl Disc Type Check Valve IB Wafer Type- 125#	EA	144.65	4.48
6644	3" Sgl Disc Type Check Valve IB Wafer Type- 125#	EA	228.50	4.45
6670	Valves, IB, for 125 or 150 lb flg, 4" size, silent chk, compact	EA	325.19	14.76
6690	Valves, IB, for 125 or 150 lb flg, 6" size, silent chk, compact	EA	518.54	18.86
6700	Valves, IB, for 125 or 150 lb flg, 8" size, silent chk, compact	EA	855.50	23.35
6710	Valves, IB, for 125 or 150 lb flg, 10" size, silent chk, compact	EA	1,377.67	38.25
6752	Valves, check, twin disc type, IB wafer, 125 lb, 2" size	EA	188.11	5.30
6753	2-1/2" Twin Disc Type Check Valve IB Wafer Type- 125#	EA	186.30	4.45
6754	Valves, check, twin disc type, IB wafer, 125 lb, 4" size	EA	372.44	18.17
6755	3" Twin Disc Type Check Valve IB Wafer Type- 125#	EA	218.68	4.45
6756	Valves, check, twin disc type, IB wafer, 125 lb, 6" size	EA	556.04	22.63
6758	Valves, check, twin disc type, IB wafer, 125 lb, 8" size	EA	785.04	22.99
6760	Valves, check, twin disc type, IB wafer, 125 lb, 10" size	EA	1,157.25	34.74
6762	Valves, check, twin disc type, IB wafer, 125 lb, 12" size	EA	1,429.25	51.49
6763	14" Twin Disc Type Check Valve	EA	3,014.77	132.85
6764	Valves, check, twin disc type, IB wafer, 125 lb, 18" size	EA	5,219.17	173.79
6765	20" Twin Disc Type Check Valve	EA	6,299.15	185.09
6766	Valves, check, twin disc type, IB wafer, 125 lb, 24" size	EA	8,042.25	213.35
6767	16" Twin Disc Type Check Valve	EA	4,055.25	153.06
15194 8000 Flap and flush valve, flanged				
8010	Valves, iron body, flap & flush, 4" size, flanged	EA	268.40	41.05
8012	Valves, iron body, flap & flush, 6" size, flanged	EA	325.21	57.98
8014	Valves, iron body, flap & flush, 8" size, flanged	EA	440.92	83.36
8016	Valves, iron body, flap & flush, 10" size, flanged	EA	559.08	87.86
8018	Valves, iron body, flap & flush, 12" size, flanged	EA	630.69	99.06
15194 8100 Mud valve, flanged				
Note: Basins, Waterworks, Sewage Treatment Plants Where Sedimentateous Material Must Be Flushed From System				
8110	Valves, iron body, mud valve, 4" size, flanged	EA	292.46	34.91
8114	Valves, iron body, mud valve, 8" size, flanged	EA	318.14	33.76
8115	Valves, iron body, mud valve, 10" size, flanged	EA	639.84	71.40
8116	Valves, iron body, mud valve, 12" size, flanged	EA	776.77	92.35
8118	Valves, iron body, mud valve, 18" size, flanged	EA	1,555.15	121.65
8120	Valves, iron body, mud valve, 24" size, flanged	EA	2,126.50	127.31
8122	Valves, iron body, mud valve, 30" size, flanged	EA	2,715.72	105.88
8124	Valves, iron body, mud valve, 36" size, flanged	EA	4,109.11	257.23
15195 1000 Swing Check Valves				
15195 1100 Bronze - For Threaded, Brazed Or Soldered Installation--125 Lb				
15195 1100 Basic Cost Items				
1101	1/8" Swing Check Valve Brz 125# for Thrd, Brazed or Soldered Inst	EA	30.48	3.27
1102	1/4" Swing Check Valve Brz 125# for Thrd, Brazed or Soldered Inst	EA	30.48	1.94
1107	1-1/4" Swing Check Valve Brz 125# for Thrd, Brazed or Soldered Ins	EA	55.81	3.95
1111	2-1/2" Swing Check Valve Brz 125# for Thrd, Brazed or Soldered Ins	EA	158.56	7.72

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1112	3" Swing Check Valve Brz 125# for Thrd, Brazed or Soldered Inst	EA	211.89	10.01
15195 1200	Iron Body - Bronze Munted Flanged - 125 Lb			
1202	1-1/4" IB Swing Ck Vlv, Brz, Flg 125#	EA	214.79	25.06
1205	2-1/2" IB Swing Ck Vlv, Brz, Flg 125#	EA	300.66	48.09
1206	3" IB Swing Ck Vlv, Brz, Flg&125#	EA	340.03	54.93
1208	5" IB Swing Ck Vlv, Brz, Flg&125#	EA	768.18	80.51
1214	14" IB Swing Ck Vlv, Brz, Flg&125#	EA	8,829.35	228.35
1215	16" IB Swing Ck Vlv, Brz, Flg&125#	EA	11,501.10	263.45
1217	20" IB Swing Ck Vlv, Brz, Flg&125#	EA	17,472.85	333.84
15196 1000	Triple Duty Valves, Combination Shut-off, Balancing & Check, CI Body			
1001	1-1/2" Thrd Triple Duty Valve	EA	292.63	23.31
1002	2" Thrd Triple Duty Valve	EA	362.72	33.53
1003	2-1/2" Flgd Triple Duty Valve	EA	524.03	101.86
1004	3" Flgd Triple Duty Valve	EA	594.40	116.07
1005	4" Flgd Triple Duty Valve	EA	1,083.22	174.18
1006	5" Flgd Triple Duty Valve	EA	1,284.47	211.19
1007	6" Flgd Triple Duty Valve	EA	1,614.55	265.61
1008	8" Flgd Triple Duty Valve	EA	2,221.69	332.09
1009	10" Flgd Triple Duty Valve	EA	3,019.81	377.72
15196 3000	Valves, Lined, Corrosion Resistant			
3001	btfl 150 lb. ductile iron, wfr type, TFE lined, 3" lvr hdl	EA	1,085.90	
3002	btfl 150 lb. ductile iron, wfr type, TFE lined, 4" lvr hdl	EA	1,516.74	
3003	btfl 150 lb. ductile iron, wfr type, TFE lined, 6" gear opr	EA	2,231.23	
3004	btfl 150 lb. ductile iron, wfr type, TFE lined, 8" gear opr	EA	2,913.34	
3005	btfl 150 lb. ductile iron, wfr type, TFE lined, 10" gear opr	EA	3,681.20	
3006	btfl 150 lb. ductile iron, wfr type, TFE lined, 12" gear opr	EA	5,165.00	
3007	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 1" size	EA	523.33	
3008	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 1-1/2" size	EA	637.25	
3009	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 2" size	EA	746.07	
3010	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 2-1/2" size	EA	922.54	
3011	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 3" size	EA	1,235.69	
3012	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 4" size	EA	1,641.31	
3013	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 6" size	EA	2,780.94	
3014	chk lift, 125 lb., CI flg, hori z ppl or SL lined, 8" size	EA	6,013.86	
3015	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 1" siz	EA	478.06	
3016	chk lift, 125 lb., CI flg, vert ppl or SL lined, 1-1/2" size	EA	586.32	
3017	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 2" siz	EA	683.82	
3018	chk lift, 125 lb., CI flg, vert ppl or SL lined, 2-1/2" size	EA	871.61	
3019	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 3" siz	EA	1,043.28	
3020	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 4" siz	EA	1,386.65	
3021	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 6" siz	EA	2,328.22	
3022	Valves, chk lift, 125 lb., CI fl g, vert ppl or SL lined, 8" siz	EA	4,146.37	
3023	clamp type, ductile iron, 150 LB f lg, TFE lined, 1" size, lvr hdl	EA	796.47	
3024	clamp type, ductile iron, 150lb fl g, TFE lined, 1-1/2" size, lvr hdl	EA	1,053.23	
3025	clamp type, ductile iron, 150 LB f lg, TFE lined, 2" size, lvr hdl	EA	1,280.85	
3026	clamp type, ductile iron, 150 LB f lg, TFE lined, 3" size, lvr hdl	EA	1,603.53	
3027	clamp type, ductile iron, 150 LB f lg, TFE lined, 4" size, gear opr	EA	2,320.40	
3028	clamp type, ductile iron, 150 LB f lg, TFE lined, 6" size, gear opr	EA	6,515.92	
3029	clamp type, ductile iron, 150 LB f lg, TFE lined, 8" size, gear opr	EA	7,937.93	
3030	diaph type, CI, 125 LB flg, ptfe or viton, lined, 1" size, hndwl opr	EA	210.19	
3031	diaph type, CI, 125 LB flg, ptfe/vi ton, lined, 1-1/2" size, hndwl opr	EA	281.33	
3032	diaph type, CI, 125 LB flg, ptfe or viton, lined, 2" size, hndwl opr	EA	319.94	
3033	diaph type, CI, 125 LB flg, ptfe/vi ton, lined, 2-1/2" size, hndwl opr	EA	543.38	
3034	diaph type, CI, 125 LB flg, ptfe or viton, lined, 3" size, hndwl opr	EA	545.28	
3035	diaph type, CI, 125 LB flg, ptfe or viton, lined, 4" size, hndwl opr	EA	990.52	
3036	diaph type, CI, 125 LB flg, ptfe or viton, lined, 6" size, hndwl opr	EA	2,186.74	
3037	diaph type, CI, 125 LB flg, ptfe or viton, lined, 8" size, hndwl opr	EA	3,778.53	
3038	Valves, plug, 150 lb. ductile iron flg, TFE lined, 1" lvr hdl	EA	845.90	
3039	plug, 150 lb. ductile iron flg, TFE lined, 1-1/2" lvr hdl	EA	1,191.84	
3040	Valves, plug, 150 lb. ductile iron flg, TFE lined, 2" lvr hdl	EA	1,334.61	
3041	Valves, plug, 150 lb. ductile iron flg, TFE lined, 3" lvr hdl	EA	1,433.75	
3042	Valves, plug, 150 lb. ductile iron flg, TFE lined, 4" lvr hdl	EA	2,065.74	
3043	Valves, plug, 150 lb. ductile iron flg, TFE lined, 6" gear opr	EA	4,167.41	
3044	Valves, plug, 150 lb. ductile iron flg, TFE lined, 8" gear opr	EA	7,456.91	
15196 5000	Valves, Plastic			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5001	Valves, plastic, angle, PVC, thr eaded, 1/4" size	EA	55.22	
5002	Valves, plastic, angle, PVC, thr eaded, 1/2" size	EA	55.22	
5003	Valves, plastic, angle, PVC, thr eaded, 3/4" size	EA	64.33	
5004	Valves, plastic, angle, PVC, thr eaded, 1" size	EA	76.92	
5005	plastic, ball, PVC, socket or t hreaded, sgl union, 1/4" size	EA	26.36	
5006	plastic, ball, PVC, socket or t hreaded, sgl union, 3/8" size	EA	26.36	
5007	plastic, ball, PVC, socket or t hreaded, sgl union, 1/2" size	EA	26.36	
5008	plastic, ball, PVC, socket or t hreaded, sgl union, 3/4" size	EA	31.50	
5009	plastic, ball, PVC, socket or t hreaded, single union, 1" size	EA	36.74	
5010	plastic, ball, PVC, socket or t hrdded, sgl union, 1-1/4" size	EA	48.77	
5011	plastic, ball, PVC, socket or t hrdded, sgl union, 1-1/2" size	EA	60.74	
5012	plastic, ball, PVC, socket or t hreaded, single union, 2" size	EA	86.55	
5013	plastic, ball, PVC, socket or t hrdded, sgl union, 2-1/2" size	EA	212.67	
5014	plastic, ball, PVC, socket or t hreaded, single union, 3" size	EA	212.95	
5015	plastic, ball, PVC, socket or t hreaded, single union, 4" size	EA	366.45	
5016	Valves, plastic, ball, PVC, doub le union, 1/2" size	EA	29.76	
5017	Valves, plastic, ball, PVC, doub le union, 3/4" size	EA	33.20	
5018	Valves, plastic, ball, PVC, doub le union, 1" size	EA	41.26	
5019	Valves, plastic, ball, PVC, doub le union, 1-1/4" size	EA	67.45	
5020	Valves, plastic, ball, PVC, doub le union, 1-1/2" size	EA	67.54	
5021	Valves, plastic, ball, PVC, doub le union, 2" size	EA	92.21	
5022	plastic, ball, CPVC, socket or threaded, sgl union, 1/2" size	EA	42.77	
5023	plastic, ball, CPVC, socket or threaded, sgl union, 3/4" size	EA	50.74	
5024	plastic, ball, CPVC, socket or threaded, sgl union, 1" size	EA	59.37	
5025	plastic, ball, CPVC, socket or thrdded, sgl union, 1-1/4" size	EA	101.40	
5026	plastic, ball, CPVC, socket or thrdded, sgl union, 1-1/2" size	EA	101.49	
5027	plastic, ball, CPVC, socket or threaded, sgl union, 2" size	EA	135.78	
5028	plastic, ball, CPVC, socket or threaded, sgl union, 3" size	EA	284.25	
5029	Valves, plastic, ball, polypropy lene, threaded, 1/4" size	EA	35.41	
5030	Valves, plastic, ball, polypropy lene, threaded, 3/8" size	EA	35.41	
5031	Valves, plastic, ball, polypropy lene, threaded, 1/2" size	EA	35.41	
5032	Valves, plastic, ball, polypropy lene, threaded, 3/4" size	EA	43.95	
5033	Valves, plastic, ball, polypropy lene, threaded, 1" size	EA	52.02	
5034	Valves, plastic, ball, polypropy lene, threaded, 1-1/4" size	EA	74.80	
5035	Valves, plastic, ball, polypropy lene, threaded, 1-1/2" size	EA	85.64	
5036	Valves, plastic, ball, polypropy lene, threaded, 2" size	EA	116.54	
5037	Valves, plastic, ball, polypropy lene, threaded, 3" size	EA	304.62	
5038	Valves, plastic, ball, polypropy lene, threaded, 4" size	EA	507.93	
5039	plastic, ball, PVC, three way, socket or threaded, 1/2" size	EA	65.41	
5040	plastic, ball, PVC, three way, socket or threaded, 3/4" size	EA	73.95	
5041	plastic, ball, PVC, three way, socket or threaded, 1" size	EA	80.31	
5042	plastic, ball, PVC, three way, socket or thrdded, 1-1/2" size	EA	160.34	
5043	plastic, ball, PVC, three way, socket or threaded, 2" size	EA	215.01	
5044	plastic, ball, PVC, three way, socket or threaded, 3" size	EA	518.53	
5045	Valves, plastic, ball check, PVC , socket or threaded, 1/4" size	EA	29.76	
5046	Valves, plastic, ball check, PVC , socket or threaded, 3/8" size	EA	29.76	
5047	Valves, plastic, ball check, PVC , socket or threaded, 1/2" size	EA	29.76	
5048	Valves, plastic, ball check, PVC , socket or threaded, 3/4" size	EA	33.20	
5049	Valves, plastic, ball check, PVC , socket or threaded, 1" size	EA	41.26	
5050	plastic, ball check, PVC, socke t or threaded, 1-1/4" size	EA	67.45	
5051	plastic, ball check, PVC, socke t or threaded, 1-1/2" size	EA	67.54	
5052	Valves, plastic, ball check, PVC , socket or threaded, 2" size	EA	91.64	
5053	Valves, plastic, ball check, PVC , socket or threaded, 3" size	EA	210.68	
5054	Valves, plastic, ball check, PVC , socket or threaded, 4" size	EA	297.41	
5055	Valves, plastic, ball check, CPV C, socket or threaded, 1/2" siz	EA	42.77	
5056	Valves, plastic, ball check, CPV C, socket or threaded, 3/4" siz	EA	50.74	
5057	Valves, plastic, ball check, CPV C, socket or threaded, 1" size	EA	59.37	
5058	plastic, ball check, CPVC, sock et or threaded, 1-1/2" size	EA	101.49	
5059	Valves, plastic, ball check, CPV C, socket or threaded, 2" size	EA	135.78	
5060	Valves, plastic, ball check, CPV C, socket or threaded, 3" size	EA	285.38	
5061	Valves, plastic, ball check, CPV C, socket or threaded, 4" size	EA	383.43	
5062	Valves, plastic, ball check, pol ypropylene, threaded, 1/2" size	EA	29.76	
5063	Valves, plastic, ball check, pol ypropylene, threaded, 3/4" size	EA	34.33	
5064	Valves, plastic, ball check, pol ypropylene, threaded, 1" size	EA	44.09	
5065	plastic, ball check, polypropyl ene, threaded, 1-1/2" size	EA	83.95	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5066	Valves, plastic, ball check, polypropylene, threaded, 2" size	EA	105.22	
5067	Valves, plastic, foot valve, PVC, socket or threaded, 1/2" size	EA	42.42	
5068	Valves, plastic, foot valve, PVC, socket or threaded, 3/4" size	EA	48.15	
5069	Valves, plastic, foot valve, PVC, socket or threaded, 1" size	EA	62.47	
5070	plastic, foot valve, PVC, socket or threaded, 1-1/4" size	EA	119.11	
5071	plastic, foot valve, PVC, socket or threaded, 1-1/2" size	EA	119.17	
5072	Valves, plastic, foot valve, PVC, socket or threaded, 2" size	EA	137.39	
5073	Valves, plastic, foot valve, PVC, socket or threaded, 3" size	EA	326.72	
5074	Valves, plastic, foot valve, PVC, socket or threaded, 4" size	EA	573.66	
5075	Valves, plastic, foot valve, CPVC, socket or threaded, 1/2" size	EA	74.11	
5076	Valves, plastic, foot valve, CPVC, socket or threaded, 3/4" size	EA	89.46	
5077	Valves, plastic, foot valve, CPVC, socket or threaded, 1" size	EA	105.48	
5078	plastic, foot valve, CPVC, socket or threaded, 1-1/4" size	EA	147.40	
5079	plastic, foot valve, CPVC, socket or threaded, 1-1/2" size	EA	171.23	
5080	Valves, plastic, foot valve, CPVC, socket or threaded, 2" size	EA	220.01	
5081	Valves, plastic, foot valve, CPVC, socket or threaded, 3" size	EA	415.00	
5082	Valves, plastic, foot valve, CPVC, socket or threaded, 4" size	EA	896.23	
5083	Valves, plastic, needle valve, PVC, threaded, 1/4" size	EA	37.68	
5084	Valves, plastic, needle valve, PVC, threaded, 3/8" size	EA	43.34	
5085	Valves, plastic, needle valve, PVC, threaded, 1/2" size	EA	43.34	
5086	Valves, plastic, Y check, PVC, socket or threaded, 1/2" size	EA	60.88	
5087	Valves, plastic, Y check, PVC, socket or threaded, 3/4" size	EA	65.46	
5088	Valves, plastic, Y check, PVC, socket or threaded, 1" size	EA	71.82	
5089	Valves, plastic, Y check, PVC, socket or threaded, 1-1/4" size	EA	111.59	
5090	Valves, plastic, Y check, PVC, socket or threaded, 1-1/2" size	EA	120.73	
5091	Valves, plastic, Y check, PVC, socket or threaded, 2" size	EA	150.50	
5092	Valves, plastic, Y check, PVC, socket or threaded, 2-1/2" size	EA	316.03	
5093	Valves, plastic, Y check, PVC, socket or threaded, 3" size	EA	297.83	
5094	Valves, plastic, Y check, PVC, socket or threaded, 4" size	EA	519.24	
5095	plastic, Y sediment strainer, PVC, socket or threaded, 1/2" size	EA	34.85	
5096	plastic, Y sediment strainer, PVC, socket or threaded, 3/4" size	EA	37.79	
5097	plastic, Y sediment strainer, PVC, socket or threaded, 1" size	EA	45.79	
5098	plastic, Y sediment strainer, PVC, socket or threaded, 1-1/4" size	EA	74.80	
5099	plastic, Y sediment strainer, PVC, socket or threaded, 1-1/2" size	EA	78.29	
5100	plastic, Y sediment strainer, PVC, socket or threaded, 2" size	EA	91.08	
5101	plastic, Y sediment strainer, PVC, socket or threaded, 2-1/2" size	EA	219.83	
5102	plastic, Y sediment strainer, PVC, socket or threaded, 3" size	EA	220.87	
5103	plastic, Y sediment strainer, PVC, socket or threaded, 4" size	EA	366.45	
15197 0010	Valves, steel			
1440	Valves, steel, 2.5" size, cast, check valve, 150 lb, flanged, swing	EA	806.21	58.54
15197 5150	Forged			
15197 5339	Ball valve, 800 lb, threaded			
5340	Valves, steel, 1/4" size, forged, ball valve, 800 lb,	EA	60.71	5.86
5360	Valves, steel, 1/2" size, forged, ball valve, 800 lb,	EA	60.71	5.86
5370	Valves, steel, 3/4" size, forged, ball valve, 800 lb,	EA	71.72	7.15
5380	Valves, steel, 1" size, forged, ball valve, 800 lb, threaded	EA	82.13	6.77
5400	Valves, steel, 1.5" size, forged, ball valve, 800 lb,	EA	133.62	9.38
5410	Valves, steel, 2" size, forged, ball valve, 800 lb, threaded	EA	161.52	6.66
5412	3" Threaded Ball Valve, Brass Body, Regular Port	EA	144.25	15.78
15197 5550	Ball valve, 150 lb, flanged			
5560	Ball valve, 150 lb, flanged, 4" size	EA	603.79	51.16
5570	Ball valve, 150 lb, flanged, 6" size	EA	1,285.58	82.49
5580	Ball valve, 150 lb, flanged, 8" size	EA	2,146.96	82.53
15197 5600	Ball Valves, 150 Lb PVC Socket Weld End Connections			
5610	1/2" PVC Ball Valve	EA	23.05	2.05
5620	3/4" PVC Ball Valve	EA	29.87	2.62
5630	1" PVC Ball Valve	EA	36.31	2.81
5640	1-1/4" PVC Ball Valve	EA	54.16	3.31
5650	1-1/2" PVC Ball Valve	EA	57.97	2.93
5660	2" PVC Ball Valve	EA	73.30	3.46
15197 5700	Refrigeration Ball Valves, Sweat, 1400 Series			
5710	3/8" Sweat Refrigeration Ball Valve	EA	23.47	3.88
5720	1/2" Sweat Refrigeration Ball Valve	EA	23.47	3.57
5730	5/8" Sweat Refrigeration Ball Valve	EA	38.42	4.18

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5740	7/8" Sweat Refrigeration Ball Valve	EA	45.54	4.14
5750	1-1/8" Sweat Refrigeration Ball Valve	EA	69.71	4.90
5760	1-5/8" Sweat Refrigeration Ball Valve	EA	110.86	5.82
15198 0010	Valves, stainless steel			
15198 6000	Gate valve, type 316, threaded			
6010	Stainless, type 316, gate valve, 1/4", 200 psi, threaded	EA	82.78	2.16
6011	Stainless, type 316, gate valve, 3/8", 200 psi, threaded	EA	87.32	1.51
6012	Stainless, type 316, gate valve, 1/2", 200 psi, threaded	EA	91.68	1.70
6013	Stainless, type 316, gate valve, 3/4", 200 psi, threaded	EA	108.29	2.08
6014	Stainless, type 316, gate valve, 1", 200 psi, threaded	EA	132.44	3.86
15198 6020	Globe valve, type 316, threaded			
6022	Stainless, type 316, globe valve, 1/4", 200 psi, threaded	EA	82.78	2.12
6023	Stainless, type 316, globe valve, 3/8", 200 psi, threaded	EA	87.32	4.20
6024	Stainless, type 316, globe valve, 1/2", 200 psi, threaded	EA	91.05	2.57
6025	Stainless, type 316, globe valve, 3/4", 200 psi, threaded	EA	108.29	3.18
6026	Stainless, type 316, globe valve, 1", 200 psi, threaded	EA	132.44	3.44
15198 6032	Check valve, type 316, threaded			
6034	Stainless, type 316, check valve, 1/4", 200 psi, threaded	EA	80.52	1.44
6035	Stainless, type 316, check valve, 3/8", 200 psi, threaded	EA	83.92	1.74
6036	Stainless, type 316, check valve, 1/2", 200 psi, threaded	EA	89.02	3.37
6037	Stainless, type 316, check valve, 3/4", 200 psi, threaded	EA	100.43	4.24
6038	Stainless, type 316, check valve, 1", 200 psi, threaded	EA	117.56	6.17
15199 0010	Valves, semi-steel			
15199 1020	Lubricated plug valve			
15199 1020	Threaded			
1030	Valves, semi-steel, 1/2" pipe, lubricated plug valve, threaded,	EA	92.64	9.15
1040	Valves, semi-steel, 3/4" pipe, lubricated plug valve, threaded,	EA	94.74	10.40
1050	Valves, semi-steel, 1" pipe, lubricated plug valve, threaded,	EA	116.68	11.19
1060	1-1/4"D Plug Valve, Semi-Stl, Scrd Lubricated, Wrench Oper w/Wrench	EA	65.20	11.79
1070	Valves, semi-steel, 1.5" pipe, lubricated plug valve, threaded,	EA	150.88	13.24
1080	Valves, semi-steel, 2" pipe, lubricated plug valve, threaded,	EA	182.69	17.02
1088	2-1/2"D Plug Valve, Semi-Stl, Scrd Lubricated, Wrench Oper w/Wrench	EA	96.73	18.15
1090	3"D Plug Valve, Semi-Stl, Scrd Lubricated, Wrench Oper w/Wrench	EA	107.09	22.11
15199 6990	Flanged			
7030	Valves, semi-steel, lubricated plug valve, flanged, 4" pipe,	EA	591.02	146.18
7040	Valves, semi-steel, lubricated plug valve, flanged, 6" pipe,	EA	991.80	111.57
7060	Valves, semi-steel, 10" pipe, lubricated plug valve, flanged,	EA	2,293.38	224.34
15199 7500	Float Valve Assy. For Maintaining Liquid Level in Tanks			
15199 7510	Single Seat, Bronze Construction (For Storage			
Note: Tanks, Reservoirs, Cooling Towers & Filtration Plants)				
7520	Inlet Size 1/2" Max PSI 100, Single Seat Float Valve	EA	72.17	
7530	Inlet Size 3/4" Max PSI 100, Single Seat Float Valve	EA	82.73	
7540	Inlet Size 1" Max PSI 100, Single Seat Float Valve	EA	107.31	
7550	Inlet Size 1-1/4" Max PSI 90, Single Seat Float Valve	EA	179.01	
7560	Inlet Size 1-1/2" Max PSI 90, Single Seat Float Valve	EA	182.82	
15199 7600	Double Seat, Bronze Construction (For Hot or Cold Water or Oil to Open Tanks)			
7610	Pipe Size 1/2" Max PSI 150, Double Seat Float Valve	EA	386.80	
7620	Pipe Size 3/4" Max PSI 150, Double Seat Float Valve	EA	389.84	
7630	Pipe Size 1" Max PSI 150, Double Seat Float Valve	EA	449.98	
7640	Pipe Size 1-1/4" Max PSI 120, Double Seat Float Valve	EA	497.44	
7650	Pipe Size 1-1/2" Max PSI 100, Double Seat Float Valve	EA	568.68	
7660	Pipe Size 2" Max PSI 75, Double Seat Float Valve	EA	745.93	
7670	Pipe Size 2-1/2" Max PSI 60, Double Seat Float Valve	EA	868.97	
7680	Pipe Size 3" Max PSI 50, Double Seat Float Valve	EA	1,045.12	
15199 8000	Needle Valve Bronze (For Heating & Cooling Applications)			
8010	1/4" Needle Valve	EA	42.54	
8020	3/8" Needle Valve	EA	46.28	
8030	1/2" Needle Valve	EA	50.74	
8040	3/4" Needle Valve	EA	72.13	
8050	1" Needle Valve	EA	107.56	
15199 8100	Diaphragm Valves, Cast Iron, 125# Flanged, Hand wheel Operated			
8110	1" Diaphragm Valve	EA	146.91	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8120	1-1/2" Diaphragm Valve	EA	242.11	
8130	2" Diaphragm Valve	EA	320.88	
8140	2-1/2" Diaphragm Valve	EA	504.30	
8150	3" Diaphragm Valve	EA	586.12	
8160	4" Diaphragm Valve	EA	886.30	
8170	6" Diaphragm Valve	EA	1,691.67	
8180	8" Diaphragm Valve	EA	3,400.33	

15200 Plumbing Fixtures

Note: The Following Energy Policy Act Flow Rates Requirements Superseed Flow Rates Standards In CSI 15401 JOC Specifications For The Following Items. Plumbing Fixtures And Trim Should Not Exceed The Maximum Flow rates Set Forth In The Energy Policy Act 92. Lavatory Faucets - 2.5Gal/MIn, Lavatory Replacement Aerators - 2.5Gal/MIn, Kitchen Faucets - 2.5Gal/MIn, Kitchen Replacement Aerators - 2.5Gal/MIn, Metering Faucets - 0.25Gal/Cycle, Gravity Tank-Type Toilets - 1.6 Gal/Flush, Flusometer Tank Toilets - 1.6Gal/Flush, Electromechanical Hyraulic Toilets - 1.6Gal/Flush, Blowdown Toilets - 3.5Gal/Flush, Urinals - 1.0Gal/Flush. Demolition of Fixtures Includes All Associated Faucets, Valve, Supply Lines, Traps, And Pop-up Drains.

15201 Fixtures

Note: Demolition Of Fixtures Includes All Associated Faucets, Valves, Supply Lines, Traps, And Pop-up Drains. Prices Are For Commercial Grade And Include No Rough-In Within The Wall. Prices Include Final Connection And All Associated Trim Unless Title States Otherwise.

15204 0010 Baths

15204 0100 Tubs

15204 0219 Recessed porcelain enamel on cast iron

0220	Baths, tubs, 72" x 36", recessed porcelain enamel on CI, w/trim	EA	1,546.66	56.73
0750	Baths, tubs, porcelain enamel on CI, for color, add		339.36	
0760	Baths, tubs, PE on CI, for designer colors & trim add		814.46	

15204 0299 Mt bottom

0300	Baths, tubs, 4' L, recessed porcelain enamel on CI, w/trim	EA	1,203.93	30.97
0750	Baths, tubs, porcelain enamel on CI, for color, add		275.18	
0760	Baths, tubs, PE on CI, for designer colors & trim add		660.43	
0380	Baths, tubs, 5' L, recessed porcelain enamel on CI, w/trim	EA	550.62	40.02
0750	Baths, tubs, porcelain enamel on CI, for color, add		105.40	
0760	Baths, tubs, PE on CI, for designer colors & trim add		252.96	

15204 2002 Painted steel

2200	Baths, tubs, enameled formed steel, w/trim 5' long	EA	376.26	30.09
2350	Baths, tubs, porcelain enamel on steel, for color, add		27.31	

15204 4001 Soaking, acrylic with pop-up drain

4100	Baths, tubs, 60"x48"x18.5" deep, soaking, acrylic w/pop-up drain	EA	763.77	36.33
4310	Baths, tubs, soaking, acrylic, for color, add		32.51	
4311	Baths, tubs, soaking, acrylic, for designer colors & trim add		130.05	

15204 4700 Tub and shower complete, fiberglass Shower Head And Trim

4704	Fiberglass tub/shower w/valves, head & trim 1 Pc 60" x 32" x 72"	EA	684.06	40.06
4706	Fiberglass tub/shower w/valves, head & trim 2 Pc 60" x 32" x 72"	EA	767.81	28.74
4708	Fiberglass tub/shower w/valves, head & trim 4 Pc 60" x 32" x 75"	EA	880.99	66.70

15204 8200 Bidet

8201	Bidet, vitreous china, with trim on fixture	EA	566.02	
8202	Bidet, vitreous china, with trim for wall mounting	EA	435.86	
8203	Bidet, vitreous china, for rough -in, supply, waste and vent, ad	EA	149.31	

15205 3000 Fixture Trim Replacement

Note: Includes Removal Of Existing Fixture And Installation Of New Fixture.

3001	Lavatory Faucet Replacement	EA	98.85	
3002	Kitchen Sink Faucet Replacement	EA	144.76	
3003	Gooseneck Faucet Replacement	EA	171.81	
3004	3/8" to 1/2" Compression Shut-off Valve Replacement	EA	25.06	
3005	Flush Valve Replacement	EA	182.82	
3006	Toilet Seat with Lid	EA	44.29	
3007	Toilet Seat without Lid	EA	35.40	
3008	Shower Head, Polished Chrome, Replacement	EA	54.95	

15205 4000 Removal & Reinstallation Of Fixtures & Trim

Note: Including Storage, Cleaning And Misc. Supply Materials

4001	Remove & Reinstall Wall Hung Water Closet With Tank	EA	197.49	
4002	Remove & Reinstall Wall Hung Water Closet With Flush Valve	EA	197.49	
4003	Remove & Reinstall Floor Munt Water Closet With Tank	EA	178.50	
4004	Remove & Reinstall Floor Munt Water Closet With Flush Valve	EA	178.50	
4005	Remove & Reinstall Wall Hung Urinal With Flush Valve	EA	197.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4006	Remove & Reinstall Wall Hung Lavatory With Faucet	EA	108.13	
4007	Remove & Reinstall Wall Hung Service Sink With Faucet	EA	145.42	
4008	Remove & Reinstall Wall Hung Water Cooler	EA	171.99	
4009	Remove & Reinstall Flush Valve	EA	47.53	
4011	Remove & Reinstall Faucet	EA	30.42	
4012	Remove & Reinstall Shower Head	EA	17.11	
4013	Remove & Reinstall Floor Munt Water Cooler	EA	38.02	
15205 5000	Faucets, Sink			
5001	Kitchen, Top Cast Spout	EA	67.10	
5002	Kitchen, Top Cast Spout W/ Sprayer	EA	72.05	
5003	Laundry Faucet, Shelf Type, IPS Or Copper Unions	EA	55.78	
5004	Laundry Faucet, Center Set, Without Pop-up Drain	EA	54.42	
5005	Laundry Faucet, Center Set, With Pop-up Drain	EA	60.11	
5006	Service Sink Faucet, Cast Spout Pail Hook, Hose End	EA	93.10	
5007	Sillcock, Compact, Brass, IPS PR Copper To Hose	EA	18.61	
5008	Lav Faucet, Wrist Action, Goose Spout 4" Ct, Brass Base, Polish Ch	EA	138.97	
5009	Lav Faucet, Dual Action Sgl Leve 1, Swing Spout & Aerator, Brass	EA	157.81	
5011	Lav Faucet, 2 Lever, Hdl Swing S pout&Aerator, 1/2"Supply, 6"C To	EA	129.84	
5012	Lav Faucet, 2 Lever Hdl, Fixed Spo ut, W/Aerator, 1/2"Supply, 4"C To	EA	100.36	
5013	Lav Faucet, Dual Action Ctr, 1 Lever, Fxd Spout W/Stopper Pull	EA	72.65	
15216 0010	Drinking fountain			
15216 1000	Wall mounted, non-recessed			
2700	Drinking fountain, sgl bubbler, no back, sst, wall mtd,	EA	894.01	20.42
2740	Drinking fountain, sgl bubbler, w/back, sst, wall mtd,	EA	582.75	17.62
3340	Drinking fountain, 7" back, vitreous china, wall mtd,	EA	462.72	20.27
15216 4000	Wall mounted, semi-recessed			
4600	Drinking fountain, sst, satin fin, sgl bubbler, wall mtd,	EA	696.05	36.50
4900	Drinking fountain, vitreous china, sgl bubbler, wall mtd,	EA	514.19	21.60
15216 6000	Wall mounted, fully recessed			
6800	Drinking fountain, wall mtd, fully rec, sst, sgl bubbler	EA	642.68	28.86
15216 7000	Outdoor Type Drinking Fountains			
Note: Penestal Type, Vandal Resistant, Push Button, Freeze Proof				
7010	Outdoor Drinking Fountain, Pedestal Type, Freeze Proof	EA	1,684.43	121.01
7020	Outdoor Drinking Fountain, Handi cap, Pedestal Type, Freeze Proof	EA	2,141.51	121.01
15220 0010	Hbt water dispensers			
3160	Hot water dispensers, instant, 40 cup	EA	160.23	7.26
3180	Hot water dispensers, household, 60 cup	EA	203.02	6.77
15224 0010	Industrial Safety Fixtures - No Rough-In			
5000	Industrial safety shower, pull, freestnd, 1 hd, drench, ball V, no	EA	386.39	46.83
6000	Industrial safety shower, eye/face wash comb, multi-noz, no	EA	634.26	46.66
6010	Emergency shower no rough in w/eyewash, freeze proof	EA	1,107.17	23.35
15227 5000	Grease Interceptors, Porcelain Enealed			
5011	Gpm 4, Grse Cap. 8 Lbs, Inlet S size 2"	EA	1,207.66	
5012	Gpm 7, Grse Cap. 14 Lbs, Inlet S size 2"	EA	1,403.15	
5013	Gpm 10, Grse Cap. 20 Lbs, Inlet S size 2"	EA	1,588.92	
5014	Gpm 15, Grse Cap. 30 Lbs, Inlet S size 2"	EA	2,005.76	
5015	Gpm 25, Grse Cap. 50 Lbs, Inlet S size 3"	EA	2,445.03	
5016	Gpm 50, Grse Cap. 100 Lbs, Inlet S size 3"	EA	3,955.32	
15227 6000	Grease Interceptors, Rubber Coating Painted			
6011	Gpm 4, Grse Cap. 8 Lbs, Inlet S size 2"	EA	550.76	
6012	Gpm 7, Grse Cap. 14 Lbs, Inlet S size 2"	EA	745.94	
6013	Gpm 10, Grse Cap. 20 Lbs, Inlet S size 2"	EA	881.67	
6014	Gpm 15, Grse Cap. 30 Lbs, Inlet S size 2"	EA	1,248.14	
6015	Gpm 25, Grse Cap. 50 Lbs, Inlet S size 3"	EA	1,706.79	
6016	Gpm 50, Grse Cap. 100 Lbs, Inlet S size 3"	EA	2,653.04	
15228 0010	Interceptors, grease			
Note: Painted Inside And Out, Internal Air Relief, Grease Draw-Off Piping And Valve, And Flow Control Fittng				
15228 0149	Cast iron			
Note: Inside And Out Internal Air Relief, And Flow Control Fitting				
0150	Interceptors, grease, cast iron, 4 GPM 8 lb fat capacity	EA	360.86	33.28
0152	7GPM 14# Grease Interceptor, CI Manual	EA	808.57	68.70

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1000	Interceptors, grease, cast iron, 10 GPM 20 lb fat capacity	EA	540.81	47.54
1002	15GPM 30# Grease Interceptor, CI Manual	EA	1,355.79	98.13
1004	25GPM 50# Grease Interceptor, CI Manual	EA	1,854.15	130.60
1060	Interceptors, grease, cast iron, 20 GPM 40 lb fat capacity	EA	945.05	69.40
1100	Interceptors, grease, cast iron, 35 GPM 70 lb fat capacity	EA	1,360.65	106.97
1110	Interceptors, grease, 100 lb fat cap, cast iron, 50 GPM	EA	1,455.26	98.10
15228 1119 Manual Grease Draw-Off				
Note: Note Coated Steel With Internal Air Relief And Flow Control Fitting				
15228 1119 Fabricated steel				
1120	Interceptors, grease, 100 lb fat cap, fabricated steel, 50 GPM	EA	1,598.67	105.38
1580	Interceptors, grease, add, fabricated steel, for seepage pan		92.04	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1140	Interceptors, grease, 150 lb fat cap, fabricated steel, 75 GPM	EA	3,246.50	93.92
1580	Interceptors, grease, add, fabricated steel, for seepage pan		207.39	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1160	Interceptors, grease, 200 lb fat cap, fabricated steel, 100 GPM	EA	3,617.02	108.75
1580	Interceptors, grease, add, fabricated steel, for seepage pan		233.32	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1162	150GPM 300#Grease Interceptor, St Manual, Coated Steel	EA	6,574.78	208.60
1580	Interceptors, grease, add, fabricated steel, for seepage pan		420.36	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1200	Interceptors, grease, 400 lb fat cap, fabricated steel, 200 GPM	EA	5,747.91	153.73
1580	Interceptors, grease, add, fabricated steel, for seepage pan		375.86	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1202	250GPM 500#Grease Interceptor, St Manual, Coated Steel	EA	10,873.28	278.19
1580	Interceptors, grease, add, fabricated steel, for seepage pan		709.70	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1204	350GPM 700#Grease Interceptor, St Manual, Coated Steel	EA	14,148.95	331.07
1580	Interceptors, grease, add, fabricated steel, for seepage pan		929.08	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1206	400GPM Grease Interceptor, Manual , 1000# Grease, 730Gal Liq Cap	EA	8,355.67	251.33
1580	Interceptors, grease, add, fabricated steel, for seepage pan		534.63	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1208	500GPM Grease Interceptor, Manual , 1250# Grease, 800 Gal Liq Cap	EA	9,432.11	299.08
1580	Interceptors, grease, add, fabricated steel, for seepage pan		600.43	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
1210	750GPM Grease Interceptor, Manual , 1500# Grease, 730 Gal Liq Cap	EA	12,775.96	379.53
1580	Interceptors, grease, add, fabricated steel, for seepage pan		822.51	
1585	Interceptors, grease, steel, for anchor flange, add		150.00	
1590	Interceptors, grease, steel, for anchor flange & clamp device, add		175.00	
15228 1700 Cast iron, semi-automatic				
Note: Painted Inside And Out Internal Air Relief, Grease Draw-Off Piping And Valve, And Flow Control Fitting				
1710	7GPM 14# Auto Grease Int-Cept, CI	EA	1,043.34	50.23
1720	Interceptors, grease, 20 lb fat cap, CI w/air relief, 10GPM	EA	835.85	47.50
1726	15GPM 30#Auto Grease Int-Cept, CI	EA	1,373.27	82.01
1728	25GPM 50#Auto Grease Int-Cept, CI	EA	2,074.20	119.91
1730	Interceptors, grease, 40 lb fat cap, CI w/air relief, 20GPM	EA	1,161.46	68.00
1740	Interceptors, grease, 70 lb fat cap, CI w/air relief, 35GPM	EA	1,666.07	94.98
1742	75GPM 150#Auto Grease Int-Cpt, CI	EA	3,033.87	195.23
1750	Interceptors, grease, 100 lb fat cap, CI w/air relief, 50GPM	EA	2,038.00	128.15
1752	100GPM Grease Interceptor, Semi- Auto, 250# Grease, 85 Gal Liq Cap	EA	3,162.19	136.87
1756	150GPM Grease Interceptor, Semi- Auto, 375# Grease, 150Gal Liq Cap	EA	3,455.94	130.03
1758	200GPM Grease Interceptor, Semi- Auto, 500# Grease, 225Gal Liq Cap	EA	4,686.14	168.81

15229 Sediment Interceptors And Oil Separators

15229 1000 Oil/Water Separator

15229 1100 Coalescing Type Complete With Diffusion

Note: Baffle, Tube Pack, Sheen Baffle, Effluent Over- Wier, Rotary Skimmer And Access Hatches

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15229 1100 Basic Cost Items				
1101	20GPM Coales' G Oil/H2O Separator With 4" Flange Connection	EA	6,302.53	260.55
1102	50GPM Coales' G Oil/H2O Separator With 4" Flange Connection	EA	9,061.14	258.42
1103	100GPM Coales' G Oil/H2O Septr With 4" Flange Connection	EA	10,154.49	257.90
1104	200GPM Coales' G Oil/H2O Septr With 4" Flange Connection	EA	14,277.00	342.15
1105	300GPM Coales' G Oil/H2O Septr With 4" Flange Connection	EA	16,091.24	341.52
1106	400GPM Coales' G Oil/H2O Septr With 4" Flange Connection	EA	18,989.48	523.42
1107	8" Separator Flngd 500 GPM Coalescing Oil/H2O	EA	28,062.65	523.28
15229 1110 Oil Stop Valve				
1111	20GPM Oil Stop Vlv, Oil/H2O Septr	EA	1,645.43	87.93
1112	50GPM Oil Stop Vlv, Oil/H2O Septr	EA	1,645.43	87.93
1113	100GPM Oil Stop Vlv, 0 & W Septr	EA	1,985.45	87.41
1114	200GPM Oil Stop Vlv, 0 & W Septr	EA	1,785.51	128.07
1115	300GPM Oil Stop Vlv, 0 & W Septr	EA	2,125.53	127.07
1116	400GPM Oil Stop Vlv, 0 & W Septr	EA	2,695.87	169.56
1117	500 GPM Oil Stop Valve, O&W Septr	EA	2,481.19	169.60
15229 1120 Pump Out Unit With Controls.				
1121	20GPM Pump Out Unit w/Controls	EA	5,133.77	195.34
1122	50GPM Pump Out Unit w/Controls	EA	5,133.77	195.34
1123	100GPM Pump Out Unit w/Controls	EA	5,133.77	195.34
1124	200GPM Pump Out Unit w/Controls	EA	6,910.73	256.50
1125	300GPM Pump Out Unit w/Controls	EA	6,910.73	256.50
1126	400GPM Pump Out Unit w/Controls	EA	7,236.30	347.49
1127	500 GPM Pump Out Unit with Controls	EA	6,892.05	349.84
15229 1130 Immersion heater				
1131	3kw Immersion Heater		1,788.71	
1132	3.75kw Immersion Heater		1,893.29	
1133	4.5kw Immersion Heater		1,905.52	
15229 1140 Alarm				
1141	Level Sensor/Alarm		1,819.05	
15229 1150 Manway Extension				
1151	500Gal		146.68	
1152	1000Gal		316.45	
1153	2000Gal		323.25	
15229 2100 Sediment Strainers				
2101	2" Strainer, Pump Suction Side	EA	56.64	
15232 0010 Laboratory equipment				
15232 7000 Tanks				
15232 7400 Kaynar, FRP casing, high chemical resistance				
7430	Lab eqpt, 18"x12"x18", cov, FRP csg, hi chem res, to250degF, 15gal,	EA	1,043.76	
7440	Lab eqpt, 24"x18"x18", cov, FRP csg, hi chem res, to250degF, 30gal,	EA	1,513.23	
15232 7500 Polyethylene, neutralization & dilution				
7530	Lab eqpt, tk, upright cyl, cov, neutral & dilution, 30 gal,	EA	373.68	
7550	Lab eqpt, tk, upright cyl, cov, neutral & dilution, 55 gal,	EA	509.67	
7570	Lab eqpt, tk, upright cyl, cov, neutral & dilution, 100 gal,	EA	832.32	
8210	Lab eqpt, tk, 14"ID x 27"D, cov, hvy dty w, to 180 deg F, 15 gal,	EA	145.33	
15236 0010 Lavatories				
15236 0500 Vanity top				
15236 0500 Porcelain enamel on cast iron				
0600	Lavatory, w/trim vanity top, porc enam on CI, 20" x 18"	EA	272.05	22.64
0860	Lavatory, vanity top, porc enam on CI, for color, add		45.84	
0861	Lavatory, vanity top, PE on CI, for designer colors & trim add		128.35	
15236 1000 Lavatories Including Trap, Drain & Supply Valves				
Note: For Faucets See CSI 15252.				
1010	Stainless Steel Lavatory, 16"x19"	EA	341.96	36.33
15236 2599 Steel enamel				
2600	Lavatory, w/trim single bowl, vanity top, 20" x 17", stl,	EA	195.50	30.55
2860	Lavatory, vanity top, porc enam on stl, for color, add		9.76	
2861	Lavatory, vanity top, PE on stl, for designer colors & trim add		19.52	
15236 2899 Vitreous china				
2900	Lavatory, w/trim single bowl, vanity top, vit china, 20" x 16"	EA	300.88	29.95

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3560	Lavatory, vanity top, vit china, for color, add		97.88	
3561	Lavatory, vanity top, vit china, for designer colors & trim add		195.75	
15236 4000	Wall hung			
	Note: For Carriers See 15116-0010			
15236 4039	Porcelain enamel on cast iron			
4040	Lavatory, w/trim single bowl, wall hung, 16" x 14", porc enam	EA	485.44	25.16
4580	Lavatory, wall hung, porc enam on CI, for color, add		124.34	
4581	Lavatory, wall hung, PE on CI, for designer colors & trim add		310.86	
4120	Lavatory, w/trim single bowl, wall hung, 19" x 17", porc enam	EA	453.80	25.16
4580	Lavatory, wall hung, porc enam on CI, for color, add		114.85	
4581	Lavatory, wall hung, PE on CI, for designer colors & trim add		287.13	
4180	Lavatory, w/trim single bowl, wall hung, 20" x 18", porc enam	EA	297.61	25.16
4580	Lavatory, wall hung, porc enam on CI, for color, add		68.00	
4581	Lavatory, wall hung, PE on CI, for designer colors & trim add		169.99	
4240	Lavatory, w/trim single bowl, wall hung, 22" x 19", porc enam	EA	495.39	25.16
4580	Lavatory, wall hung, porc enam on CI, for color, add		127.33	
4581	Lavatory, wall hung, PE on CI, for designer colors & trim add		318.32	
4582	Lavatory, wall hung, porc enam on CI, for wall carriers, add	EA	142.81	24.62
15236 5999	Vitreous china			
6000	Lavatory, w/trim single bowl w/bcksplsh, 18"x15", wall hung,	EA	295.01	25.19
6500	Lavatory, wall hung w/ bcksplsh, PE on CI, for color, add		64.17	
6501	Lavatory, hung w/ bcksplsh, PE on CI, for designer colors&trim add		106.96	
6060	Lavatory, w/trim single bowl w/bcksplsh, 19"x17", wall hung,	EA	236.61	25.19
6500	Lavatory, wall hung w/ bcksplsh, PE on CI, for color, add		46.65	
6501	Lavatory, hung w/ bcksplsh, PE on CI, for designer colors&trim add		77.76	
6120	Lavatory, w/trim single bowl w/bcksplsh, 24"x20", wall hung,	EA	372.26	25.19
6500	Lavatory, wall hung w/ bcksplsh, PE on CI, for color, add		87.35	
6501	Lavatory, hung w/ bcksplsh, PE on CI, for designer colors&trim add		145.58	
6210	Lavatory, w/trim whlchr type w/bcksplsh, 27"x20", wall hung,	EA	329.94	25.19
6500	Lavatory, wall hung w/ bcksplsh, PE on CI, for color, add		74.65	
6501	Lavatory, hung w/ bcksplsh, PE on CI, for designer colors&trim add		124.42	
6502	Lavatory, wall hung w/ bcksplsh, PE on CI, for wall carriers, add	EA	122.76	24.62
15240 0010	Laundry sinks			
15240 0020	Porcelain enamel on cast iron			
0200	Laundry sinks, w/trim 48" x 20", dbl compt, BI frame, porc	EA	911.07	42.01
15240 2000	Mlded stone			
2020	Laundry sinks, w/trim 22"x21", sgl compt, on wall hgr/legs,	EA	223.47	34.34
15240 2100	Fiberglass Sinks			
2110	Fiberglass, Sgl Bowl, Wall Mtd., W Faucets & Drain To P-Trap		225.23	
2120	Fiberglass, Sgl Bowl, Flr Mtd., W Faucets & Drain To P-Trap		225.23	
2130	Fiberglass, Dbl Bowl, Wall Mtd., W Faucets & Drain To P-Trap		357.65	
2140	Fiberglass, Dbl Bowl, Flr Mtd., W Faucets & Drain To Floor		357.65	
15248 0010	Showers			
15248 1500	Stall with door and trim			
15248 1509	Baked enamel			
1510	Showers, stall, mlded stone receptor, 30"sq, w/door & trim	EA	658.31	25.62
1600	Showers, stall, w/door & trim for color add		37.45	
1601	Showers, stall, for designer colors & trim add, w/door & trim		56.17	
15248 2999	Fiberglass			
3000	Showers, stall, 32" x 32" sq, fbgl, one PC, w/ 3 wall, w/door	EA	667.50	11.85
3100	Showers, stall, 36" x 36" sq, fbgl, one PC, w/ 3 wall, w/door	EA	727.40	11.85
3210	Showers, stall, 48"x34.5"x72" cor seat, fbgl, hdcp, w/door &	EA	974.75	16.68
15248 3999	Polypropylene			
4000	Showers, stall, w/mlded-stone fl, 30" x 30", polyprop, w/door	EA	671.89	109.24
15248 4999	Head and mixing valve			
5000	Showers, built-in, head, arm 4 GPM valve	EA	152.21	28.63
5500	Showers, head, water economizer, 3.0 GPM	EA	78.46	4.73
5800	Showers, mixing valve, built-in	EA	152.69	19.10
15248 6000	Group with valve			
6800	Showers, gp, less ptn, no rgh-in, 6 hd, no receptors,	EA	2,747.12	75.65
15252 0010	Sinks			
15252 0050	Corrosion resistant, single sinks			
1050	Sinks, faucets & dr, 18"x15"x12", bench mtd, 2 drainbrds, polthn,	EA	1,036.96	67.98

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1360	Sinks, faucets & dr, 21"x 18"x10", polthn, sgl, flgd 1.25"	EA	429.85	49.03
1490	Sinks, faucets & dr, for rgh-in, sply, W & vent, add	EA	365.96	101.15
15252 1499	Laboratory sink			
1500	Laboratory sink, 250 gal, 6' long, recessed	EA	1,191.10	99.34
15252 1999	Kitchen, counter top style			
2000	Kitchen sink, w/faucets & dr, 24"x21" sgl bowl, polthn on CI,	EA	339.33	27.99
2310	Kitchen sink, w/faucets & dr, cntr top, for color add		47.59	
2311	Kitchen sink, cntr top, w/faucets & dr, dsgr colors & trim add		118.98	
2200	Kitchen sink, w/faucets & dr, 32"x21" dbl bowl, polthn on CI,	EA	467.15	38.32
2310	Kitchen sink, w/faucets & dr, cntr top, for color add		69.78	
2311	Kitchen sink, cntr top, w/faucets & dr, dsgr colors & trim add		174.44	
15252 2399	Kitchen sink, combination tray and sink			
2400	Kitchen sink, comb tray & sink, cntr top, two bowl, 42" x 21"	EA	611.45	74.97
15252 2999	Kitchen sink, stainless steel			
3000	Kitchen sink, W/ faucets & dr, SS, self rimming, 19" x 18" sgl	EA	370.45	65.96
3100	Kitchen sink, W/ faucets & dr, SS, self rimming, 25" x 22" sgl	EA	405.37	61.03
3200	Kitchen sink, 33"x22" dbl bowl, cntr top, sst, self rim comb	EA	556.16	81.86
15252 3300	Handicap			
3310	Add for Infa-Red Faucets	EA	347.36	20.64
15252 5900	Scullery sink			
Note: Also Includes Faucet & Sprayer				
5910	Scullery sink, sst 1 bowl & drain board, 43" x 22" OD	EA	503.07	11.42
5920	Scullery sink, sst 2 bowls & drain board, 49" x 22" OD	EA	646.31	14.58
5930	Scullery sink, sst 3 bowls & drain board, 67" x 22" OD	EA	872.99	19.76
5940	Scullery sink, sst 1 bowl & drain board, 50" x 28" OD, with legs	EA	2,051.85	15.75
15252 6649	Service, floor or wall			
6650	Sinks, w/faucets & drain, polthn on CI, 28"x28", corner, floor,	EA	730.63	38.35
7100	Sinks, w/faucets & drain, roll rim 24"x20", polthn on CI, wall,	EA	630.05	30.41
15268 0010	Urinals			
Note: For Carriers See 15116-0010.				
15268 1350	Trough Type Urinal Enealed Cast Iron Includes Strainer Trap Flush Valve And Trim			
1351	36" Long Trough Type Urinal, En CI w/Strainer Trap Flush Vlv & Tri	EA	1,069.45	39.43
5300	Urinals, wall hung, vit china, for color (special order), add		866.87	
1352	48" Long Trough Type Urinal, En CI w/Strainer Trap Flush Vlv & Tri	EA	1,267.10	39.17
5300	Urinals, wall hung, vit china, for color (special order), add		1,064.52	
1353	60" Long Trough Type Urinal, En CI w/Strainer Trap Flush Vlv & Tri	EA	1,540.13	45.60
5300	Urinals, wall hung, vit china, for color (special order), add		1,304.70	
1354	72" Long Trough Type Urinal, En CI w/Strainer Trap Flush Vlv & Tri	EA	1,974.12	45.26
5300	Urinals, wall hung, vit china, for color (special order), add		1,738.69	
15268 2999	Wall hung			
3100	Urinals, hanger & self-closing valve, siphon, vitreous china,	EA	552.54	25.12
5300	Urinals, wall hung, vit china, for color (special order), add		363.31	
3120	Urinals, hanger & self-closing valve, blowout, vitreous china,	EA	616.21	17.60
5300	Urinals, wall hung, vit china, for color (special order), add		426.98	
3130	Handicapped Wall Hung Urinal With Flush Valve	EA	1,003.87	17.47
5300	Urinals, wall hung, vit china, for color (special order), add		858.27	
15268 4999	Stall type			
5000	Urinals, stall type, vitreous china, includes valve	EA	871.03	24.09
5300	Urinals, wall hung, vit china, for color (special order), add		643.96	
15276 0010	Wash fountains			
15276 1900	Group, foot control			
15276 1999	Precast terrazzo, circular			
2000	Wash fount, circ, 36" dia, 5/6 person, ft cntrl, precast	EA	2,107.88	43.95
5606	Washing fountain, for metal soap dispenser, add		85.50	
2100	Wash fount, circ, 54" dia, 8/10 person, ft cntrl, precast	EA	2,638.83	51.56
5606	Washing fountain, for metal soap dispenser, add		85.50	
2400	Wash fount, semi-circ, 36" dia, 3 persons, ft cntrl, precast	EA	1,983.95	49.75
5606	Washing fountain, for metal soap dispenser, add		85.50	
2500	Wash fount, semi-circ, 54" dia, 4/5 person, ft cntrl, precast	EA	2,262.28	53.05
5606	Washing fountain, for metal soap dispenser, add		85.50	
15276 2999	Stainless steel, circular			
3000	Wash fount, sst, group, ft cntrl, circular, 36" dia	EA	2,288.73	110.01

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
3100	Wash fount, sst, group, ft cntrl, circular, 54" dia	EA	2,976.89	128.87
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
3400	Wash fount, sst, group, ft cntrl, semi-circ, 36" dia	EA	2,036.96	122.23
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
3500	Wash fount, sst, group, ft cntrl, semi-circ, 54" dia	EA	2,595.70	138.19
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
15276 4999	Thermoplastic, pre-assembled, circular			
5000	Wash fount, thermoplastic, circ, 36" dia, group, ft cntrl,	EA	1,777.11	36.30
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
5100	Wash fount, thermoplastic, circ, 54" dia, group, ft cntrl,	EA	2,131.74	42.50
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
5400	Wash fount, thermoplastic, semi-circ, 36", group, ft cntrl,	EA	1,651.21	41.12
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
5600	Wash fount, thermoplastic, semi-circ, 54", group, ft cntrl,	EA	2,068.81	47.57
5606	<i>Washing fountain, for metal soap dispenser, add</i>		85.50	
15280 0010	Water closets			
	Note: With 3" Ball Pass. Includes Flush Valves Where Indicated.			
15280 0150	Tank type, vitreous china, incl seat			
15280 0199	Wall hung			
0200	Water clo, tank, supply w/stop, 1 piece, vit china, seat, wall	EA	950.32	21.43
1960	<i>Water closet, vit china, for color, add</i>		252.96	
1961	<i>Water clo, tank, vit china, seat, fl mtd, for dsgr colors add</i>		463.77	
0400	Water clo, tank, supply w/stop, 2 piece, vit china, seat, wall	EA	582.14	21.32
1960	<i>Water closet, vit china, for color, add</i>		142.51	
1961	<i>Water clo, tank, vit china, seat, fl mtd, for dsgr colors add</i>		261.27	
15280 0999	Floor mounted			
1000	Water clo, tank, 1 piece, vit china, seat, supply w/stop, fl	EA	700.98	20.37
1960	<i>Water closet, vit china, for color, add</i>		178.16	
1961	<i>Water clo, tank, vit china, seat, fl mtd, for dsgr colors add</i>		326.63	
1100	Water clo, tank, 2 piece, vit china, seat, supply w/stop, fl	EA	268.06	21.22
1960	<i>Water closet, vit china, for color, add</i>		48.29	
1961	<i>Water clo, tank, vit china, seat, fl mtd, for dsgr colors add</i>		88.52	
1200	Water clo, tank, w/18"H bowl, vit china, seat, supply w/stop, fl	EA	448.02	20.61
1960	<i>Water closet, vit china, for color, add</i>		102.27	
1961	<i>Water clo, tank, vit china, seat, fl mtd, for dsgr colors add</i>		187.50	
15280 3000	Bowl only, with flush valve, seat			
15280 3099	Wall hung			
3100	Water clo, bowl only, w/flush valve, seat, wall hung	EA	524.53	23.35
15280 3299	Floor mounted			
3300	Water clo, bowl only, w/flush valve, seat, floor mounted	EA	449.83	21.54
3350	Water clo, bowl only, with wall outlet, w/flush valve, seat, flr	EA	652.71	22.53
3370	Water clo, bowl only, elongated bowl, seat, floor mtd, hosp type	EA	502.84	23.77
15280 5999	Chemical toilet			
6000	Chemical toilet, small tank	EA	2,547.17	573.57
6050	<i>Chemical toilet, for extra urinal, add</i>		197.95	
6010	Chemical toilet, medium tank	EA	4,097.09	662.37
6050	<i>Chemical toilet, for extra urinal, add</i>		343.48	
6020	Chemical toilet, large tank	EA	7,172.44	794.75
6050	<i>Chemical toilet, for extra urinal, add</i>		637.77	
15280 7000	Fixture Rough-In Only			
	Note: Price Does Not Include Fixtures. Not For Use Where Detail is Available. Includes Cast Iron Waste & Vent And Domestic Water Supply Pipe & Fittings Within The Wall From The Floor To The Ceiling And Stub Out. JOC Note: Use Detailed Items Instead Of Rough-In Assembly.			
7002	Rough-In Water Closet, Floor Mtd Not Including Fixture	EA	534.18	
7004	Rough-In Water Closet, Wall Mtd Not Including Fixture	EA	567.85	
7006	Rough-In Urinal, Wall Mounted Not Including Fixture	EA	276.71	
7008	Rough-In Bathtub (5' Recessed) Not Including Fixture	EA	437.84	
7010	Rough-In Lavatory, Wall Mtd Not Including Fixture	EA	223.81	
7012	Rough-In Kitchen Sink, (Counter) Not Including Fixture	EA	302.18	
7014	Rough-In Service Sink, Wall Mtd Not Including Fixture	EA	440.97	
7016	Rough-In H2O Cooler (Free Stand) Not Including Fixture	EA	265.41	
7018	Rough-In Service Sink, Flr Mtd Not Including Fixture	EA	665.99	
7020	Rough-In Bidet Not Including Fixture	EA	509.99	
7022	Rough-In Shower Fixture Not Including Fixture	EA	437.84	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15283 0009	Water filters			
15283 0010	Water Filters			
9200	Water fltr, coml, 1", fully auto, taste & odor rmv, 660 GPH	EA	1,731.53	
9240	Water fltr, coml, 1.25", fully auto, taste & odor rmv, 1500 GPH	EA	3,110.01	
9320	Water fltr, coml, 2", fully auto, taste & odor rmv, 3420 GPH	EA	5,646.26	
9360	Water fltr, coml, 2.5", fully auto, taste & odor rmv, 4620 GPH	EA	8,781.88	
15284	Pumps			
15285 1000	Centrifugal Pumps			
15285 1100	Stainless Steel			
1101	50 GPM Cntfagl SST Pump 100' TDH - 3 HP	EA	4,418.66	
1102	250 GPM Cntfagl SST Pump 100' TDH - 10 HP	EA	4,979.10	
1103	500 GPM Cntfagl SST Pump 100' TDH - 20 HP	EA	7,393.34	
15285 2000	Vertical Turbine Pumps			
15285 2100	Stainless Steel			
2101	Vert Turb SST Pump - 100 GPM 100' TDH - 7.5 HP	EA	12,149.48	
2102	Vert Turb SST Pump - 250 GPM 100' TDH - 15 HP	EA	15,620.17	
2103	Vert Turb SST Pump - 500 GPM 100' TDH - 20 HP	EA	19,046.29	
2104	Vert Turb SST Pump - 750 GPM 100' TDH - 30 HP	EA	20,201.75	
2105	Vert Turb SST Pump - 1000 GPM 100' TDH - 40 HP	EA	21,388.03	
2106	Vert Turb SST Pump - 100 GPM 200' TDH - 15 HP	EA	14,415.87	
2107	Vert Turb SST Pump - 250 GPM 200' TDH - 25 HP	EA	15,620.17	
2108	Vert Turb SST Pump - 500 GPM 200' TDH - 40 HP	EA	23,573.54	
2109	Vert Turb SST Pump - 750 GPM 200' TDH - 60 HP	EA	25,860.81	
2110	Vert Turb SST Pump - 1000 GPM 200' TDH - 75 HP	EA	29,310.70	
15286 0010	Pumps, circulating			
15286 0600	Bronze, sweat connections, flange			
1060	Pump, crcltg, 3/4" - 1.5", 1/8 HP, htd or CHW appl, brz, flgd	EA	646.82	28.42
1100	Pump, crcltg, 3/4" - 1.5", 1/3 HP, htd or CHW appl, brz, flgd	EA	699.90	28.31
1140	Pump, crcltg, 1/6 HP, htd or CHW appl, brz, flgd conn, 2" size	EA	896.30	50.56
15286 2000	Cast iron, flange connection			
2220	Pump, crcltg, 1/4 HP, htd or CHW appl, CI, flange conn, 3" size	EA	706.01	42.58
2600	<i>Pump, crcltg, CI, flange conn, for non-ferrous implr, add</i>		16.92	
2300	Pump, crcltg, 1/2 HP, htd or CHW appl, CI, flange conn, 3" size	EA	933.40	39.74
2600	<i>Pump, crcltg, CI, flange conn, for non-ferrous implr, add</i>		23.74	
2340	Pump, crcltg, 3/4 HP, htd or CHW appl, CI, flange conn, 3" size	EA	1,056.20	39.74
2600	<i>Pump, crcltg, CI, flange conn, for non-ferrous implr, add</i>		27.43	
2380	Pump, crcltg, 1 HP, htd or CHW appl, CI, flange conn, 3" size	EA	1,459.46	39.74
2600	<i>Pump, crcltg, CI, flange conn, for non-ferrous implr, add</i>		39.53	
15286 4000	Close Coupled, end suction, bronze impeller			
4090	Pump, 2HP, 50GPM htd/CHW appl, 2", close cpld, end suct, CI, crcltg	EA	1,199.37	57.09
4100	Pump, 3HP, 90GPM htd/CHW appl, 2", close cpld, end suct, CI, crcltg	EA	1,348.07	66.53
4300	Pump, 5HP, 225GPM htd/CHW appl, 3", close cpld, end suct, CI, crcltg	EA	1,606.78	120.49
4420	Pump, 7.5HP, 350GPM htd/CHW appl, 4", close cpld, end suct, CI,	EA	2,157.21	75.00
15287 0010	Pump condensate return system			
15287 2000	Simplex			
2020	Condensate rtn sys, 3/4HP 15GPM pump, motor, CI rcvr, flt sw	EA	2,045.92	72.49
2030	1/3 HP 12 GPM 15 Gal Receiver, Simplex Condensate Pump	EA	2,198.94	86.76
2040	1/2 HP 22 GPM 30 Gal Receiver, Simplex Condensate Pump	EA	2,607.96	90.37
15287 2100	Duplex			
2110	1/3 HP, 12 GPM 15 Gal Receiver, Duplex Condensate Pump	EA	3,162.38	96.37
2112	1/2 HP, 22 GPM 30 Gal Receiver, Duplex Condensate Pump	EA	3,604.62	110.83
2120	Condensate rtn sys, flt sw altntr 3/4HP 15GPM 2pumps/motor, CI	EA	3,198.80	87.28
2130	Condensate rtn sys, flt sw altntr 1HP 25GPM 2pumps/motor, CI rcvr,	EA	3,386.35	88.06
2140	Condensate rtn sys, flt sw altntr 1.5HP 45GPM 2pumps/motor, CI	EA	4,167.97	89.27
2150	Condensate ret sys, flt sw altntr 1.5HP 60GPM 2pumps/motor, CI	EA	4,529.02	58.72
15287 2200	Automatic			
2210	1/40 HP Condensate Pump	EA	189.24	
2220	1/30 HP Condensate Pump	EA	163.40	
2230	1/18 HP Condensate Pump	EA	185.03	
2240	1/12 HP Condensate Pump	EA	237.42	
2250	1/5 HP Condensate Pump	EA	275.27	
15287 6000	Pump C. I. Close Coupling			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15287 6100 Pump C.I. Close Coupling Standard Capacity				
6101	Pump C.I. Close Coupling 3 HP 90 GPM	EA	1,493.28	
6102	Pump C.I. Close Coupling 3 HP 15 0 GPM	EA	1,814.68	
6103	Pump C.I. Close Coupling 5 HP 22 5 GPM	EA	2,234.48	
6104	Pump C.I. Close Coupling 5 HP 35 0 GPM	EA	2,429.93	
6105	Pump C.I. Close Coupling 7 1/2 H P, 350 GPM	EA	3,110.14	
6106	Pump C.I. Close Coupling 10 HP 6 00 GPM	EA	3,513.87	
6107	Pump C.I. Close Coupling 15 HP 1 000 GPM	EA	3,303.46	
6108	Pump C.I. Close Coupling 20 HP 1 350 GPM	EA	4,036.04	
6109	Pump C.I. Close Coupling 25 HP 1 550 GPM	EA	4,714.49	
15287 7000 Pump, Polypropylene Body, Housing & Impeller, 11				
7001	1/3 HP Pump, 22GPM 40 Ft Head	EA	601.80	
7002	1/2 HP Pump, 33GPM 40 Ft Head	EA	628.86	
7003	3/4 HP Pump, 53GPM 40 Ft Head	EA	659.69	
15287 8000 Steam Condensate Meter				
8001	Steam condensate meter, 500 lb. per hour	EA	2,605.87	
8002	Steam condensate meter, 1500 lb. per hour	EA	2,806.63	
8003	Steam condensate meter, 3000 lb. per hour	EA	3,770.83	
8004	Steam condensate meter, 12,000 l b. per hour	EA	5,056.83	
15288 0010 Pumps, general utility				
15288 4000 Centrifugal, end suction, horizontal mount				
15288 4020 Vertical split case, single stage				
Note: Vertical Split Case, End Suction, 125 Lb Flanged, 1750 Rpm Drip-Proof Motor, Common Base Plate 100 Ft Head. Packed Stuffing Box. For General Service.				
4040	Pump, cntfagl,100GPM 5HP,1.5"D, horiz mtd, end suct,vert splt,	EA	2,278.95	111.83
4050	Pump, cntfagl,200GPM 10HP,2"D, horiz mtd, end suct,vert splt,	EA	2,641.56	156.75
4060	Pump, cntfagl,250GPM 10HP,3"D, horiz mtd, end suct,vert splt,	EA	2,751.38	163.39
4070	Pump, cntfagl,300GPM 15HP,2"D, horiz mtd, end suct,vert splt,	EA	3,068.55	182.68
4080	Pump, cntfagl,500GPM 20HP,4"D, horiz mtd, end suct,vert splt,	EA	4,248.76	257.41
4090	Pump, cntfagl,750GPM 30HP,4"D, horiz mtd, end suct,vert splt,	EA	4,615.24	304.77
4100	Pump, cntfagl,1050GPM 40HP,5"D, horiz mtd, end suct,vert splt,	EA	5,021.72	328.01
4110	Pump, cntfagl,1500GPM 60HP,6"D, horiz mtd, end suct,vert splt,	EA	7,439.95	736.15
4120	Pump, cntfagl,2000GPM 75HP,6"D, horiz mtd, end suct,vert splt,	EA	9,659.20	965.46
4130	Pump, cntfagl,3000GPM 100HP,8"D, horiz mtd, end suct,vert splt,	EA	12,078.95	1,273.38
15288 4200 Horizontal split case, single stage				
Note: Horizontal Split Case 125 Lb Flanged, 1750 Rpm Drip-Proof Motor, Common Base Plate. 100 Ft Head, Except As Noted. Packed Stuffing Box. For General Service				
4210	Pump, cntfagl,1.5"D, horiz mtd, horiz splt, sgl stg,100GPM 7.5HP	EA	3,344.55	108.92
4220	Pump, cntfagl,2.5"D, horiz mtd, horiz splt, sgl stg,250GPM 15HP	EA	4,389.30	138.02
4230	Pump, cntfagl,4"D, horiz mtd, horiz splt, sgl stg,500GPM 20HP	EA	5,309.39	402.12
4240	Pump, cntfagl,5"D, horiz mtd, horiz splt, sgl stg,750GPM 25HP	EA	5,481.11	157.33
4250	Pump, cntfagl,5"D, horiz mtd, horiz splt, sgl stg,1000GPM 40HP	EA	7,130.69	235.29
4260	Pump, cntfagl,6"D, horiz mtd, horiz splt, sgl stg,1500GPM 50HP	EA	8,809.69	282.51
4270	Pump, cntfagl,8"D, horiz mtd, horiz splt, sgl stg,2000GPM 75HP	EA	11,933.44	425.64
4280	Pump, cntfagl,100HP,10"D, horiz mtd, horiz splt, sgl stg,3000GPM	EA	13,177.40	394.06
4290	Pump, cntfagl,150HP,10"D, horiz mtd, horiz splt, sgl stg,3500GPM	EA	14,073.08	243.28
4300	Pump, cntfagl,200HP,10"D, horiz mtd, horiz splt, sgl stg,4000GPM	EA	18,086.04	379.26
4302	40 GPM CI Cntrf Pump, 1-1/2" Disch Sgl Stage, Horz Split	EA	1,608.55	86.03
4304	50 GPM CI Cntrf Pump, 1-1/2" Disch Sgl Stage, Horz Split	EA	2,053.74	89.47
4306	90 GPM CI Cntrf Pump, 1-1/2" Disch Sgl Stage, Horz Split	EA	2,824.44	80.97
4310	350 GPM CI Cntrf Pump, 4" Disch Sgl Stage, Horz Split Case, 10	EA	3,946.12	125.03
15288 4330 Horizontal split case, two stage				
Note: 125 Lb Flanged, 3500 Rpm Drip-Proof Motor, Common Base Plate 500 Ft Head. Packed Stuffing Box And Boiler Feed Water Service				
4340	Pump, cntfagl,1.5"D, horiz mtd, horiz splt, two stg,100GPM 40HP	EA	5,058.40	138.77
4350	Pump, cntfagl,1.5"D, horiz mtd, horiz splt, two stg,200GPM 50HP	EA	5,670.32	155.52
4360	Pump, cntfagl,2"D, horiz mtd, horiz splt, two stg,300GPM 75HP	EA	6,135.94	189.08
4370	Pump, cntfagl,3"D, horiz mtd, horiz splt, two stg,400GPM 100HP	EA	6,748.04	144.21
4380	Pump, cntfagl,4"D, horiz mtd, horiz splt, two stg,800GPM 200HP	EA	16,494.02	387.67
15288 5000 Centrifugal,in-line, vert mount, 3550 TEFC motor				
Note: For General Service, 125 Lb Flanged, 3550 Rpm Tefc Motor Packed Stuffing Boxes And Ductile Iron Caces				
15288 5010 Single stage				
5020	Pump, cntfagl,3HP,1.5"D, iron, in-line, 125lb flange,50GPM sgl	EA	704.07	29.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		22.86	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		91.45	
5030	Pump, cntfagl, 5HP, 1.5"D, iron, in-line, 125lb flange, 75GPM sgl	EA	1,138.01	52.58
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		39.16	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		156.64	
5040	Pump, cntfagl, 7.5HP, 1.5"D, iron, in-line, 125lb flange, 100GPM	EA	1,279.88	60.56
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		42.16	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		168.64	
5050	Pump, cntfagl, 10HP, 1.5"D, iron, in-line, 125lb flange, 125GPM	EA	1,556.57	91.99
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		52.23	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		208.93	
5060	Pump, cntfagl, 15HP, 1.5"D, iron, in-line, 125lb flange, 150GPM	EA	1,928.11	104.43
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		69.21	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		276.84	
5070	Pump, cntfagl, 30HP, 1.5"D, iron, in-line, 125lb flange, 200GPM	EA	1,271.35	110.27
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		109.56	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		438.24	
5080	Pump, cntfagl, 40HP, 2"D, iron, in-line, 125lb flange, 250GPM	EA	3,153.46	133.91
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		126.59	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		506.37	
5090	Pump, cntfagl, 50HP, 3"D, iron, in-line, 125lb flange, 300GPM	EA	4,030.90	237.00
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		168.07	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		672.30	
5100	Pump, cntfagl, 75HP, 3"D, iron, in-line, 125lb flange, 400GPM	EA	7,638.38	193.13
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		283.52	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		1,134.08	
5110	Pump, cntfagl, 100HP, 3"D, iron, in-line, 125lb flange, 600GPM	EA	9,831.56	295.13
5200	Pump, cntfagl, iron, in-line, sgl stg, for mechanical seal, add		373.50	
5210	Pump, cntfagl, iron, in-line, sgl stg, for cast steel case, add		1,493.99	

15289 1000 Sludge Handling

15289 1200 Progressive Cavity Pump

15289 1210 Standard Pump - Single Stage

Note: These Pumps Are Used To Handle Sludges, Viscous And Shear-Sensitive Slurries, Heavy Pastes And Abrasive Media, Pumps Are Constructed With A Cast Iron Housing And Tool Steel Internals. They Are Munted On A Steel Baseplate With A Gear Mtor Coupled To The Pumps.

1211	Sludge Pump, .18" Max. Part Size, 1/4 HP, Size 15 Pumping	EA	2,631.04	
1212	Sludge Pump, .18" Max. Part Size, 1/2 HP, Size 15 Pumping	EA	2,773.77	
1213	Sludge Pump, .18" Max. Part Size, 3/4 HP, Size 15 Pumping	EA	2,890.88	
1214	Sludge Pump, .24" Max. Part Size, 3/4 HP, Size 20 Pumping	EA	3,506.40	
1215	Sludge Pump, .24" Max. Part Size, 1 HP, Size 20 Pumping	EA	3,740.64	
1216	Sludge Pump, .35" Max. Particle Size, 3/4 HP, Size 30 Pumping	EA	4,245.34	
1217	Sludge Pump, .35" Max. Part Size, 1 HP, Size 30 Pumping	EA	4,362.46	
1218	Sludge Pump, .83" Max. Part Size, 5 HP, Size 60 Pumping	EA	6,541.89	
1219	Sludge Pump, 1" Max. Particle Size, 7.5 HP, Size 70 Pumping	EA	9,617.02	
1221	Sludge Pump, 1" Max. Particle Size, 10 HP, Size 70 Pumping	EA	10,202.60	
1222	Sludge Pump, 1" Max. Particle Size, 15 HP, Size 70 Pumping	EA	11,173.96	
1223	Sludge Pump, 1.4" Max. Particle Size, 20 HP, Size 100 Pumping	EA	18,008.60	
1224	Sludge Pump, 1.7" Max. Particle Size, 30 HP, Size 120 Pumping	EA	33,859.15	
1225	Sludge Pump, 2" Max. Particle Size, 40 HP, Size 150 Pumping	EA	55,976.68	
1226	Sludge Pump, 2" Max. Particle Size, 50 HP, Size 150 Pumping	EA	56,913.60	
1227	Sludge Pump, 2" Max. Particle Size, 60 HP, Size 150 Pumping	EA	63,120.76	
1228	Sludge Pump, 2" Max. Particle Size, 75 HP, Size 150 Pumping	EA	65,344.35	
1229	Sludge Pump, 2.8" Max. Particle Size, 50 HP, Size 200 Pumping	EA	89,938.72	
1231	Sludge Pump, 2.8" Max. Particle Size, 60 HP, Size 200 Pumping	EA	96,145.87	
1232	Sludge Pump, 2.8" Max. Particle Size, 75 HP, Size 200 Pumping	EA	98,136.85	
1233	Sludge Pump, 2.8" Max. Particle Size, 100 HP, Size 200 Pumping	EA	108,793.61	
1234	Sludge Pump, 2.8" Max. Particle Size, 125 HP, Size 200 Pumping	EA	115,970.12	
1235	Sludge Pump, 2.8" Max. Particle Size, 150 HP, Size 200 Pumping	EA	120,854.16	

15289 1240 Standard Pump - Two Stage

Note: These Pumps Are Used To Handle Sludges, Viscous And Shear-Sensitive Slurries, Heavy Pastes And Abrasive Media, Pumps Are Constructed With A Cast Iron Housing And Tool Steel Internals. They Are Munted On A Steel Baseplate With A Gear Mtor Coupled To The Pumps.

1241	Sludge Pump, .35" Max. Particle Size, 1 HP, Size 30 Pumping	EA	4,830.12	
1242	Sludge Pump, .35" Max. Particle Size, 1.5 HP, Size 30 Pumping	EA	5,064.35	
1243	Sludge Pump, .47" Max. Particle Size, 2 HP, Size 40 Pumping	EA	5,554.75	
1244	Sludge Pump, .47" Max. Particle Size, 3 HP, Size 40 Pumping	EA	6,023.21	
1245	Sludge Pump, .47" Max. Particle Size, 5 HP, Size40 Pumping	EA	6,257.44	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1246	Sludge Pump, .70" Max. Particle Size, 3 HP, Size 50 Pumping	EA	7,010.35	
1247	Sludge Pump, .70" Max. Particle Size, 5 HP, Size 50 Pumping	EA	7,244.58	
1248	Sludge Pump, .70" Max. Particle Size, 7.5 HP, Size 50 Pumping	EA	8,298.63	
1249	Sludge Pump, 1" Max. Particle Size, 7.5 HP, Size 70 Pumping	EA	10,318.44	
1251	Sludge Pump, 1" Max. Particle Size, 10 HP, Size 70 Pumping	EA	10,904.02	
1252	Sludge Pump, 1" Max. Particle Size, 15 HP, Size 70 Pumping	EA	11,840.95	
1253	Sludge Pump, 1" Max. Particle Size, 20 HP, Size 70 Pumping	EA	12,894.99	
1254	Sludge Pump, 1.4" Max. Particle Size, 15 HP, Size 100 Pumping	EA	18,358.46	
1255	Sludge Pump, 1.4" Max. Particle Size, 20 HP, Size 100 Pumping	EA	19,506.20	
1256	Sludge Pump, 1.4" Max. Particle Size, 25 HP, Size 100 Pumping	EA	20,466.55	
1257	Sludge Pump, 1.4" Max. Particle Size, 30 HP, Size 100 Pumping	EA	21,913.31	
1258	Sludge Pump, 1.7" Max. Particle Size, 30 HP, Size 130 Pumping	EA	36,435.71	
1259	Sludge Pump, 1.7" Max. Particle Size, 40 HP, Size 140 Pumping	EA	39,759.00	
1261	Sludge Pump, 1.7" Max. Particle Size, 50 HP, Size 120 Pumping	EA	40,751.59	
1262	Sludge Pump, 1.7" Max. Particle Size, 60 HP, Size 120 Pumping	EA	46,958.74	
1263	Sludge Pump, 2" Max. Particle Size, 50 HP, Size 150 Pumping	EA	64,291.92	
1264	Sludge Pump, 2" Max. Particle Size, 60 HP, Size 150 Pumping	EA	70,499.07	
1265	Sludge Pump, 2" Max. Particle Size, 75 HP, Size 150 Pumping	EA	72,718.55	
1266	Sludge Pump, 2" Max. Particle Size, 100 HP, Size 150 Pumping	EA	83,379.43	
15289 1280 Open Throat Pump - Single Stage				
Note: These Pumps Are Designed For Pumping High Viscosity, High Solids Content Materials With Virtually No Flow Characteristics. The Pumps Are Constructed With Cast Iron Housings, Tool Steel Internals, Buna-N Stator And Kevlar Packing. The Pumps Are Mounted On A Baseplate With A Gear Motor Coupled To The Pump.				
1281	Open Throat Sludge Pump, .47" Max. Particle Size, 2 HP, Size	EA	5,554.75	
1282	Open Throat Sludge Pump, .47" Max. Particle Size, 1.5 HP, Size	EA	5,788.98	
1283	Open Throat Sludge Pump, .47" Max. Particle Size, 2 HP, Size	EA	6,140.33	
1284	Open Throat Sludge Pump, .47" Max. Particle Size, 3 HP, Size	EA	6,608.79	
1285	Open Throat Sludge Pump, .47" Max. Particle Size, 5 HP, Size	EA	6,843.02	
1286	Open Throat Sludge Pump, 1" Max. Particle Size, 7.5 HP, Size	EA	10,786.90	
1287	Open Throat Sludge Pump, 1" Max. Particle Size, 10 HP, Size 70	EA	11,373.76	
1288	Open Throat Sludge Pump, 1" Max. Particle Size, 15 HP, Size 70	EA	12,427.81	
1289	Open Throat Sludge Pump, 1.7" Max. Particle Size, 15 HP, Size	EA	33,319.58	
1291	Open Throat Sludge Pump, 1.7" Max. Particle Size, 20 HP, Size	EA	34,371.66	
1292	Open Throat Sludge Pump, 1.7" Max. Particle Size, 25 HP, Size	EA	35,542.82	
1293	Open Throat Sludge Pump, 1.7" Max. Particle Size, 30 HP, Size	EA	36,831.10	
1294	Open Throat Sludge Pump, 2" Max. Particle Size, 50 HP, SIZE 150	EA	63,589.22	
1295	Open Throat Sludge Pump, 2" Max. Particle Size, 75 HP, SIZE 150	EA	73,073.21	
1296	Open Throat Sludge Pump, 2.8" Max. Particle Size, 50 HP, Size	EA	100,246.55	
1297	Open Throat Sludge Pump, 2.8" Max. Particle Size, 75 HP, Size	EA	109,614.22	
1298	Open Throat Sludge Pump, 2.8" Max. Particle Size, 125 HP, Size	EA	130,030.93	
15289 1310 Open Throat Pump - Two Stage				
Note: These Pumps Are Designed For Pumping High Viscosity, High Solids Content Materials With Virtually No Flow Characteristics. The Pumps Are Constructed With Cast Iron Housings, Tool Steel Internals, Buna-N Stator And Kevlar Packing. The Pumps Are Mounted On A Baseplate With A Gear Motor Coupled To The Pump.				
1311	Open Throat Sludge Pump, .47" Max. Particle Size, 2 HP, Size	EA	6,374.56	
1312	Open Throat Sludge Pump, .47" Max. Particle Size, 3 HP, Size	EA	6,843.02	
1313	Open Throat Sludge Pump, .47" Max. Particle Size, 5 HP, Size	EA	7,077.26	
1314	Open Throat Sludge Pump, 1.4" Max. Particle Size, 15 HP, Size	EA	20,507.92	
1315	Open Throat Sludge Pump, 1.4" Max. Particle Size, 25 HP, Size	EA	22,850.24	
1316	Open Throat Sludge Pump, 1.4" Max. Particle Size, 30 HP, Size	EA	24,489.87	
1317	Open Throat Sludge Pump, 1.7" Max. Particle Size, 30 HP, Size	EA	40,695.93	
1318	Open Throat Sludge Pump, 1.7" Max. Particle Size, 40 HP, Size	EA	43,975.18	
1319	Open Throat Sludge Pump, 1.7" Max. Particle Size, 50 HP, Size	EA	44,912.10	
1321	Open Throat Sludge Pump, 1.7" Max. Particle Size, 60 HP, Size	EA	51,119.26	
1322	Open Throat Sludge Pump, 2" Max. Particle Size, 50 HP, Size 150	EA	71,787.34	
1323	Open Throat Sludge Pump, 2" Max. Particle Size, 60 HP, Size 120	EA	78,697.19	
1324	Open Throat Sludge Pump, 2" Max. Particle Size, 75 HP, Size 150	EA	81,271.34	
1325	Open Throat Sludge Pump, 2" Max. Particle Size, 100 HP, Size 150	EA	93,100.06	
15289 1330 Bridge Breaker - Single Stage				
Note: These Pumps Are Designed For Pumping High Viscosity, High Solids Content Materials With Virtually No Flow Characteristics That Tend To Bridge. The Pumps Are Constructed With Cast Iron Housings, Tool Steel Internals, Buna-N Stator And Kevlar Packing. The Pumps Are Mounted On A Baseplate With A Gear Motor Coupled To The Pump.				
1331	Bridge Breaker, .70" Max. Particle Size, 1.5 HP, Size 50	EA	9,938.25	
1332	Bridge Breaker, .70" Max. Particle Size, 2 HP, Size 50	EA	10,406.72	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1333	Bridge Breaker, .70" Max. Particle Size, 3 HP, Size 50	EA	10,875.18	
1334	Bridge Breaker, .70" Max. Particle Size, 5 HP, Size 50	EA	11,109.41	
1335	Bridge Breaker, 1.4" Max. Particle Size, 15 HP, Size 100	EA	18,751.18	
1336	Bridge Breaker, 1.4" Max. Particle Size, 20 HP, Size 100	EA	20,390.81	
1337	Bridge Breaker, 1.4" Max. Particle Size, 25 HP, Size 100	EA	21,561.97	
1338	Bridge Breaker, 1.4" Max. Particle Size, 30 HP, Size 100	EA	23,084.48	
1339	Bridge Breaker, 2" Max. Particle Size, 40 HP, Size 150 Pumping	EA	63,120.76	
1341	Bridge Breaker, 2" Max. Particle Size, 50 HP, Size 150 Pumping	EA	64,057.68	
1342	Bridge Breaker, 2" Max. Particle Size, 60 HP, SizeE 150 Pumping	EA	70,264.84	
1343	Bridge Breaker, 2" Max. Particle Size, 75 HP, Size 150 Pumping	EA	72,488.43	
1344	Bridge Breaker, 2.8" Max. Particle Size, 50 HP, Size 2	EA	100,127.82	
1345	Bridge Breaker, 2.8" Max. Particle Size, 75 HP, Size 200	EA	109,258.76	
1346	Bridge Breaker, 2.8" Max. Particle Size, 100 HP, Size 200	EA	121,676.38	
1347	Bridge Breaker, 2.8" Max. Particle Size, 150 HP, Size 200	EA	134,908.09	
15289 1350 Bridge Breaker - Two Stage				
Note: These Pumps Are Designed For Pumping High Viscosity, High Solids Content Materials With Virtually No Flow Characteristics That Tend To Bridge. The Pumps Are Constructed With Cast Iron Housings, Tool Steel Internals, Buna-N Stator And Kevlar Packing. The Pumps Are Munted On A Baseplate With A Gear Mtor Coupled To The Pump.				
1351	Bridge Breaker, .70" Max. Particle Size, 3 HP, Size 50	EA	10,887.64	
1352	Bridge Breaker, .70" Max. Particle Size, 5 HP, Size 50	EA	11,121.87	
1353	Bridge Breaker, .70" Max. Particle Size, 7.5 HP, Size 50	EA	12,175.92	
1354	Bridge Breaker, 1.4" Max. Particle Size, 15 HP, Size 100	EA	19,453.88	
1355	Bridge Breaker, 1.4" Max. Particle Size, 20 HP, Size 100	EA	21,093.50	
1356	Bridge Breaker, 1.4" Max. Particle Size, 25 HP, Size 100	EA	22,264.66	
1357	Bridge Breaker, 1.4" Max. Particle Size, 30 HP, Size 100	EA	23,904.29	
1358	Bridge Breaker, 2" Max. Particle Size, 40 HP, Size 150 Pumping	EA	65,228.84	
1359	Bridge Breaker, 2" Max. Particle Size, 50 HP, Size 150 Pumping	EA	66,282.89	
1361	Bridge Breaker, 2" Max. Particle Size, 60 HP, Size 150 Pumping	EA	72,607.16	
1362	Bridge Breaker, 2" Max. Particle Size, 75 HP, Size 150 Pumping	EA	74,947.87	
1363	Bridge Breaker, 2" Max. Particle Size, 100 HP, Size 150 Pumping	EA	83,145.19	
15290 0010 Pumps, miscellaneous				
Note: Type With Relief Valve, 1150 Rpm Dripproof Mtor, Common Base Plate. For Viscosity To 20 Centipoise; Diesel Oil, And Light Oil				
15290 0600 Rotary pump, cast iron				
0610	Rotary pump, CI, 10 GPM 1/2 HP, 1" discharge	EA	1,111.80	65.53
0614	Rotary pump, CI, 10 GPM 3/4 HP, 1" discharge	EA	1,124.41	79.08
0618	Rotary pump, CI, 10 GPM 1 HP, 1" discharge	EA	1,179.79	92.18
0620	Rotary pump, CI, 25 GPM 1 HP, 1.25" discharge	EA	1,187.26	71.46
0624	Rotary pump, CI, 25 GPM 1.5 HP, 1.25" discharge	EA	1,288.37	90.55
0628	Rotary pump, CI, 25 GPM 2 HP, 1.25" discharge	EA	1,308.08	105.20
15290 0700 Fuel oil pump				
0710	Fuel oil pump,2 stage, 3450 RPM 1/4 HP, 100 PSI	EA	1,765.28	39.03
15290 0800 Hydraulic oil pump				
0810	Hydraulic oil pump, 75 HP. 3 ph, 480 V	EA	6,431.41	492.06
15290 1000 Turbine pump, cast iron				
Note: Sump Pumps For Water Supply, Cooling Towers And Process Liquids. Milti-Stage 1750 Rpm Drip-Proof Mtor - For One To Five Ft Sump Depth				
1010	Turbine pump, CI, 50 GPM 2 HP, 3" discharge	EA	1,841.41	156.11
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		120.28	
1210	Pump, turbine, CI, for bskt stnr, galv steel, pipe 3" to 8", add		59.46	
1020	Turbine pump, CI, 100 GPM 3 HP, 4" discharge	EA	2,604.22	190.37
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		178.84	
1210	Pump, turbine, CI, for bskt stnr, galv steel, pipe 3" to 8", add		86.04	
1030	Turbine pump, CI, 250 GPM 15 HP, 6" discharge	EA	4,321.22	203.67
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		348.80	
1210	Pump, turbine, CI, for bskt stnr, galv steel, pipe 3" to 8", add		154.33	
1040	Turbine pump, CI, 500 GPM 25 HP, 6" discharge	EA	6,567.37	187.01
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		574.99	
1210	Pump, turbine, CI, for bskt stnr, galv steel, pipe 3" to 8", add		244.53	
1050	Turbine pump, CI, 1000 GPM 50 HP, 8" discharge	EA	10,090.28	250.62
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		915.81	
1210	Pump, turbine, CI, for bskt stnr, galv steel, pipe 3" to 8", add		382.90	
1060	Turbine pump, CI, 2000 GPM 100 HP, 10" discharge	EA	11,367.10	206.97
1200	Pump, turbine, CI, for ea extra column assy 60" section or less, add		1,030.44	
1220	Pump, turbine, CI, for bskt stnr, galv steel, pipe over 10", add		317.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1070	Turbine pump, CI, 3000 GPM 150 HP, 10" discharge	EA	12,794.11	243.91
1200	<i>Pump, turbine, CI, for ea extra column assy 60" section or less, add</i>		1,146.57	
1220	<i>Pump, turbine, CI, for bskt stnr, galv steel, pipe over 10", add</i>		354.30	
1080	Turbine pump, CI, 4000 GPM 200 HP, 12" discharge	EA	18,664.03	247.78
1200	<i>Pump, turbine, CI, for ea extra column assy 60" section or less, add</i>		1,714.59	
1220	<i>Pump, turbine, CI, for bskt stnr, galv steel, pipe over 10", add</i>		526.18	
1090	Turbine pump, CI, 6000 GPM 300 HP, 14" discharge	EA	30,263.28	356.12
1200	<i>Pump, turbine, CI, for ea extra column assy 60" section or less, add</i>		2,849.21	
1220	<i>Pump, turbine, CI, for bskt stnr, galv steel, pipe over 10", add</i>		868.54	
1100	Turbine pump, CI, 10,000 GPM 300 HP, 18" discharge	EA	41,649.26	417.38
1200	<i>Pump, turbine, CI, for ea extra column assy 60" section or less, add</i>		3,981.70	
1220	<i>Pump, turbine, CI, for bskt stnr, galv steel, pipe over 10", add</i>		1,208.76	
15291 0010	Pumps, pressure booster system			
15291 2000	Variable speed base, 100' head			
15291 2010	Duplex			
2020	Pump, 400GPM 7.5HP 4" disch, var sp, cntrl, start, dx, booster sys,	EA	27,840.77	746.01
15291 2025	Triplex			
2030	Pump, 1000GPM 15HP 6" disch, var sp, cntrl, start, trx, booster sys,	EA	41,353.88	1,047.59
2040	Pump, 1700GPM 30HP 6" disch, var sp, cntrl, start, trx, booster sys,	EA	47,494.17	1,193.17
15292 0010	Pumps, pedestal sump			
15292 2000	Sump pump, single stage			
Note: Mounted On Steel Support Plate And Supplied With Cast Iron Strainer, 1750 Rpm Drip-Proof Motor				
2010	Sump pump, pedestal, 1.5" discharge, 25 GPM 1 HP, single	EA	2,285.86	77.45
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		495.77	
2020	Sump pump, pedestal, 2" discharge, 75 GPM 1-1/2 HP,	EA	2,840.14	111.51
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		619.21	
2030	Sump pump, pedestal, 2.5" discharge, 100 GPM 2 HP, single	EA	2,983.26	122.05
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		641.01	
2040	Sump pump, pedestal, 3" discharge, 150 GPM 3 HP, single	EA	2,892.87	137.80
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		599.36	
2050	Sump pump, pedestal, 3" discharge, 200 GPM 3 HP, single	EA	2,969.38	145.43
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		606.10	
2060	Sump pump, pedestal, 4" discharge, 300 GPM 10 HP,	EA	4,378.69	217.16
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		920.62	
2070	Sump pump, pedestal, 5" discharge, 500 GPM 15 HP,	EA	4,642.68	181.81
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		970.80	
2080	Sump pump, pedestal, 6" discharge, 800 GPM 20 HP,	EA	12,867.44	234.96
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		3,008.00	
2090	Sump pump, pedestal, 6" discharge, 1000 GPM 30 HP,	EA	15,666.71	306.98
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		3,671.08	
2100	Sump pump, pedestal, 8" discharge, 1600 GPM 50 HP,	EA	17,994.56	384.68
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		4,208.56	
2110	Sump pump, pedestal, 8" discharge, 2000 GPM 60 HP,	EA	19,946.83	609.44
1200	<i>Sump pump, for ea extra column assy 60" section or less, add</i>		4,653.46	
15292 2200	Sump Pump Accessories, Float Sw & Covers			
2202	Sump pump, for genl purpose float switch, copper coated float, ad	EA	554.95	37.47
2206	Sump pump, for 24" square steel sump cover, add	EA	192.59	8.52
2210	Sump pump, for 36" square steel sump cover, add	EA	368.67	9.47
2214	Sump pump, for 48" square steel sump cover, add	EA	614.23	10.64
2218	Sump pump, for 60" square steel sump cover, add	EA	937.56	13.31
2222	Sump pump, for 72" square steel sump cover, add	EA	1,328.87	15.97
15293 0010	Pumps, positive displacement			
15293 0100	Adjustable flow			
0120	Pumps, positive displacemt, 200 PSI, adj flow, 25 GPH [0 - 100%	EA	1,537.67	
0130	Pumps, positive displacemt, 250 PSI, adj flow, 28 GPH [0 - 100%	EA	1,877.21	
15294 0010	Pumps, sewage ejector			
15294 0100	Simplex system including tank, cover			
Note: Highwater Alarm Basin, Cover, 25 Ft Head, 230 Volt				
0700	Pumps, sewage ejctr, 1/2HP, 2" disch, 70 gal polthn tk, 12 GPM	EA	967.03	55.10
0730	Pumps, sewage ejctr, .7 HP, 2" disch, 70 gal polthn tk, 87 GPM	EA	1,176.94	72.91
0760	Pumps, sewage ejctr, 1 HP, 2" disch, 70 gal polthn tk, 134 GPM	EA	1,279.22	86.04
15294 4000	Duplex system with alternator			
4005	6/10 HP Subm Sewage Ejector, Alt. & Duplex	EA	1,787.72	154.81

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4010	3/4 HP Subm Sewage Ejector, Alt. & Duplex	EA	2,174.48	172.23
4015	1 HP Subm Sewage Ejector, Alt. & Duplex	EA	2,438.60	215.32
4020	Pumps, sewage ejector, 120 GPM 1-1/2 HP, duplex system w/	EA	7,742.43	307.77
4030	Pumps, sewage ejector, 200 GPM 2 HP, duplex system w/ alternator	EA	9,506.08	349.00
4040	Pumps, sewage ejector, 250 GPM 3 HP, duplex system w/ alternator	EA	10,587.33	431.46
4050	Pumps, sewage ejector, 350 GPM 5 HP, duplex system w/ alternator	EA	12,519.10	541.36
15295 0010	Pumps, pneumatic ejector			
Note: Level Controls, Inlet And Outlet Check Valves, Gate Valves, And Standard Cross Connections. Note: Costs Do Not Include Air Compressor, Air Receiver, Nor Air Piping And Fittings				
0050	Pumps, pneumatic ejector w/receiver, duplex, 30 GPM	EA	10,245.49	122.27
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		2,049.10	
0060	Pumps, pneumatic ejector w/receiver, duplex, 50 GPM	EA	14,825.46	196.31
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		2,965.09	
0070	Pumps, pneumatic ejector w/receiver, duplex, 100 GPM	EA	25,638.31	339.61
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		5,127.66	
0080	Pumps, pneumatic ejector w/receiver, duplex, 150 GPM	EA	40,027.64	525.30
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		8,005.53	
0090	Pumps, pneumatic ejector w/receiver, duplex, 200 GPM	EA	50,961.11	675.63
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		10,192.22	
0100	Pumps, pneumatic ejector w/receiver, duplex, 250 GPM	EA	65,502.41	968.99
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		13,100.48	
0110	Pumps, pneumatic ejector w/receiver, duplex, 300 GPM	EA	80,546.04	1,507.62
0200	<i>Pump, pneu, ejctr, duplex, for cast iron receivers, add</i>		16,109.21	
0210	Pump, pneu, ejctr, duplex, for back-up mechanical level	EA	554.95	
9010	Pump lubrication, oil / gear lube	EA	70.45	
9020	Pump lubrication, grease	EA	64.91	
15296 0010	Pumps, submersible			
15296 8000	Sump pump			
8010	Sump pump, submersible, 15' hd, 1.5" discharge, 15 GPM	EA	796.19	39.33
8020	Sump pump, submersible, 15' hd, 1.5" discharge, 42 GPM	EA	801.45	42.96
8030	Sump pump, submersible, 15' hd, 1.5" discharge, 52 GPM	EA	804.44	29.08
8110	Sump pump, submersible, rated @ 20' hd, 60 GPM 2" disch	EA	384.62	14.49
8120	Sump pump, submersible, rated @ 20' hd, 120 GPM 2" disch	EA	541.95	11.65
8125	Submersible Pump, 160 GPM 20' Head, 3"(7.6cm) Discharge	EA	4,996.09	155.93
8130	Sump pump, submersible, rated @ 20' hd, 300 GPM 3" disch	EA	907.83	35.66
15297 0010	Pumps, vacuum			
15297 2000	Vacuum Pumps, Dental Oral			
2001	165 SCFM Duplex w/30" X 66", 77 Gal. Separator	EA	18,531.17	
15298 0010	Pumps, well			
2020	Submersible well pump, for 180' deep, 4" disch, 250-770 GPH	EA	1,336.47	219.91
2030	Submersible well pump, 550-1600 GPH, for 180' deep, 4" disch	EA	2,375.93	371.73
2040	Submersible well pump, 800-2200 GPH, for 180' deep, 4" disch	EA	2,468.44	267.87
2050	Submersible well pump, 50-125 GPH, 50'-125' deep, 6" disch	EA	1,650.48	188.33
2060	Submersible well pump, 15-135 GPH, 200'-500' deep, 6" disch	EA	2,554.01	296.26
15298 3000	Sump Pumps, Cast Iron Bronze Fitted			
15298 3100	Sump Pumps, 1750 Rpm			
3111	25 Gpm 1"Dp, 25 Head, 1/3 Hp	EA	3,883.92	
3112	25 Gpm 1"Dp, 50 Head, 1 Hp	EA	4,256.30	
3113	25 Gpm 1"Dp, 75 Head, 1-1/2 Hp	EA	4,256.30	
3114	25 Gpm 1-1/2"Dp, 100 Head, 5 Hp	EA	4,975.19	
3115	25 Gpm 1-1/2"Dp, 125 Head, 5 Hp	EA	4,975.19	
3116	25 Gpm 1-1/2"Dp, 150 Head, 7-1/2 Hp	EA	6,377.00	
3117	25 Gpm 1-1/2"Dp, 175 Head, 10 Hp	EA	6,377.00	
3211	50 Gpm 1-1/2"Dp, 25 Head, 3/4 Hp	EA	4,168.60	
3212	50 Gpm 1"Dp, 50 Head, 1-1/2 Hp	EA	4,256.30	
3213	50 Gpm 1"Dp, 75 Head, 2 Hp	EA	4,256.30	
3214	50 Gpm 1-1/2"Dp, 100 Head, 5 Hp	EA	4,975.19	
3215	50 Gpm 1-1/2"Dp, 125 Head, 7-1/2 Hp	EA	4,975.19	
3216	50 Gpm 1-1/2"Dp, 150 Head, 7-1/2 Hp	EA	6,377.00	
3311	75 Gpm 1-1/2"Dp, 25 Head, 1 Hp	EA	4,168.60	
3312	75 Gpm 1-1/2"Dp, 50 Head, 1-1/2 H p	EA	4,256.30	
3313	75 Gpm 1-1/2"Dp, 75 Head, 5 Hp	EA	4,975.19	
3314	75 Gpm 1-1/2"Dp, 100 Head, 5 Hp	EA	4,975.19	
3315	75 Gpm 1-1/2"Dp, 125 Head, 7-1/2 Hp	EA	6,377.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3316	75 Gpm 1-1/2"Dp, 150 Head, 10 Hp	EA	6,377.00	
3411	100 Gpm 1-1/2"Dp, 25 Head, 1-1/2 Hp	EA	4,506.48	
3412	100 Gpm 1-1/2"Dp, 50 Head, 3 Hp	EA	4,506.48	
3413	100 Gpm 1-1/2"Dp, 75 Head, 5 Hp	EA	4,975.19	
3414	100 Gpm 1-1/2"Dp, 100 Head, 7-1/2 Hp	EA	4,975.19	
3415	100 Gpm 1-1/2"Dp, 125 Head, 7-1/2 Hp	EA	6,377.00	
3416	100 Gpm 1-1/2"Dp, 150 Head, 10	EA	6,377.00	
3511	150 Gpm 2"Dp, 25 Head, 2 Hp	EA	5,200.92	
3512	150 Gpm 2"Dp, 50 Head, 3 Hp	EA	5,200.92	
3513	150 Gpm 2"Dp, 75 Head, 5 Hp	EA	5,200.92	
3514	150 Gpm 2"Dp, 100 Head, 7-1/2 Hp	EA	5,485.60	
3515	150 Gpm 1-1/2"Dp, 125 Head, 10	EA	7,190.22	
3516	150 Gpm 1-1/2"Dp, 150 Head, 15	EA	7,190.22	
3517	150 Gpm 1-1/2"Dp, 175 Head, 15	EA	7,190.22	
3611	200 Gpm 4"Dp, 25 Head, 3 Hp	EA	5,990.24	
3612	200 Gpm 4"Dp, 50 Head, 5 Hp	EA	5,990.24	
3613	200 Gpm 3"Dp, 75 Head, 7-1/2 Hp	EA	7,160.58	
3614	200 Gpm 3"Dp, 100 Head, 10 Hp	EA	7,160.58	
3615	200 Gpm 1-1/2"Dp, 125 Head, 15	EA	4,780.53	
3616	200 Gpm 1-1/2"Dp, 150 Head, 15	EA	4,780.53	
3617	200 Gpm 2"Dp, 175 Head, 20 Hp	EA	7,190.22	
3711	300 Gpm 4"Dp, 50 Head, 7-1/2 Hp	EA	5,990.24	
3712	300 Gpm 3"Dp, 75 Head, 10 Hp	EA	7,160.58	
3713	300 Gpm 3"Dp, 100 Head, 15 Hp	EA	7,434.63	
3714	300 Gpm 3"Dp, 125 Head, 15 Hp	EA	7,434.63	
3715	300 Gpm 3"Dp, 150 Head, 20 Hp	EA	7,720.75	
3716	300 Gpm 3"Dp, 175 Head, 25 Hp	EA	7,720.75	
3811	400 Gpm 4"Dp, 50 Head, 7-1/2 Hp	EA	5,990.24	
3812	400 Gpm 3"Dp, 75 Head, 15 Hp	EA	7,434.63	
3813	400 Gpm 3"Dp, 100 Head, 15 Hp	EA	7,434.63	
3814	400 Gpm 3"Dp, 125 Head, 20 Hp	EA	7,720.75	
3815	400 Gpm 3"Dp, 150 Head, 25 Hp	EA	7,720.75	
3816	400 Gpm 3"Dp, 175 Head, 30 Hp	EA	7,720.75	
3911	500 Gpm 4"Dp, 50 Head, 10 Hp	EA	5,990.24	
3912	500 Gpm 3"Dp, 75 Head, 15 Hp	EA	7,434.63	
3913	500 Gpm 3"Dp, 100 Head, 20 Hp	EA	7,434.63	
3914	500 Gpm 3"Dp, 125 Head, 25 Hp	EA	7,720.75	
3915	500 Gpm 3"Dp, 150 Head, 30 Hp	EA	7,720.75	
3916	500 Gpm 3"Dp, 175 Head, 40 Hp	EA	7,720.75	
15298 4100	Sump Pumps, 1750 Rpm cont.			
4111	600 Gpm 4"Dp, 50 Head, 15 Hp	EA	7,797.51	
4112	600 Gpm 4"Dp, 75 Head, 15 Hp	EA	8,068.77	
4113	600 Gpm 4"Dp, 100 Head, 20 Hp	EA	8,068.77	
4114	600 Gpm 4"Dp, 125 Head, 30 Hp	EA	8,068.77	
4115	600 Gpm 4"Dp, 150 Head, 40 Hp	EA	8,120.53	
4116	600 Gpm 3"Dp, 175 Head, 40 Hp	EA	8,120.53	
4211	800 Gpm 4"Dp, 50 Head, 15 Hp	EA	8,068.77	
4212	800 Gpm 4"Dp, 75 Head, 20 Hp	EA	8,068.77	
4213	800 Gpm 4"Dp, 100 Head, 25 Hp	EA	8,068.77	
4214	800 Gpm 4"Dp, 125 Head, 40 Hp	EA	8,120.53	
4215	800 Gpm 4"Dp, 150 Head, 50 Hp	EA	8,120.53	
4311	1000 Gpm 4"Dp, 50 Head, 20 Hp	EA	8,068.77	
4312	1000 Gpm 4"Dp, 75 Head, 25 Hp	EA	8,068.77	
4313	1000 Gpm 4"Dp, 100 Head, 40 Hp	EA	8,068.77	
4314	1000 Gpm 4"Dp, 125 Head, 50 Hp	EA	8,120.53	
4315	1000 Gpm 6"Dp, 150 Head, 60 Hp	EA	14,426.55	
4411	1200 Gpm 4"Dp, 100 Head, 40 Hp	EA	8,068.77	
4412	1200 Gpm 6"Dp, 125 Head, 50 Hp	EA	14,426.55	
4511	1400 Gpm 6"Dp, 75 Head, 40 Hp	EA	14,426.55	
4512	1400 Gpm 6"Dp, 100 Head, 50 Hp	EA	14,426.55	
4513	1400 Gpm 6"Dp, 125 Head, 60 Hp	EA	14,978.50	
4611	1600 Gpm 6"Dp, 75 Head, 50 Hp	EA	14,426.55	
4612	1600 Gpm 6"Dp, 100 Head, 60 Hp	EA	14,426.55	
4711	1800 Gpm 6"Dp, 75 Head, 60 Hp	EA	14,426.55	
4712	1800 Gpm 6"Dp, 100 Head, 75 Hp	EA	14,978.50	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4811	2000 Gpm 8"Dp, 75 Head, 50 Hp	EA	15,552.31	
4812	2000 Gpm 8"Dp, 100 Head, 60 Hp	EA	16,104.26	
15298 5100	Sump Pumps, 3600 Rpm			
5111	25 Gpm 1"Dp, 50 Head, 3/4 Hp	EA	4,178.67	
5112	25 Gpm 1"Dp, 75 Head, 1 Hp	EA	4,178.67	
5113	25 Gpm 1"Dp, 100 Head, 2 Hp	EA	4,178.67	
5114	25 Gpm 1"Dp, 150 Head, 5 Hp	EA	4,714.95	
5115	25 Gpm 1"Dp, 200 Head, 5 Hp	EA	4,714.95	
5116	25 Gpm 1"Dp, 250 Head, 7-1/2 Hp	EA	4,714.95	
5117	25 Gpm 1"Dp, 300 Head, 10 Hp	EA	4,714.95	
5121	50 Gpm 1"Dp, 50 Head, 1-1/2 Hp	EA	4,178.67	
5122	50 Gpm 1-1/2"Dp, 75 Head, 2 Hp	EA	4,631.56	
5123	50 Gpm 1-1/2"Dp, 100 Head, 3 Hp	EA	4,631.56	
5124	50 Gpm 1"Dp, 150 Head, 5 Hp	EA	4,714.95	
5125	50 Gpm 1"Dp, 200 Head, 7-1/2 Hp	EA	4,714.95	
5126	50 Gpm 1"Dp, 250 Head, 10 Hp	EA	4,714.95	
5127	50 Gpm 1"Dp, 300 Head, 15 Hp	EA	4,986.21	
5131	100 Gpm 1-1/2"Dp, 50 Head, 2 Hp	EA	4,631.56	
5132	100 Gpm 1-1/2"Dp, 75 Head, 3 Hp	EA	4,631.56	
5133	100 Gpm 1-1/2"Dp, 100 Head, 5 Hp	EA	4,631.56	
5134	100 Gpm 1"Dp, 150 Head, 7-1/2 Hp	EA	4,714.95	
5135	100 Gpm 1"Dp, 200 Head, 15 Hp	EA	4,986.21	
5136	100 Gpm 1"Dp, 250 Head, 15 Hp	EA	4,986.21	
5137	100 Gpm 1-1/2"Dp, 300 Head, 20	EA	6,402.41	
5141	150 Gpm 1-1/2"Dp, 50 Head, 3 Hp	EA	4,631.56	
5142	150 Gpm 1-1/2"Dp, 75 Head, 5 Hp	EA	4,631.56	
5143	150 Gpm 1-1/2"Dp, 100 Head, 7-1/2 Hp	EA	4,631.56	
5144	150 Gpm 1"Dp, 150 Head, 15 Hp	EA	4,714.95	
5145	150 Gpm 1"Dp, 200 Head, 20 Hp	EA	4,986.21	
5146	150 Gpm 1"Dp, 250 Head, 20 Hp	EA	4,986.21	
5147	150 Gpm 2"Dp, 300 Head, 30 Hp	EA	7,227.68	
5151	200 Gpm 1-1/2"Dp, 50 Head, 7-1/2 Hp	EA	4,631.56	
5152	200 Gpm 1-1/2"Dp, 75 Head, 7-1/2 Hp	EA	4,631.56	
5153	200 Gpm 1-1/2"Dp, 100 Head, 10	EA	4,631.56	
5154	200 Gpm 1-1/2"Dp, 150 Head, 20	EA	4,631.56	
5155	200 Gpm 1-1/2"Dp, 200 Head, 20	EA	4,902.82	
5156	200 Gpm 1-1/2"Dp, 250 Head, 25	EA	4,902.82	
5157	200 Gpm 2"Dp, 300 Head, 30 Hp	EA	7,227.68	
5161	250 Gpm 2"Dp, 150 Head, 20 Hp	EA	7,227.68	
5162	250 Gpm 2"Dp, 200 Head, 25 Hp	EA	7,227.68	
5163	250 Gpm 2"Dp, 250 Head, 30 Hp	EA	7,227.68	
15298 6100	Add For Extra Column Assemblies			
6111	For Extra Column Assm 5'-0", 1- 1/2"	EA	733.26	
6112	For Extra Column Assm 5'-0", 2"	EA	920.16	
6113	For Extra Column Assm 5'-0", 3"	EA	1,006.43	
6114	For Extra Column Assm 5'-0", 4"	EA	1,092.69	
6115	For Extra Column Assm 5'-0", 6"	EA	1,135.83	
6116	For Extra Column Assm 5'-0", 8"	EA	1,186.15	
15298 6200	Float Swith			
6211	For Flt. Sw. Cpr. Coated Flt, G. P.	EA	632.41	
6212	For Flt. Sw. Cpr. Coated Flt, W. P.	EA	668.35	
6213	For Flt. Sw. Cpr. Coated Flt, E. P.	EA	665.43	
15298 6300	Support Plate			
6311	Round Or Square 24"	EA	250.92	
6312	Round Or Square 30"	EA	267.66	
6313	Round Or Square 36"	EA	396.32	
6314	Round Or Square 40"	EA	525.64	
6315	Round Or Square 42"	EA	543.70	
6316	Round Or Square 48"	EA	568.79	
6317	Round Or Square 54"	EA	890.26	
6318	Round Or Square 60"	EA	1,207.77	
6319	Round Or Square 72"	EA	1,514.93	
6321	Round Or Square 78"	EA	1,948.71	
15299 4000	Sewage Pumps, Horizontal,			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15299 4100	Sewage Pumps, Horizontal, 1750 Rpm 1-1/2" Soli			
4111	15"X48", 50Gpm 2"Dp, 20H, 1 Hp	EA	2,540.93	
4112	15"X48", 50Gpm 2"Dp, 25H, 1-1/2	EA	2,540.93	
4113	15"X48", 50Gpm 2"Dp, 35H, 2 Hp	EA	2,540.93	
4114	15"X48", 50Gpm 2"Dp, 55H, 3 Hp	EA	2,540.93	
4115	15"X48", 50Gpm 2"Dp, 46H, 5 Hp	EA	2,540.93	
4116	15"X48", 50Gpm 2"Dp, 80H, 25 Hp	EA	2,540.93	
4117	15"X48", 50Gpm 2"Dp, 95H, 10 Hp	EA	2,540.93	
4121	15"X48", 100Gpm 2"Dp, 15H, 1 Hp	EA	2,540.93	
4122	15"X48", 100Gpm 2"Dp, 25H, 1-1/2 H p	EA	2,540.93	
4123	15"X48", 100Gpm 2"Dp, 30H, 2 Hp	EA	2,540.93	
4124	15"X48", 100Gpm 2"Dp, 45H, 3 Hp	EA	2,540.93	
4125	15"X48", 100Gpm 2"Dp, 50H, 5 Hp	EA	2,861.02	
4126	15"X48", 100Gpm 2"Dp, 60H, 5 Hp	EA	2,861.02	
4127	15"X48", 100Gpm 2"Dp, 80H, 7-1/2 H p	EA	2,861.02	
4128	15"X48", 100Gpm 2"Dp, 95H, 10 Hp	EA	2,861.02	
4131	15"X48", 150Gpm 2"Dp, 20H, 1-1/2 H p	EA	2,540.93	
4132	15"X48", 150Gpm 2"Dp, 40H, 3 Hp	EA	2,540.93	
4133	15"X48", 150Gpm 2"Dp, 46H, 5 Hp	EA	2,540.93	
4134	15"X48", 150Gpm 2"Dp, 56H, 5 Hp	EA	2,861.02	
4135	15"X48", 150Gpm 2"Dp, 75H, 7-1/2 H p	EA	2,861.02	
4136	15"X48", 150Gpm 2"Dp, 90H, 10 Hp	EA	2,861.02	
4141	15"X48", 150Gpm 2"Dp, 30H, 3 Hp	EA	2,540.93	
4142	15"X48", 150Gpm 2"Dp, 40H, 5 Hp	EA	2,540.93	
4143	15"X48", 150Gpm 2"Dp, 50H, 5 Hp	EA	2,861.02	
4144	15"X48", 150Gpm 2"Dp, 70H, 7-1/2 H p	EA	2,861.02	
4145	15"X48", 150Gpm 2"Dp, 85H, 10 Hp	EA	2,861.02	
4151	15"X48", 150Gpm 2"Dp, 45H, 5 Hp	EA	2,861.02	
4152	15"X48", 150Gpm 2"Dp, 65H, 7-1/2 H p	EA	2,861.02	
4153	15"X48", 150Gpm 2"Dp, 80H, 10 Hp	EA	2,861.02	
15299 4200	Sewage Pumps, Horizontal, 1750 Rpm 2" Solids			
4211	15"X48", 100Gpm 3"Dp, 35H, 3 Hp	EA	3,465.07	
4212	15"X48", 100Gpm 3"Dp, 50H, 5 Hp	EA	3,465.07	
4213	15"X48", 100Gpm 3"Dp, 70H, 7-1/2 H p	EA	3,465.07	
4214	15"X48", 100Gpm 3"Dp, 90H, 10 Hp	EA	3,465.07	
4215	20"X54", 100Gpm 3"Dp, 95H, 15 Hp	EA	3,739.12	
4216	20"X54", 100Gpm 3"Dp, 110H, 20 Hp	EA	4,277.96	
4217	20"X54", 100Gpm 3"Dp, 140H, 25 Hp	EA	4,277.96	
4218	20"X54", 100Gpm 3"Dp, 160H, 30 Hp	EA	4,277.96	
4221	15"X48", 200Gpm 3"Dp, 30H, 3 Hp	EA	3,465.07	
4222	15"X48", 200Gpm 3"Dp, 45H, 5 Hp	EA	3,465.07	
4223	15"X48", 200Gpm 3"Dp, 65H, 7-1/2 H p	EA	3,465.07	
4224	15"X48", 200Gpm 3"Dp, 80H, 10 Hp	EA	3,465.07	
4225	20"X54", 200Gpm 3"Dp, 90H, 15 Hp	EA	3,736.33	
4226	20"X54", 200Gpm 3"Dp, 110H, 20 Hp	EA	4,275.17	
4227	20"X54", 200Gpm 3"Dp, 125H, 25 Hp	EA	4,275.17	
4228	20"X54", 200Gpm 3"Dp, 150H, 30 Hp	EA	4,275.17	
4231	15"X48", 300Gpm 3"Dp, 40H, 5 Hp	EA	3,465.07	
4232	15"X48", 300Gpm 3"Dp, 60H, 7-1/2 H p	EA	3,465.07	
4233	15"X48", 300Gpm 3"Dp, 75H, 10 Hp	EA	3,465.07	
4234	20"X54", 300Gpm 3"Dp, 90H, 15 Hp	EA	4,275.17	
4235	20"X54", 300Gpm 3"Dp, 110H, 20 Hp	EA	4,275.17	
4236	20"X54", 300Gpm 3"Dp, 125H, 25 Hp	EA	4,275.17	
4237	20"X54", 300Gpm 3"Dp, 150H, 30 Hp	EA	4,275.17	
4241	15"X48", 400Gpm 3"Dp, 30H, 5 Hp	EA	3,465.07	
4242	15"X48", 400Gpm 3"Dp, 50H, 7-1/2 H p	EA	3,465.07	
4243	15"X48", 400Gpm 3"Dp, 70H, 10 Hp	EA	3,465.07	
4244	20"X54", 400Gpm 3"Dp, 80H, 15 Hp	EA	3,736.33	
4245	20"X54", 400Gpm 3"Dp, 100H, 20 Hp	EA	4,275.17	
4246	20"X54", 400Gpm 3"Dp, 115H, 25 Hp	EA	4,275.17	
4247	20"X54", 400Gpm 3"Dp, 140H, 30 Hp	EA	4,275.17	
4251	15"X48", 500Gpm 3"Dp, 60H, 10 Hp	EA	4,003.91	
4252	20"X54", 500Gpm 3"Dp, 75H, 15 Hp	EA	4,275.17	
4253	20"X54", 500Gpm 3"Dp, 90H, 20 Hp	EA	4,275.17	
4254	20"X54", 500Gpm 3"Dp, 110H, 25 Hp	EA	4,275.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4255	20"X54", 500Gpm 3"Dp, 130H, 30 Hp	EA	4, 275. 17	
4261	20"X54", 600Gpm 3"Dp, 80H, 20 Hp	EA	4, 275. 17	
4262	20"X54", 600Gpm 3"Dp, 100H, 25 Hp	EA	4, 275. 17	
4263	20"X54", 600Gpm 3"Dp, 120H, 30 Hp	EA	4, 275. 17	
15299 4300	Sewage Pumps, Horizontal, 1750 Rpm 2-1/2" Soli			
4311	15"X48", 100Gpm 3"Dp, 20H, 2 Hp	EA	2, 861. 02	
4312	15"X48", 100Gpm 3"Dp, 30H, 3 Hp	EA	2, 861. 02	
4313	15"X48", 100Gpm 3"Dp, 40H, 5 Hp	EA	2, 861. 02	
4314	15"X48", 100Gpm 3"Dp, 50H, 7-1/2 H p	EA	2, 861. 02	
4315	15"X48", 100Gpm 3"Dp, 60H, 7-1/2 H p	EA	3, 554. 38	
4316	15"X48", 100Gpm 3"Dp, 75H, 10 Hp	EA	3, 554. 38	
4317	20"X54", 100Gpm 3"Dp, 95H, 15 Hp	EA	3, 828. 43	
4318	20"X54", 100Gpm 3"Dp, 110H, 20 Hp	EA	4, 894. 06	
4319	20"X54", 100Gpm 3"Dp, 130H, 25 Hp	EA	4, 894. 06	
4321	20"X54", 100Gpm 3"Dp, 150H, 30 Hp	EA	4, 891. 27	
4331	15"X48", 200Gpm 3"Dp, 20H, 3 Hp	EA	2, 861. 02	
4332	15"X48", 200Gpm 3"Dp, 35H, 5 Hp	EA	2, 861. 02	
4333	15"X48", 200Gpm 3"Dp, 45H, 7-1/2 H p	EA	2, 861. 02	
4334	15"X48", 200Gpm 3"Dp, 55H, 7-1/2 H p	EA	2, 861. 02	
4335	15"X48", 200Gpm 3"Dp, 70H, 10 Hp	EA	3, 554. 38	
4336	20"X54", 200Gpm 3"Dp, 90H, 15 Hp	EA	3, 825. 64	
4337	20"X54", 200Gpm 3"Dp, 110H, 20 Hp	EA	4, 891. 27	
4338	20"X54", 200Gpm 3"Dp, 125H, 25 Hp	EA	4, 891. 27	
4339	20"X54", 200Gpm 3"Dp, 150H, 30 Hp	EA	4, 891. 27	
4341	15"X48", 300Gpm 3"Dp, 30H, 5 Hp	EA	2, 861. 02	
4342	15"X48", 300Gpm 3"Dp, 45H, 7-1/2 H p	EA	2, 861. 02	
4343	15"X48", 300Gpm 3"Dp, 60H, 10 Hp	EA	3, 554. 38	
4344	20"X54", 300Gpm 3"Dp, 80H, 15 Hp	EA	3, 825. 64	
4345	20"X54", 300Gpm 3"Dp, 100H, 20 Hp	EA	4, 891. 27	
4346	20"X54", 300Gpm 3"Dp, 120H, 25 Hp	EA	4, 891. 27	
4347	20"X54", 300Gpm 3"Dp, 140H, 30 Hp	EA	4, 891. 27	
4351	15"X48", 400Gpm 3"Dp, 25H, 5 Hp	EA	2, 861. 02	
4352	15"X48", 400Gpm 3"Dp, 40H, 7-1/2 H p	EA	2, 861. 02	
4353	15"X48", 400Gpm 3"Dp, 60H, 10 Hp	EA	3, 554. 38	
4354	20"X54", 400Gpm 3"Dp, 75H, 15 Hp	EA	3, 825. 64	
4355	20"X54", 400Gpm 3"Dp, 100H, 20 Hp	EA	4, 891. 27	
4356	20"X54", 400Gpm 3"Dp, 115H, 25 Hp	EA	4, 891. 27	
4357	20"X54", 400Gpm 3"Dp, 140H, 30 Hp	EA	4, 891. 27	
4361	15"X48", 500Gpm 3"Dp, 34H, 7-1/2 H p	EA	2, 861. 02	
4362	15"X48", 500Gpm 3"Dp, 50H, 10 Hp	EA	3, 554. 38	
4363	20"X54", 500Gpm 3"Dp, 70H, 15 Hp	EA	3, 825. 64	
4364	20"X54", 500Gpm 3"Dp, 95H, 20 Hp	EA	4, 891. 27	
4365	20"X54", 500Gpm 3"Dp, 110H, 25 Hp	EA	4, 891. 27	
4366	20"X54", 500Gpm 3"Dp, 130H, 30 Hp	EA	4, 891. 27	
4371	15"X48", 600Gpm 4"Dp, 40H, 10 Hp	EA	3, 554. 38	
4372	20"X54", 600Gpm 4"Dp, 60H, 15 Hp	EA	3, 825. 64	
4373	20"X54", 600Gpm 4"Dp, 70H, 15 Hp	EA	4, 891. 27	
4374	20"X54", 600Gpm 4"Dp, 90H, 20 Hp	EA	4, 891. 27	
4375	20"X54", 600Gpm 4"Dp, 110H, 25 Hp	EA	4, 891. 27	
4376	20"X54", 600Gpm 4"Dp, 125H, 30 Hp	EA	4, 891. 27	
4381	20"X54", 700Gpm 4"Dp, 60H, 15 Hp	EA	3, 825. 64	
4382	20"X54", 700Gpm 4"Dp, 80H, 20 Hp	EA	4, 891. 27	
4383	20"X54", 700Gpm 4"Dp, 100H, 25 Hp	EA	4, 891. 27	
4384	20"X54", 700Gpm 4"Dp, 120H, 30 Hp	EA	4, 891. 27	
4391	20"X54", 800Gpm 4"Dp, 100H, 30 Hp	EA	4, 891. 27	
15299 4400	Sewage Pumps, Horizontal, 1750 Rpm 3" Solids			
4411	18"X48", 100Gpm 4"Dp, 20H, 2 Hp	EA	2, 861. 02	
4412	18"X48", 100Gpm 4"Dp, 25H, 3 Hp	EA	2, 861. 02	
4413	18"X48", 100Gpm 4"Dp, 35H, 5 Hp	EA	2, 861. 02	
4414	18"X48", 100Gpm 4"Dp, 40H, 5 Hp	EA	2, 861. 02	
4415	18"X48", 100Gpm 4"Dp, 45H, 7-1/2 H p	EA	2, 861. 02	
4421	18"X48", 200Gpm 4"Dp, 20H, 3 Hp	EA	2, 861. 02	
4422	18"X48", 200Gpm 4"Dp, 30H, 5 Hp	EA	2, 861. 02	
4423	18"X48", 200Gpm 4"Dp, 40H, 5 Hp	EA	2, 861. 02	
4424	18"X48", 200Gpm 4"Dp, 50H, 7-1/2 H p	EA	3, 593. 51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4425	20"X54", 200Gpm 4"Dp, 60H, 10 Hp	EA	3, 593. 51	
4426	20"X54", 200Gpm 4"Dp, 75H, 15 Hp	EA	3, 864. 77	
4427	20"X54", 200Gpm 4"Dp, 90H, 20 Hp	EA	3, 864. 77	
4428	20"X54", 200Gpm 4"Dp, 100H, 25 Hp	EA	4, 891. 27	
4429	20"X54", 200Gpm 4"Dp, 120H, 30 Hp	EA	4, 891. 27	
4431	18"X48", 400Gpm 4"Dp, 25H, 5 Hp	EA	2, 861. 02	
4432	18"X48", 400Gpm 4"Dp, 35H, 7-1/2 H p	EA	2, 861. 02	
4433	18"X48", 400Gpm 4"Dp, 40H, 7-1/2 H p	EA	3, 593. 51	
4434	20"X54", 400Gpm 4"Dp, 50H, 10 Hp	EA	3, 593. 51	
4435	20"X54", 400Gpm 4"Dp, 70H, 15 Hp	EA	3, 864. 77	
4436	20"X54", 400Gpm 4"Dp, 80H, 20 Hp	EA	3, 864. 77	
4437	20"X54", 400Gpm 4"Dp, 100H, 25 Hp	EA	4, 891. 27	
4438	20"X54", 400Gpm 4"Dp, 115H, 30 Hp	EA	4, 891. 27	
4441	18"X48", 600Gpm 4"Dp, 20H, 5 Hp	EA	3, 593. 51	
4442	18"X48", 600Gpm 4"Dp, 30H, 7-1/2 H p	EA	3, 593. 51	
4443	20"X54", 600Gpm 4"Dp, 40H, 10 Hp	EA	3, 593. 51	
4444	20"X54", 600Gpm 4"Dp, 60H, 15 Hp	EA	3, 864. 77	
4445	20"X54", 600Gpm 4"Dp, 70H, 20 Hp	EA	3, 864. 77	
4446	20"X54", 600Gpm 4"Dp, 90H, 25 Hp	EA	4, 891. 27	
4447	20"X54", 600Gpm 4"Dp, 110H, 30 Hp	EA	4, 891. 27	
4448	20"X60", 600Gpm 4"Dp, 120H, 40 Hp	EA	4, 968. 53	
4449	20"X60", 600Gpm 4"Dp, 140H, 50 Hp	EA	4, 968. 53	
4451	20"X54", 800Gpm 4"Dp, 50H, 15 Hp	EA	3, 864. 77	
4452	20"X54", 800Gpm 4"Dp, 60H, 20 Hp	EA	3, 864. 77	
4453	20"X54", 800Gpm 4"Dp, 75H, 25 Hp	EA	4, 891. 27	
4454	20"X54", 800Gpm 4"Dp, 90H, 30 Hp	EA	4, 891. 27	
4455	20"X60", 800Gpm 4"Dp, 115H, 40 Hp	EA	4, 968. 53	
4456	20"X60", 800Gpm 4"Dp, 130H, 50 Hp	EA	4, 968. 53	
4461	20"X54", 1000Gpm 4"Dp, 50H, 25 Hp	EA	4, 968. 53	
4462	20"X54", 1000Gpm 4"Dp, 70H, 30 Hp	EA	4, 968. 53	
4463	20"X60", 1000Gpm 4"Dp, 90H, 40 Hp	EA	4, 968. 53	
4464	20"X60", 1000Gpm 4"Dp, 120H, 50	EA	4, 968. 53	
4471	20"X54", 1200Gpm 4"Dp, 60H, 30 Hp	EA	4, 968. 53	
4472	20"X60", 1200Gpm 4"Dp, 80H, 40 Hp	EA	4, 968. 53	
4473	20"X60", 1200Gpm 4"Dp, 100H, 50	EA	4, 968. 53	
4474	20"X60", 1200Gpm 4"Dp, 110H, 60	EA	5, 520. 48	
4481	22"X60", 1400Gpm 6"Dp, 60H, 30 Hp	EA	5, 199. 32	
4482	22"X60", 1400Gpm 6"Dp, 80H, 40 Hp	EA	5, 199. 32	
4483	22"X60", 1400Gpm 6"Dp, 100H, 50	EA	5, 199. 32	
4491	22"X60", 1600Gpm 6"Dp, 90H, 60 Hp	EA	5, 751. 27	
15299 4500 Sewage Pumps, Hbrizontal, 1150 Rpm 1-1/2" Soli				
4511	15"X48", 40Gpm 2"Dp, 13H, 1/2 Hp	EA	2, 540. 93	
4512	15"X48", 40Gpm 2"Dp, 17H, 3/4 Hp	EA	2, 540. 93	
4513	15"X48", 40Gpm 2"Dp, 24H, 1 Hp	EA	2, 540. 93	
4514	15"X48", 40Gpm 2"Dp, 30H, 1-1/2	EA	2, 861. 02	
4515	15"X48", 40Gpm 2"Dp, 35H, 2 Hp	EA	2, 861. 02	
4516	15"X48", 40Gpm 2"Dp, 43H, 3 Hp	EA	2, 861. 02	
4521	15"X48", 80Gpm 2"Dp, 15H, 3/4 Hp	EA	2, 540. 93	
4522	15"X48", 80Gpm 2"Dp, 20H, 1 Hp	EA	2, 540. 93	
4523	15"X48", 80Gpm 2"Dp, 25H, 1-1/2	EA	2, 540. 93	
4524	15"X48", 80Gpm 2"Dp, 33H, 2 Hp	EA	2, 861. 02	
4525	15"X48", 80Gpm 2"Dp, 40H, 3 Hp	EA	2, 861. 02	
4531	15"X48", 120Gpm 2"Dp, 10H, 3/4 Hp	EA	2, 540. 93	
4532	15"X48", 120Gpm 2"Dp, 18H, 1 Hp	EA	2, 540. 93	
4533	15"X48", 120Gpm 2"Dp, 23H, 1-1/2 H p	EA	2, 861. 02	
4534	15"X48", 120Gpm 2"Dp, 30H, 2 Hp	EA	2, 861. 02	
4535	15"X48", 120Gpm 2"Dp, 34H, 3 Hp	EA	2, 861. 02	
4541	15"X48", 150Gpm 2"Dp, 15H, 1 Hp	EA	2, 861. 02	
4542	15"X48", 150Gpm 2"Dp, 27H, 2 Hp	EA	2, 861. 02	
4543	15"X48", 150Gpm 2"Dp, 35H, 3 Hp	EA	2, 861. 02	
4551	15"X48", 175Gpm 2"Dp, 30H, 3 Hp	EA	2, 861. 02	
15299 4600 Sewage Pumps, Hbrizontal, 1150 Rpm 2" Solids				
4611	15"X48", 100Gpm 3"Dp, 22H, 1-1/2 H p	EA	3, 465. 07	
4612	15"X48", 100Gpm 3"Dp, 28H, 2 Hp	EA	3, 465. 07	
4613	15"X48", 100Gpm 3"Dp, 35H, 3 Hp	EA	3, 465. 07	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4614	15"X48", 100Gpm 3"Dp, 42H, 5 Hp	EA	3,465.07	
4615	15"X48", 100Gpm 3"Dp, 55H, 7-1/2 H p	EA	4,003.91	
4616	15"X48", 100Gpm 3"Dp, 70H, 10 Hp	EA	4,003.91	
4621	15"X48", 200Gpm 3"Dp, 18H, 1-1/2 H p	EA	3,465.07	
4622	15"X48", 200Gpm 3"Dp, 24H, 2 Hp	EA	3,465.07	
4623	15"X48", 200Gpm 3"Dp, 30H, 3 Hp	EA	3,465.07	
4624	15"X48", 200Gpm 3"Dp, 37H, 5 Hp	EA	3,465.07	
4625	15"X48", 200Gpm 3"Dp, 52H, 7-1/2 H p	EA	4,003.91	
4626	15"X48", 200Gpm 3"Dp, 65H, 10 Hp	EA	4,003.91	
4631	15"X48", 300Gpm 3"Dp, 25H, 3 Hp	EA	3,465.07	
4632	15"X48", 300Gpm 3"Dp, 32H, 5 Hp	EA	3,465.07	
4633	15"X48", 300Gpm 3"Dp, 48H, 7-1/2 H p	EA	4,003.91	
4634	15"X48", 300Gpm 3"Dp, 60H, 10 Hp	EA	4,003.91	
4641	15"X48", 400Gpm 3"Dp, 25H, 5 Hp	EA	4,003.91	
4642	15"X48", 400Gpm 3"Dp, 42H, 7-1/2 H p	EA	4,003.91	
4643	15"X48", 400Gpm 3"Dp, 55H, 10 Hp	EA	4,003.91	
4651	15"X48", 500Gpm 3"Dp, 35H, 7-1/2 H p	EA	4,003.91	
4652	15"X48", 500Gpm 3"Dp, 50H, 10 Hp	EA	4,003.91	
15299 4700 Sewage Pumps, Horizontal, 1150 Rpm 2-1/2" Soli				
4711	15"X48", 100Gpm 3"Dp, 15H, 1 Hp	EA	2,861.02	
4712	15"X48", 100Gpm 3"Dp, 20H, 2 Hp	EA	2,861.02	
4713	15"X48", 100Gpm 3"Dp, 25H, 3 Hp	EA	3,554.38	
4714	15"X48", 100Gpm 3"Dp, 40H, 5 Hp	EA	3,554.38	
4715	15"X48", 100Gpm 3"Dp, 50H, 7-1/2 H p	EA	4,620.01	
4716	15"X48", 100Gpm 3"Dp, 70H, 10 Hp	EA	4,620.01	
4721	15"X48", 200Gpm 3"Dp, 15H, 1-1/2 H p	EA	2,861.02	
4722	15"X48", 200Gpm 3"Dp, 20H, 2 Hp	EA	2,861.02	
4733	15"X48", 200Gpm 3"Dp, 35H, 5 Hp	EA	3,554.38	
4744	15"X48", 200Gpm 3"Dp, 50H, 7-1/2 H p	EA	4,620.01	
4745	15"X48", 200Gpm 3"Dp, 65H, 10 Hp	EA	4,620.01	
4751	15"X48", 300Gpm 3"Dp, 15H, 2 Hp	EA	2,861.02	
4752	15"X48", 300Gpm 3"Dp, 20H, 3 Hp	EA	2,861.02	
4753	15"X48", 300Gpm 3"Dp, 30H, 5 Hp	EA	3,554.38	
4754	15"X48", 300Gpm 3"Dp, 45H, 7-1/2 H p	EA	4,620.01	
4755	15"X48", 300Gpm 3"Dp, 60H, 10 Hp	EA	4,620.01	
4761	15"X48", 400Gpm 3"Dp, 20H, 5 Hp	EA	3,554.38	
4762	15"X48", 400Gpm 3"Dp, 25H, 5 Hp	EA	3,554.38	
4763	15"X48", 400Gpm 3"Dp, 30H, 5 Hp	EA	4,620.01	
4764	15"X48", 400Gpm 3"Dp, 40H, 7-1/2 H p	EA	4,620.01	
4765	15"X48", 400Gpm 3"Dp, 50H, 10 Hp	EA	4,620.01	
4766	15"X48", 400Gpm 3"Dp, 58H, 15 Hp	EA	4,891.27	
4771	15"X48", 500Gpm 3"Dp, 25H, 5 Hp	EA	4,620.01	
4772	15"X48", 500Gpm 3"Dp, 35H, 7-1/2 H p	EA	4,620.01	
4773	15"X48", 500Gpm 3"Dp, 50H, 10 Hp	EA	4,620.01	
4774	15"X48", 500Gpm 3"Dp, 55H, 15 Hp	EA	4,891.27	
4781	18"X48", 600Gpm 4"Dp, 30H, 7-1/2 H p	EA	4,620.01	
4782	18"X48", 600Gpm 4"Dp, 40H, 10 Hp	EA	4,620.01	
4783	18"X48", 600Gpm 4"Dp, 50H, 15 Hp	EA	4,891.27	
15299 4800 Sewage Pumps, Horizontal, 1150 Rpm 3" Solids				
4811	18"X48", 100Gpm 4"Dp, 15H, 1-1/2 H p	EA	2,861.02	
4812	18"X48", 100Gpm 4"Dp, 20H, 2 Hp	EA	2,861.02	
4813	18"X48", 100Gpm 4"Dp, 25H, 3 Hp	EA	3,593.51	
4814	18"X48", 100Gpm 4"Dp, 35H, 5 Hp	EA	3,593.51	
4815	18"X48", 100Gpm 4"Dp, 40H, 7-1/2 H p	EA	3,593.51	
4821	18"X48", 200Gpm 4"Dp, 15H, 1-1/2 H p	EA	2,861.02	
4822	18"X48", 200Gpm 4"Dp, 20H, 3 Hp	EA	3,593.51	
4823	18"X48", 200Gpm 4"Dp, 30H, 5 Hp	EA	3,593.51	
4824	18"X48", 200Gpm 4"Dp, 35H, 7-1/2 H p	EA	3,593.51	
4825	18"X48", 200Gpm 4"Dp, 50H, 7-1/2 H p	EA	4,620.01	
4826	18"X48", 200Gpm 4"Dp, 60H, 10 Hp	EA	4,620.01	
4827	18"X48", 200Gpm 4"Dp, 70H, 15 Hp	EA	4,891.27	
4831	18"X48", 400Gpm 4"Dp, 20H, 3 Hp	EA	4,145.39	
4832	18"X48", 400Gpm 4"Dp, 30H, 5 Hp	EA	4,145.39	
4833	18"X48", 400Gpm 4"Dp, 40H, 10 Hp	EA	4,620.01	
4834	18"X48", 400Gpm 4"Dp, 50H, 15 Hp	EA	4,620.01	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4835	18"X48", 400Gpm 4"Dp, 60H, 10 Hp	EA	4, 891. 27	
4841	18"X48", 600Gpm 4"Dp, 25H, 7-1/2 H p	EA	4, 145. 39	
4842	18"X48", 600Gpm 4"Dp, 35H, 10 Hp	EA	4, 620. 01	
4843	18"X48", 600Gpm 4"Dp, 55H, 15 Hp	EA	4, 891. 27	
4851	20"X54", 800Gpm 6"Dp, 20H, 5 Hp	EA	4, 942. 11	
4852	20"X54", 800Gpm 6"Dp, 30H, 7-1/2 H p	EA	4, 942. 11	
4853	18"X48", 800Gpm 4"Dp, 40H, 10 Hp	EA	4, 697. 27	
4854	18"X48", 800Gpm 4"Dp, 40H, 15 Hp	EA	4, 968. 53	
4861	20"X54", 1000Gpm 6"Dp, 25H, 7-1/2 Hp	EA	4, 942. 11	
4862	20"X54", 1000Gpm 6"Dp, 30H, 10 Hp	EA	4, 942. 11	
4863	20"X54", 1000Gpm 6"Dp, 40H, 10 Hp	EA	4, 942. 11	
4864	20"X54", 1000Gpm 6"Dp, 50H, 15 Hp	EA	5, 213. 37	
4871	20"X54", 1200Gpm 6"Dp, 40H, 15 Hp	EA	5, 213. 37	
4872	20"X60", 1200Gpm 6"Dp, 60H, 40 Hp	EA	5, 340. 80	
4873	20"X60", 1200Gpm 6"Dp, 80H, 60 Hp	EA	5, 892. 75	
4881	20"X54", 1600Gpm 6"Dp, 30H, 20 Hp	EA	7, 984. 81	
4882	20"X54", 1600Gpm 6"Dp, 45H, 30 Hp	EA	7, 984. 81	
4883	20"X60", 1600Gpm 6"Dp, 60H, 40 Hp	EA	7, 984. 81	
4884	20"X60", 1600Gpm 6"Dp, 75H, 50 Hp	EA	7, 984. 81	
4885	20"X60", 1600Gpm 6"Dp, 80H, 60 Hp	EA	8, 536. 76	
4891	20"X54", 2000Gpm 6"Dp, 30H, 25 Hp	EA	7, 984. 81	
4892	20"X54", 2000Gpm 6"Dp, 40H, 30 Hp	EA	7, 984. 81	
4893	20"X60", 2000Gpm 6"Dp, 50H, 40 Hp	EA	7, 984. 81	
4894	20"X60", 2000Gpm 6"Dp, 65H, 50 Hp	EA	7, 984. 81	
4895	20"X60", 2000Gpm 6"Dp, 75H, 60 Hp	EA	8, 536. 76	
4896	20"X60", 2400Gpm 6"Dp, 50H, 40 Hp	EA	7, 984. 81	
4897	20"X60", 2400Gpm 6"Dp, 65H, 50 Hp	EA	7, 984. 81	
4898	20"X60", 2400Gpm 6"Dp, 75H, 60 Hp	EA	8, 536. 76	
4899	20"X60", 2800Gpm 6"Dp, 60H, 60 Hp	EA	8, 536. 76	
15299 5000 Sewage Pumps, Vertical Non-Clog				
15299 5100 Sewage Pumps, Vertical, 1750 Rpm 1-1/2" Solids				
5111	25 Gpm 2-1/2"Dp, 17H, Ci, 1/2 H p	EA	3, 471. 09	
5112	25 Gpm 2-1/2"Dp, 26H, Ci, 3/4 H p	EA	3, 471. 09	
5113	25 Gpm 2-1/2"Dp, 31H, Ci, 1 Hp	EA	3, 471. 09	
5114	25 Gpm 2-1/2"Dp, 34H, Ci, 1-1/2 Hp	EA	3, 471. 09	
5121	50 Gpm 2-1/2"Dp, 13H, Ci, 1/2 H p	EA	3, 471. 09	
5122	50 Gpm 2-1/2"Dp, 23H, Ci, 3/4 H p	EA	3, 471. 09	
5123	50 Gpm 2-1/2"Dp, 28H, Ci, 1 Hp	EA	3, 471. 09	
5124	50 Gpm 2-1/2"Dp, 31H, Ci, 1-1/2 Hp	EA	3, 471. 09	
5131	75 Gpm 2-1/2"Dp, 9H, Ci, 1/2	EA	3, 471. 09	
5132	75 Gpm 2-1/2"Dp, 18H, Ci, 3/4 H p	EA	3, 471. 09	
5133	75 Gpm 2-1/2"Dp, 25H, Ci, 1 Hp	EA	3, 471. 09	
5134	75 Gpm 2-1/2"Dp, 29H, Ci, 1-1/2 Hp	EA	3, 471. 09	
5141	100 Gpm 2-1/2"Dp, 13H, Ci, 3/4 Hp	EA	3, 471. 09	
5142	100 Gpm 2-1/2"Dp, 20H, Ci, 1	EA	3, 471. 09	
5143	100 Gpm 2-1/2"Dp, 26H, Ci, 1-1/ 2 Hp	EA	3, 471. 09	
5151	125 Gpm 2-1/2"Dp, 8H, Ci, 3/4 H p	EA	3, 471. 09	
5152	125 Gpm 2-1/2"Dp, 16H, Ci, 1	EA	3, 471. 09	
5153	125 Gpm 2-1/2"Dp, 23H, Ci, 1-1/ 2 Hp	EA	3, 471. 09	
5161	150 Gpm 2-1/2"Dp, 11H, Ci, 1	EA	3, 471. 09	
5162	150 Gpm 2-1/2"Dp, 19H, Ci, 1-1/ 2 Hp	EA	3, 471. 09	
15299 5200 Sewage Pumps, Vertical, 1750 Rpm 2" Solids				
5211	50 Gpm 3"Dp, 18H, Ci, 3/4 Hp	EA	3, 605. 55	
5212	50 Gpm 3"Dp, 24H, Ci, 1 Hp	EA	3, 605. 55	
5213	50 Gpm 3"Dp, 34H, Ci, 1-1/2 Hp	EA	3, 605. 55	
5214	50 Gpm 3"Dp, 42H, Ci, 2 Hp	EA	3, 702. 89	
5215	50 Gpm 3"Dp, 50H, Ci, 3 Hp	EA	3, 702. 89	
5216	50 Gpm 3"Dp, 66H, Ci, 5 Hp	EA	4, 646. 10	
5217	50 Gpm 3"Dp, 95H, Ci, 7-1/2 Hp	EA	4, 646. 10	
5218	50 Gpm 3"Dp, 107H, Ci, 10 Hp	EA	4, 646. 10	
5221	75 Gpm 3"Dp, 15H, Ci, 3/4 Hp	EA	3, 605. 55	
5222	75 Gpm 3"Dp, 22H, Ci, 1 Hp	EA	3, 605. 55	
5223	75 Gpm 3"Dp, 32H, Ci, 1-1/2 Hp	EA	3, 605. 55	
5224	75 Gpm 3"Dp, 39H, Ci, 2 Hp	EA	3, 702. 89	
5225	75 Gpm 3"Dp, 48H, Ci, 3 Hp	EA	3, 702. 89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5226	75 Gpm 3"Dp, 64H, Ci, 5 Hp	EA	4,646.10	
5227	75 Gpm 3"Dp, 91H, Ci, 7-1/2 Hp	EA	4,646.10	
5228	75 Gpm 3"Dp, 105H, Ci, 10 Hp	EA	4,646.10	
5231	100 Gpm 3"Dp, 20H, Ci, 1 Hp	EA	3,605.55	
5232	100 Gpm 3"Dp, 29H, Ci, 1-1/2	EA	3,605.55	
5233	100 Gpm 3"Dp, 36H, Ci, 2 Hp	EA	3,702.89	
5234	100 Gpm 3"Dp, 46H, Ci, 3 Hp	EA	3,702.89	
5235	100 Gpm 3"Dp, 61H, Ci, 5 Hp	EA	4,646.10	
5236	100 Gpm 3"Dp, 88H, Ci, 7-1/2	EA	4,646.10	
5237	100 Gpm 3"Dp, 103H, Ci, 10 Hp	EA	4,646.10	
5241	200 Gpm 3"Dp, 17H, Ci, 1-1/2	EA	3,605.55	
5242	200 Gpm 3"Dp, 25H, Ci, 2 Hp	EA	3,605.55	
5243	200 Gpm 3"Dp, 37H, Ci, 3 Hp	EA	3,702.89	
5244	200 Gpm 3"Dp, 50H, Ci, 5 Hp	EA	4,646.10	
5245	200 Gpm 3"Dp, 76H, Ci, 7-1/2	EA	4,646.10	
5246	200 Gpm 3"Dp, 96H, Ci, 10 Hp	EA	4,646.10	
5247	200 Gpm 3"Dp, 100H, Ci, 15 Hp	EA	5,450.18	
5251	300 Gpm 4"Dp, 18H, Ci, 3 Hp	EA	3,702.89	
5252	300 Gpm 4"Dp, 35H, Ci, 5 Hp	EA	5,178.92	
5253	300 Gpm 4"Dp, 60H, Ci, 7-1/2	EA	5,178.92	
5254	300 Gpm 4"Dp, 80H, Ci, 10 Hp	EA	5,178.92	
5255	300 Gpm 4"Dp, 91H, Ci, 15 Hp	EA	5,450.18	
5261	400 Gpm 4"Dp, 20H, Ci, 5 Hp	EA	4,229.68	
5262	400 Gpm 4"Dp, 45H, Ci, 7-1/2	EA	5,178.92	
5263	400 Gpm 4"Dp, 64H, Ci, 10 Hp	EA	5,178.92	
5264	400 Gpm 4"Dp, 80H, Ci, 15 Hp	EA	5,636.81	
5271	500 Gpm 5"Dp, 26H, Ci, 7-1/2	EA	5,178.92	
5272	500 Gpm 5"Dp, 46H, Ci, 10 Hp	EA	5,178.92	
5273	500 Gpm 5"Dp, 68H, Ci, 15 Hp	EA	5,450.18	
5281	600 Gpm 5"Dp, 25H, Ci, 10 Hp	EA	5,178.92	
5282	600 Gpm 5"Dp, 54H, Ci, 15 Hp	EA	5,450.18	
15299 5300	Sevage Pumps, Vertical, 1750 Rpm 3" Solids			
5311	100 Gpm 4"Dp, 22H, Ci, 2 Hp	EA	4,229.68	
5312	100 Gpm 4"Dp, 34H, Ci, 3 Hp	EA	4,229.68	
5313	100 Gpm 4"Dp, 45H, Ci, 5 Hp	EA	4,229.68	
5321	150 Gpm 4"Dp, 20H, Ci, 2 Hp	EA	4,229.68	
5322	150 Gpm 4"Dp, 31H, Ci, 3 Hp	EA	4,229.68	
5323	150 Gpm 4"Dp, 42H, Ci, 5 Hp	EA	4,229.68	
5331	200 Gpm 4"Dp, 18H, Ci, 2 Hp	EA	4,229.68	
5332	200 Gpm 4"Dp, 28H, Ci, 3 Hp	EA	4,229.68	
5333	200 Gpm 4"Dp, 40H, Ci, 5 Hp	EA	4,229.68	
5341	300 Gpm 4"Dp, 14H, Ci, 2 Hp	EA	4,229.68	
5342	300 Gpm 4"Dp, 23H, Ci, 3 Hp	EA	4,229.68	
5343	300 Gpm 4"Dp, 37H, Ci, 5 Hp	EA	4,229.68	
5344	300 Gpm 4"Dp, 53H, Ci, 7-1/2	EA	5,178.92	
5345	300 Gpm 4"Dp, 68H, Ci, 10 Hp	EA	5,178.92	
5346	300 Gpm 4"Dp, 90H, Ci, 15 Hp	EA	5,450.18	
5351	400 Gpm 4"Dp, 16H, Ci, 3 Hp	EA	4,229.68	
5352	400 Gpm 4"Dp, 28H, Ci, 5 Hp	EA	4,229.68	
5353	400 Gpm 4"Dp, 46H, Ci, 7-1/2	EA	5,178.92	
5354	400 Gpm 4"Dp, 60H, Ci, 10 Hp	EA	5,178.92	
5355	400 Gpm 4"Dp, 82H, Ci, 15 Hp	EA	6,110.42	
5356	400 Gpm 4"Dp, 86H, Ci, 20 Hp	EA	6,110.42	
5361	500 Gpm 5"Dp, 20H, Ci, 5 Hp	EA	4,338.05	
5362	500 Gpm 5"Dp, 26H, Ci, 7-1/2	EA	4,338.05	
5363	500 Gpm 5"Dp, 38H, Ci, 7-1/2	EA	5,326.41	
5364	500 Gpm 5"Dp, 52H, Ci, 10 Hp	EA	5,326.41	
5365	500 Gpm 5"Dp, 74H, Ci, 15 Hp	EA	5,450.18	
5366	500 Gpm 5"Dp, 82H, Ci, 20 Hp	EA	5,450.18	
5371	600 Gpm 5"Dp, 30H, Ci, 7-1/2	EA	5,326.41	
5372	600 Gpm 5"Dp, 43H, Ci, 10 Hp	EA	5,326.41	
5373	600 Gpm 5"Dp, 65H, Ci, 15 Hp	EA	5,450.18	
5374	600 Gpm 5"Dp, 77H, Ci, 20 Hp	EA	5,450.18	
5381	700 Gpm 5"Dp, 21H, Ci, 7-1/2	EA	5,326.41	
5382	700 Gpm 5"Dp, 35H, Ci, 10 Hp	EA	5,326.41	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5383	700 Gpm 5"Dp, 57H, Ci, 15 Hp	EA	5,450.18	
5384	700 Gpm 5"Dp, 73H, Ci, 20 Hp	EA	5,450.18	
5391	800 Gpm 6"Dp, 25H, Ci, 10 Hp	EA	5,839.16	
5392	800 Gpm 6"Dp, 47H, Ci, 15 Hp	EA	6,291.04	
5393	800 Gpm 6"Dp, 65H, Ci, 20 Hp	EA	6,291.04	
5394	900 Gpm 6"Dp, 38H, Ci, 15 Hp	EA	6,291.04	
5395	900 Gpm 6"Dp, 56H, Ci, 20 Hp	EA	6,291.04	
15299 5400 Sewage Pumps, Vertical, 1150 Rpm 2" Solids				
5411	50 Gpm 3"Dp, 15H, Ci, 1/2 Hp	EA	3,605.55	
5412	50 Gpm 3"Dp, 20H, Ci, 3/4 Hp	EA	3,605.55	
5413	50 Gpm 3"Dp, 26H, Ci, 1-1/2 Hp	EA	4,646.10	
5414	50 Gpm 3"Dp, 34H, Ci, 2 Hp	EA	4,646.10	
5415	50 Gpm 3"Dp, 46H, Ci, 3 Hp	EA	4,646.10	
5421	100 Gpm 3"Dp, 10H, Ci, 1/2 Hp	EA	3,605.55	
5422	100 Gpm 3"Dp, 19H, Ci, 1 Hp	EA	3,605.55	
5423	100 Gpm 3"Dp, 31H, Ci, 2 Hp	EA	4,646.10	
5424	100 Gpm 3"Dp, 45H, Ci, 3 Hp	EA	4,646.10	
5431	150 Gpm 3"Dp, 12H, Ci, 3/4 Hp	EA	3,605.55	
5432	150 Gpm 3"Dp, 19H, Ci, 1-1/2	EA	4,646.10	
5433	150 Gpm 3"Dp, 26H, Ci, 3 Hp	EA	4,646.10	
5434	150 Gpm 4"Dp, 42H, Ci, 5 Hp	EA	4,646.10	
5441	200 Gpm 3"Dp, 15H, Ci, 1-1/2	EA	4,646.10	
5442	200 Gpm 3"Dp, 22H, Ci, 2 Hp	EA	4,646.10	
5443	200 Gpm 3"Dp, 35H, Ci, 3 Hp	EA	4,646.10	
5444	200 Gpm 4"Dp, 39H, Ci, 5 Hp	EA	5,178.92	
5451	250 Gpm 4"Dp, 17H, Ci, 2 Hp	EA	5,178.92	
5452	250 Gpm 4"Dp, 29H, Ci, 3 Hp	EA	5,178.92	
5453	250 Gpm 4"Dp, 36H, Ci, 5 Hp	EA	5,178.92	
5461	350 Gpm 4"Dp, 17H, Ci, 3 Hp	EA	5,178.92	
5462	350 Gpm 4"Dp, 28H, Ci, 5 Hp	EA	5,178.92	
5463	300 Gpm 4"Dp, 32H, Ci, 5 Hp	EA	5,178.92	
5471	300 Gpm 4"Dp, 10H, Ci, 2 Hp	EA	5,178.92	
5472	300 Gpm 4"Dp, 24H, Ci, 3 Hp	EA	5,178.92	
15299 5500 Sewage Pumps, Vertical, 1150 Rpm 3" Solids				
5511	50 Gpm 4"Dp, 10H, Ci, 1/2 Hp	EA	4,229.68	
5512	50 Gpm 4"Dp, 18H, Ci, 1 Hp	EA	4,229.68	
5513	50 Gpm 4"Dp, 21H, Ci, 1-1/2 Hp	EA	4,229.68	
5521	100 Gpm 4"Dp, 7H, Ci, 1/2 Hp	EA	4,229.68	
5522	100 Gpm 4"Dp, 15H, Ci, 1 Hp	EA	4,229.68	
5523	100 Gpm 4"Dp, 18H, Ci, 1-1/2	EA	4,229.68	
5531	200 Gpm 4"Dp, 11H, Ci, 1 Hp	EA	4,229.68	
5532	200 Gpm 4"Dp, 15H, Ci, 1-1/2	EA	4,229.68	
5541	300 Gpm 4"Dp, 12H, Ci, 1-1/2	EA	4,229.68	
5542	300 Gpm 4"Dp, 24H, Ci, 3 Hp	EA	5,326.41	
5543	300 Gpm 4"Dp, 38H, Ci, 5 Hp	EA	5,326.41	
5551	400 Gpm 4"Dp, 10H, Ci, 2 Hp	EA	5,326.41	
5552	400 Gpm 4"Dp, 19H, Ci, 3 Hp	EA	5,326.41	
5553	400 Gpm 4"Dp, 35H, Ci, 7-1/2	EA	5,557.21	
5561	500 Gpm 5"Dp, 14H, Ci, 3 Hp	EA	5,557.21	
5562	500 Gpm 5"Dp, 26H, Ci, 5 Hp	EA	5,557.21	
5563	500 Gpm 5"Dp, 31H, Ci, 7-1/2	EA	5,557.21	
5571	600 Gpm 5"Dp, 21H, Ci, 5 Hp	EA	5,557.21	
5572	600 Gpm 5"Dp, 27H, Ci, 7-1/2	EA	5,557.21	
5581	700 Gpm 5"Dp, 14H, Ci, 5 Hp	EA	5,557.21	
5582	700 Gpm 5"Dp, 23H, Ci, 7-1/2	EA	5,557.21	
15299 5600 Extra Column Assemblies Addition 5'-0" Section				
5611	Extra Column Assy 5'-0", Add, 2-1/2"	EA	574.96	
5612	Extra Column Assy 5'-0", Add, 3"	EA	690.35	
5613	Extra Column Assy 5'-0", Add, 4"	EA	771.63	
5614	Extra Column Assy 5'-0", Add, 5"	EA	785.68	
5615	Extra Column Assy 5'-0", Add, 6"	EA	882.01	
15299 5700 Float Switchs, Copper Coated Floats, Brass Rods				
5711	Float Sw.Cpr.Coated Float, Add, G.P.	EA	516.76	
5712	Float Sw.Cpr.Coated Float, Add, W.P.	EA	542.85	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5713	Float Sw.Cpr.Coated Float,Add, E .P.	EA	554.89	
15299 5800	Steel Slump Covers, Square Or Round			
5811	Steel Slump Covers, Sq. Or Rd. 2 4"	EA	236.81	
5812	Steel Slump Covers, Sq. Or Rd. 3 0"	EA	261.89	
5813	Steel Slump Covers, Sq. Or Rd. 3 6"	EA	365.25	
5814	Steel Slump Covers, Sq. Or Rd. 4 0"	EA	542.85	
5815	Steel Slump Covers, Sq. Or Rd. 4 2"	EA	583.99	
5816	Steel Slump Covers, Sq. Or Rd. 4 8"	EA	626.13	
5817	Steel Slump Covers, Sq. Or Rd. 5 4"	EA	735.50	
5818	Steel Slump Covers, Sq. Or Rd. 6 0"	EA	844.88	
5819	Steel Slump Covers, Sq. Or Rd. 7 2"	EA	1,398.76	
5821	Steel Slump Covers, Sq. Or Rd. 8 4"	EA	1,539.25	
15299 6000	Sewage Pumps, 3000Gpm 60' Head			
6001	75Hp Sewage Pump	EA	27,848.61	
6002	125Hp Sewage Pump	EA	34,512.40	
6003	150Hp Sewage Pump	EA	41,175.37	
6004	250Hp Sewage Pump	EA	93,635.86	
6005	300Hp Sewage Pump	EA	133,139.51	

15300 Plumbing Appliances

Note: Demolition of Appliances Includes All Associated Faucets, Valves, Supply Lines, Traps, and Pop-up Drains.

15304 Water Appliances

15304 0010 Washer dryer accessories

15304 1050 Recessed box, 16 ga two hose valves and drain

1090	Washer/dryer access,1/2"size, 1.5"dr, elec rcpt, rec box,2 hose	EA	63.90	4.88
1100	Washer/dryer access,1/2" size,2" dr,elec rcpt, rec box,2 hose	EA	67.85	5.14
1120	Washer/dryer access, 1/2" size, 1.5"dr, w/grnding & dryer	EA	70.99	5.18

15304 1300 Recessed box, 20 ga two hose valves and drain

1340	Washer/dryer access,1/2"size, 1.5" ABS/PVCdr, econ type, rec	EA	32.10	2.68
1350	Washer/dryer access,1/2"size,2" ABS/PVC dr, econ type, rec box,	EA	36.07	2.80
1360	Washer/dryer access,1/2"size,2" ABS/PVC, 15A, econ type, rec	EA	70.55	5.18

15304 1400 Wall mounted

1410	Washer box, plastic, 1.5" drain, wall mtd, 1/2" supply valves	EA	37.99	3.21
1420	Washer box, plastic, wall mtd, 1/2" supply valves, 2" drain	EA	38.88	3.25

15306 0010 Water chillers remote

15306 0050 Water Chillers Remote

0100	Water chiller,4.1 GPH,80 deg F in,aircool,50 deg F outlet,115V,	EA	512.21	18.12
0300	Water chiller,8.0 GPH,80 deg F in,aircool,50 deg F outlet,115V,	EA	556.24	21.67
0400	Water chiller,10 GPH,80 deg F in,aircool,50 deg F outlet,115V,	EA	675.02	22.84
1200	Water chiller, remote, for remote grill, add	EA	80.03	6.43
2612	Remote Water Cooler, 20 GPM	EA	1,198.80	52.19

15308 0010 Water cooler

15308 0100 Wall mounted, non-recessed

0180	Water cooler, wall mounted, non-recessed, 8.2 GPH	EA	651.24	19.12
0220	Water cooler, wall mounted, non-recessed, 14.3 GPH	EA	678.40	19.02
2600	Water cooler, wall mounted, wheelchair type, 8 GPH	EA	1,343.90	37.36
2610	Water cooler, wall mounted, wheelchair type, 14 GPH	EA	1,367.67	25.97

15308 4600 Floor mounted, flush-to-wall

4680	Water cooler, floor mounted, flush-to-wall, 8.2 GPH	EA	620.35	14.60
4720	Water cooler, floor mounted, flush-to-wall, 14.3 GPH	EA	640.72	13.31

15310 0010 Residential water heaters

Note: Does Not Include Plumbing/Electrical Rough-in.

15310 0999 Residential

15310 0999 Electric, glass lined tank

Note: Add Cost Of Electrical Wiring And Hook-Up 190 Deg Water

1000	Water htr, resi, single element, 10 gal, elec, glass lined tank,	EA	346.06	28.97
1002	10Gal,2000 w @120v,Auto H2O Htr Glass Lined w/o Wiring & Hook-U	EA	323.49	16.81
1004	20Gal,2000 w @120v,Auto H2O Htr Glass Lined w/o Wiring & Hook-u	EA	385.31	18.97
1060	Water htr, resi, double element, 30 gal, elec, glass lined tank,	EA	436.34	25.83
1080	Water htr, resi, double element, 40 gal, elec, glass lined tank,	EA	483.21	31.47
1100	Water htr, resi, dbl element,50 gal, elec, glass lined tnk,5 Yr	EA	512.55	37.78

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1120	Water htr, resi, dbl element, 60 gal, elec, glass lined tnk, 5 Yr	EA	655.06	44.33
1140	Water htr, resi, double element, 80 gal, elec, glass lined tank,	EA	749.83	57.75
1150	Water htr, resi, dbl element, 120 gal, Elec, Glass Lined Tnk, 5 Yr	EA	1,005.92	60.97
15310 1999	Gas fired, glass lined tank, vent not included			
2000	Water htr, resi, vent no, 20 gal, gas fired, glass lined	EA	460.99	28.82
2040	Water htr, resi, vent no, 30 gal, gas fired, glass lined	EA	476.11	30.22
2060	Water htr, resi, vent no, 40 gal, gas fired, glass lined	EA	507.84	34.64
2080	Water htr, resi, vent no, 50 gal, gas fired, glass lined	EA	595.91	33.58
2100	Water htr, resi, vent no, 75 gal, gas fired, glass lined	EA	914.75	37.86
2120	Water htr, resi, vent no, 100 gal, gas fired, glass lined	EA	1,405.30	67.59
15310 2999	Oil fired, glass lined tank, vent not included			
3000	Water htr, resi, vent no, 30 gal, oil fired, glass lined	EA	954.87	26.81
3010	Water htr, resi, vent no, 40 gal, oil fired, glass lined	EA	1,092.98	32.03
3040	Water htr, resi, vent no, 50 gal, oil fired, glass lined	EA	1,273.87	33.58
3060	Water htr, resi, vent no, 70 gal, oil fired, glass lined	EA	1,493.11	27.12
3080	Water htr, resi, vent no, 85 gal, oil fired, glass lined	EA	2,098.31	34.53
3090	Water htr, resi, vent no, 120 gal, oil fired, glass lined	EA	2,581.23	57.75
15310 3100	Removal & Reinstallation Of Water Heater Includes Storage And Cleaning			
3110	Remove & Reinstall Water Heater Gas Fired, Up To 86 Gal	EA	172.82	
3120	Remove & Reinstall Water Heater Electric, Up To 82 Gal	EA	126.73	
15310 3200	Water Heater Drain Pan			
3210	Water Heater Drain Pan, 24" Dia. x 3" Deep	EA	15.91	
15310 4000	Commercial			
15310 4020	Electric			
Note: Add Cost Of Electrical Wiring And Hook-Up				
4240	Water htr, coml, 100 deg rise, elec, 120 gal, 36 kW, 148 GPH	EA	5,259.26	50.45
4400	Water htr, coml, 100 deg rise, elec, 300 gal, 180 kW, 738 GPH	EA	32,014.22	91.72
4520	Water htr, coml, 100 deg rise, elec, 500 gal, 240 kW, 984 GPH	EA	32,500.14	141.92
4680	Water htr, coml, 1970 GPH, 100 deg rise, elec, 1000 gal, 480 kW	EA	53,051.19	248.67
4770	Water htr, coml, 1970 GPH, 100 deg rise, elec, 2000 gal, 480 kW	EA	77,078.46	362.60
4798	5 Gal, 3 KW, 12 GPH Electric Water Heater	EA	1,666.40	30.42
4800	10 Gal, 6 KW, 25 GPH Electric Water Heater	EA	1,871.47	30.42
4802	50 Gal, 9 KW, 37 GPH Electric Water Heater	EA	2,395.67	35.44
4804	50 Gal, 36 KW, 148 GPH Electric Water Heater	EA	3,571.04	35.44
4806	80 Gal, 12 KW, 49 GPH Electric Water Heater	EA	3,024.42	40.53
4808	80 Gal, 36 KW, 148 GPH Electric Water Heater	EA	4,562.92	40.53
4810	100 Gal, 36 KW, 148 GPH Electric Water Heater	EA	4,325.62	55.78
4812	150 Gal, 15 KW, 61 GPH Electric Water Heater	EA	10,480.05	66.91
4814	150 Gal, 120 KW, 490 GPH Electric Water Heater	EA	15,816.72	66.91
4816	200 Gal, 15 KW, 61 GPH Electric Water Heater	EA	11,469.65	82.28
4818	200 Gal, 120 KW, 490 GPH Electric Water Heater	EA	16,605.39	82.28
4820	250 Gal, 15 KW, 61 GPH Electric Water Heater	EA	11,854.25	89.23
4822	250 Gal, 150 KW, 615 GPH Electric Water Heater	EA	18,366.29	89.23
4826	350 Gal, 30 KW, 123 GPH Electric Water Heater	EA	14,137.49	127.22
4828	350 Gal, 180 KW, 738 GPH Electric Water Heater	EA	20,694.13	127.22
4830	400 Gal, 30 KW, 123 GPH Electric Water Heater	EA	15,936.46	139.91
4832	400 Gal, 210 KW, 800 GPH Electric Water Heater	EA	24,521.00	139.91
4838	200 Gal, 24 KW, Electric Water Heater	EA	11,554.19	105.62
4840	250 Gal, 39 KW, Electric Water Heater	EA	12,851.70	89.23
4842	600 Gal, 30 KW, 123 GPH Electric Water Heater	EA	21,155.00	182.50
4844	600 Gal, 300 KW, 1230 GPH Electric Water heater	EA	37,089.87	182.50
4846	700 Gal, 30 KW, 123 GPH Electric Water Heater	EA	22,329.88	218.88
4848	700 Gal, 300 KW, 1230 GPH Electric Water Heater	EA	35,345.76	218.88
4850	800 Gal, 60 KW, 245 GPH Electric Water Heater	EA	24,511.72	243.18
4852	800 Gal, 300 KW, 1230 GPH Electric Water Heater	EA	36,463.87	243.18
4856	1250 Gal, 60 KW, 245 GPH Electric Water Heater	EA	30,517.78	379.63
4858	1250 Gal, 480 KW, 1970 GPH Electric Water Heater	EA	48,949.53	379.63
4860	1500 Gal, 60 KW, 245 GPH Electric Water Heater	EA	40,268.50	457.00
4862	1500 Gal, 480 KW, 1970 GPH Electric Water Heater	EA	56,763.63	457.00
15310 5000	Steam Fired Water Heater , 100 Psi, With Mxing Chamber.			
Note: Does Not Include Storage Tanks. See CSI 15310-5100 For The Tanks.				
5010	1250 Lb/Hr, 90 Gpm	EA	5,707.88	
5020	2500 Lb/Hr, 140 Gpm	EA	7,595.76	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5030	5000 Lb/Hr, 230 Gpm	EA	10,195.65	
5040	7500 Lb/Hr, 500 Gpm	EA	14,868.02	
5050	10000 Lb/Hr, 500 Gpm	EA	18,179.22	
5060	15000 Lb/Hr, 1400 Gpm	EA	22,524.72	
5070	20000 Lb/Hr, 2400 Gpm	EA	29,312.65	
5080	35000 Lb/Hr, 2400 Gpm	EA	36,373.87	
5090	50000 Lb/Hr, 4000 Gpm	EA	68,500.52	
15310 5100 Water Heater Storage Tanks				
5110	80Gal, 25-1/4" Dia x 65-1/2" L Storage Tank Glass Lined	EA	1,506.91	
5120	120Gal, 29-1/2" Dia x 62" L Storage Tank Glass Lined	EA	1,579.22	
5130	225Gal, 30" Dia x 78" L Storage Tank Glass Lined	EA	3,348.70	
5140	325Gal, 36" Dia x 81" L Storage Tank Glass Lined	EA	4,386.65	
5150	460Gal, 42" Dia x 84" L Storage Tank Glass Lined	EA	5,500.63	
5160	605Gal, 48" Dia x 87" L Storage Tank Glass Lined	EA	7,584.90	
5170	740Gal, 54" Dia x 91" L Storage Tank Glass Lined	EA	9,066.16	
5180	940Gal, 60" Dia x 93" L Storage Tank Glass Lined	EA	10,573.03	
5190	1330Gal, 66" Dia x 107" L Storage Tank Glass Lined	EA	14,247.59	
5192	1615Gal, 72" Dia x 110" L Storage Tank Glass Lined	EA	15,337.16	
5194	2275Gal, 84" Dia x 116" L Storage Tank Glass Lined	EA	21,648.86	
5196	3815Gal, 96 " Dia x 145" L Storage Tank Glass Lined	EA	30,629.38	
15310 6000 Gas fired, flush jacket, std controls				
6100	Water htr, compl, 115 MBH input, 110 GPH, gas fired, no vent, std	EA	1,999.03	54.99
6140	Water htr, compl, 155 MBH input, 150 GPH, gas fired, no vent, std	EA	2,431.76	75.64
6220	Water htr, compl, 295 MBH input, 278 GPH, gas fired, no vent, std	EA	4,918.13	70.96
6240	Water htr, compl, 365 MBH input, 374 GPH, gas fired, no vent, std	EA	5,425.18	141.92
6260	Water htr, compl, 500 MBH input, 480 GPH, gas fired, no vent, std	EA	7,275.88	141.92
6280	Water htr, compl, 600 MBH input, 576 GPH, gas fired, no vent, std	EA	8,374.43	170.30
6290	800 Mbh, 768 Gph	EA	11,187.44	212.91
6292	1000 Mbh, 960 Gph	EA	12,909.52	230.17
6294	1200 Mbh, 1150 Gph	EA	16,039.14	269.49
6296	1500 Mbh, 1440 Gph	EA	19,541.89	269.49
6298	1800 Mbh, 1730 Gph	EA	22,312.24	349.25
6300	2450 Mbh, 2350 Gph	EA	29,404.53	414.80
6302	3000 Mbh, 2880 Gph	EA	35,753.95	506.81
6304	3750 Mbh, 3600 Gph	EA	44,482.18	631.97
6306	758 Mbh, Gas Fired Water Heater Skid Mounted.	EA	13,110.35	250.17
15310 7000 Steam Driven Water Heaters				
15310 7000 Temperature Maintenance Cable				
7001	Temperature maint cable, heating cable, 208 V, 105 <F	LF	9.13	
7002	Temperature maint cable, heating cable, 208 V, 115 <F	LF	9.13	
7003	Temperature maint cable, heating cable, 208 V, 125 <F	LF	9.13	
7004	Temperature maint cable, heating cable, 208 V, 140 <F	LF	9.13	
7005	Temperature maint cable, heating cable, 120 V, 125 <F	LF	5.74	
7006	Temperature maint cable, power kit w/1 end seal	EA	46.57	
7007	Temperature maint cable, splice kit	EA	54.76	
7008	Temperature maint cable, end seal	EA	7.58	
7009	Temperature maint cable, tee kit w/1 end seal	EA	59.62	
7010	Temperature maint cable, powered splice w/2 end seals	EA	56.66	
7011	Temperature maint cable, powered tee kit w/3 end seals	EA	72.14	
7012	Temperature maint cable, cross kit w/2 end seals	EA	75.48	
15310 9000 Heat Transfer Packages				
9001	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 28 GPM	EA	12,029.06	
9002	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 35 GPM	EA	13,284.41	
9003	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 55 GPM	EA	15,107.26	
9004	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 130 GP	EA	18,646.31	
9005	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 255 GP	EA	25,624.53	
9006	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 550 GP	EA	32,619.22	
9007	Heat xfr pkgs, compl, 200<F leav ing, 15# stm one P sys, 800 GP	EA	42,764.87	
9008	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 28 GPM	EA	15,887.58	
9009	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 35 GPM	EA	19,068.60	
9010	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 55 GPM	EA	19,535.27	
9011	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 130 GP	EA	25,004.23	
9012	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 255 GP	EA	34,265.14	
9013	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 550 GP	EA	43,330.77	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9014	Heat xfr pkgs, compl, 200<F leav ing, 15# stm two P sys, 800 GP	EA	58,266.28	
15311 1410	InstantaneousPoint Of Use Water Heater Under Sin			
15312 2000	Water Heater - Tanks			
2001	Water Heater - Tanks 325 Gal 36" Dia	EA	6,080.75	
15313 1200	Api Type Oil/Water Separators			
1211	Api Type Oil/Water Separators, 7 0-135 Gpm	EA	29,364.45	
1212	Api Type Oil/Water Separators, 2 40-450 Gpm	EA	49,810.76	
1213	Api Type Oil/Water Separators, 3 20-610 Gpm	EA	58,114.59	
1214	Api Type Oil/Water Separators, 3 95 Gpm	EA	65,564.06	
1215	Add For Oil Pump &/Or Water	EA	9,871.48	
15313 1300	Hydro-Gard Oil/Water Coalescer			
1311	Hydro-Gard Oil/Water Coalescer, 25	EA	11,947.43	
1312	Hydro-Gard Oil/Water Coalescer, 75	EA	20,319.62	
1313	Hydro-Gard Oil/Water Coalescer, 100	EA	33,582.67	
1314	Hydro-Gard Oil/Water Coalescer, 150	EA	28,461.12	
15314 4000	Oil Skimmers			
15314 4100	Oil Skimmers, 12" And 24" Mdel s			
4111	Oil Skimmers, Tenv, 12" Open	EA	4,476.80	
4112	Oil Skimmers, Explosion-Proof, 1 2" Open	EA	4,725.91	
4113	Oil Skimmers, Tenv, 12" Open	EA	4,499.86	
4114	Oil Skimmers, Explosion-Proof, 1 2" Open	EA	4,819.33	
4115	Oil Skimmers, Tenv, 12"	EA	4,761.67	
4116	Oil Skimmers, Explosion-Proof, 1 2" Enclosed	EA	4,972.72	
4117	Oil Skimmers, Tenv, 12"	EA	4,815.87	
4118	Oil Skimmers, Explosion-Proof, 1 2" Enclosed	EA	5,134.18	
4119	Oil Skimmers, Tenv, 24" Open	EA	4,881.19	
4121	Oil Skimmers, Explosion-Proof, 2 4" Open	EA	5,147.61	
4122	Oil Skimmers, Tenv, 24" Open	EA	4,951.54	
4123	Oil Skimmers, Explosion-Proof, 2 4" Open	EA	5,334.44	
4124	Oil Skimmers, Tenv, 24"	EA	5,554.73	
4125	Oil Skimmers, Explosion-Proof, 2 4" Enclosed	EA	5,821.13	
4126	Oil Skimmers, Tenv, 24"	EA	5,611.24	
4127	Oil Skimmers, Explosion-Proof, 2 4" Enclosed	EA	5,995.29	
15314 4200	Oil Skimmers, Add Ons			
4211	Add For Belt Projection, 12" Wid th	LF	17.30	
4212	Add For Belt Projection, 24" Wid th	LF	32.29	
4213	Add For Spacer Stands, 12" Mdel s	LF	204.87	
4214	Add For Spacer Stands, 24" Mdel s	LF	255.62	
15350 0010	Water treatment, potable			
15350 6000	Potable, Softner SystemAutomatic			
6060	Water trtmt, potable,softner sys,auto, 40000 grains, 14 GPM	EA	1,410.68	33.53
6070	Water trtmt, potable,softner sys,auto, 50000 grains, 17 GPM	EA	1,855.41	42.47
6080	Water trtmt, potable,softner sys,auto, 90000 grains, 25 GPM	EA	2,369.03	50.10
6100	Water trtmt,37 GPM cont,51peak, softner sys,auto,150000 grains,	EA	3,027.29	62.76
15360 0010	Water supply neters			
15360 1000	Detector, serves dual systems			
1180	Water sply ms, det, 6" mainline x3" by-pass, 1600 GPM serves	EA	10,473.14	168.65
1220	Water sply ms, det, 8" mainline x4" by-pass, 2800 GPM serves	EA	15,803.87	215.53
15360 2000	Domestic/commercial, bronze			
15360 2020	Threaded			
2060	Water sply ms, to 20 GPM brz, thd, 5/8" dia,	EA	94.29	9.83
2080	Water sply ms, to 30 GPM brz, thd, 3/4" dia,	EA	151.99	11.65
2100	Water sply ms, to 50 GPM brz, thd, 1" dia, domestic/commercial	EA	202.45	13.69
15360 2300	Threaded/flanged			
2340	Water sply ms, to 100 GPM brz, thd/flgd, 1.5" dia, dom/coml	EA	587.88	19.67
2360	Water sply ms, to 160 GPM brz, thd/flgd, 2" dia, dom/coml	EA	779.77	27.16
15360 2600	Flanged, compound			
2650	3"D,0-360GPM Water Service Meter Compound Type, Flg & Bronze	EA	1,142.97	95.36
2660	Water sply ms, to 500 GPM brz, flgd, compound, 4" dia, dom/coml	EA	5,498.09	230.94
2680	Water sply ms, to 1,000 GPM brz, flgd, compound, 6" dia,	EA	7,937.47	346.28
2700	Water sply ms, to 1,800 GPM brz, flgd, compound, 8" dia,	EA	15,232.21	439.95

15400 Fire Protection

Note: Engineering, Shop Drawings and Calculations are Included in Line Item Pricing.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15410 Fire Systems				
15411 0010 Automatic fire suppression systems				
1000	Fire suppression sys, auto, dispersion nozzle, CO2, 3" x 5"	EA	73.40	9.99
2000	Fire suppression sys, 75 lb cyl, auto, extinguisher, CO2 sys, HP	EA	1,169.83	56.84
2010	Fire suppression sys, duplex 75lb cyl, CO2 sys, HP,	EA	2,339.67	113.47
2080	Fire suppression sys, 1/2" rubber tubing for duplex 75lb	LF	2.14	0.68
15414 0010 Fire hose and equipment				
15414 1400 Couplings, snl & dbl jacket, pin lug or rocker				
1410	Fire hose & eqpt, pin lug or rocker lug,1.5", cplg, sgl & dbl	EA	26.60	
1500	Fire hose & eqpt, cplg, sgl & dbl jacket, for polished brass, add		5.32	
1520	Fire hose & eqpt, cplg, sgl & dbl jacket, for polished chrome, add		10.64	
1420	Fire hose & eqpt, pin lug or rocker lug,2.5", cplg, sgl & dbl	EA	55.46	
1500	Fire hose & eqpt, cplg, sgl & dbl jacket, for polished brass, add		11.09	
1520	Fire hose & eqpt, cplg, sgl & dbl jacket, for polished chrome, add		22.18	
15414 1500 100 Ft Hse Cabinet 1-1/2 In				
1510	1-1/2"Cotton Fire Hose-400# Test w/1-1/2" Rubber Lining w/o Cplg	LF	1.79	0.74
1520	2-1/2"Cotton Fire Hose-400# Test w/1-1/2" Rubber Lining w/o Cplg	LF	2.50	0.69
15414 2200 Hse, less couplings				
2260	Fire hose & eqpt, 1.5" dia, lined, 300 lb test, hose, less	LF	2.40	0.19
2280	Fire hose & eqpt, 2.5" dia, lined, 300 lb test, hose, less	LF	3.86	0.18
2360	Fire hose & eqpt, 1.5" dia, hi str, 500 lb test, hose, less	LF	2.61	0.19
2380	Fire hose & eqpt, 2.5" dia, hi str, 500 lb test, hose, less	LF	4.39	0.18
15414 2600 Hse rack, swinging				
2620	Fire hose & eqpt, 1.5" dia, hose rack, enamed stl, 50' & 75' L	EA	64.54	
2640	Fire hose & eqpt, 1.5" dia, hose rack, enamed stl, 100' & 125' L	EA	64.54	
15414 5600 Nozzles, brass				
5620	Fire hose & eqpt, 3/4" booster line, nozzles, brass, adj fog	EA	82.17	
5780	Fire hose & eqpt, nozzles, brass, for chrome plated, add		16.43	
5660	Fire hose & eqpt, nozzles, brass, adj fog, 2.5" direct conn	EA	179.96	
5780	Fire hose & eqpt, nozzles, brass, for chrome plated, add		35.99	
6500	Fire hose & eqpt, 1.5", plain fog, pol brs, nozzles	EA	59.42	
5780	Fire hose & eqpt, nozzles, brass, for chrome plated, add		11.88	
6700	Fire hose & eqpt,1.5" x 10", pl str, pol brs, nozzles	EA	26.60	
5780	Fire hose & eqpt, nozzles, brass, for chrome plated, add		5.32	
6760	Fire hose & eqpt,2.5"x15"x7/8" or 1.5", pl str, pol brs,	EA	101.86	
5780	Fire hose & eqpt, nozzles, brass, for chrome plated, add		20.37	
15414 7140 Standpipe connections, with plugs and chains				
7160	Fire hose & eqpt, SP conn, w, sgl, fl, brs, 2.5" x 2.5"	EA	217.80	83.12
7240	Fire hose & eqpt, SP conn, w, sgl, fl, brs, for pol chrome, add		14.60	
7300	Fire hose & eqpt, 2.5"x2.5"x4", SP conn, w, dbl, fl, pol brs	EA	477.55	84.32
7400	Fire hose & eqpt, SP conn, w, dbl, fl, for pol chrome, add		53.56	
7600	Fire hose & eqpt, SP conn, w, dbl proj, brs, 2.5"x2.5"x4"	EA	432.27	83.16
7680	Fire hose & eqpt, SP conn, w, dbl proj, brs, for pol chrome, add		46.77	
8820	Fire hose & eqpt, 2.5" x 2.5" x 4", SP conn, sw siamese unit	EA	557.79	156.60
8940	Fire hose & eqpt, SP conn, sw siamese unit, for pol chrome, add		38.02	
9000	Water Mtor Gong	EA	131.30	48.44
9010	4" Fire Riser Flow Switch (NFPA 13)	EA	182.15	5.05
15415 0010 Fire pumps				
Note: Including controller, fittings and relief valve.				
15415 0030 Diesel Stand Alone Units Meeting Nfpa-20 Specs				
0100	Fire pump, incl cntrl, 4" pump, diesel, 500 GPM 100 PSI, 62 HP	EA	50,807.13	438.34
0250	Fire pump, incl cntrl, 4" pump, diesel, 750 GPM 100 PSI, 80 HP	EA	53,565.50	347.80
0400	Fire pump, incl cntrl, 4" pump, diesel, 1000 GPM 100 PSI, 89 HP	EA	54,865.79	338.31
0550	Fire pump, incl cntrl, 6" pump, diesel, 1500 GPM 100 PSI, 140	EA	57,195.37	300.60
0800	Fire pump, incl cntrl, 8" pump, diesel, 2500 GPM 100 PSI, 213	EA	75,109.75	344.02
0850	Fire pump, incl cntrl, 8" pump, diesel, 3000 GPM 100 PSI, 250	EA	86,717.38	360.21
1010	Fire pump, incl cntrl, 8" pump, diesel, 4000 GPM 125 PSI, 400	EA	127,960.68	420.25
1020	Fire pump, incl cntrl, 8" pump, diesel, 5000 GPM 125 PSI, 540	EA	134,806.49	393.98
15415 3000 Electric				
3100	Fire pump, incl cntrl, 3550 RPM 2", elec, 250 GPM 55 PSI, 15 H	EA	12,582.96	110.04
3200	Fire pump, incl cntrl, 1770 RPM 4", elec, 500 GPM 50 PSI, 27 H	EA	15,236.53	163.03
3250	Fire pump, incl cntrl, 3550 RPM 3", elec, 500 GPM 100 PSI, 47	EA	18,162.58	286.81
3500	Fire pump, incl cntrl, 1770 RPM 5", elec, 1000 GPM 50 PSI, 48	EA	21,663.34	460.83

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3660	Fire pump, incl cntrl, 1780 RPM 5", elec, 1250 GPM 75 PSI, 75	EA	22,370.75	556.57
5000	Fire pump, incl controls, for jockey pump 1", 3 HP, add	EA	2,702.99	18.07
15416 0010 Fire valves				
15416 0020 Angle, combination pressure adjustable/restrict				
0040	Fire valves, angle, rough brass, 2.5", comb pressure	EA	164.17	25.53
0050	Fire valve, angle, comb pressure adj/restricting, for pol brass, add		35.31	
0060	Fire valves, angle, comb press adj/restricting, for pol chrome, add		47.08	
0080	Fire valves, angle, wheel handle, 300 lb, 1.5"	EA	60.49	14.96
0100	Fire valves, angle, wheel handle, for polished brass, add		11.69	
0110	Fire valves, angle, wheel handle, for polished chrome, add		16.70	
0090	Fire valves, angle, wheel handle, 300 lb, 2.5"	EA	108.71	30.81
0100	Fire valves, angle, wheel handle, for polished brass, add		21.79	
0110	Fire valves, angle, wheel handle, for polished chrome, add		31.13	
15416 1999 Foam control valve				
2000	Fire valves, foam control valve, 3"	EA	867.97	27.03
2020	Fire valves, foam supply valve, 2.5"	EA	118.78	23.62
2040	Fire valves, foam proportioner, 8"	EA	1,375.90	78.05
2060	Fire valves, oscillating foam monitor	EA	7,529.77	16.94
15416 6000 Roof manifold, horiz, brass, with valves & caps				
6080	Fire valves, roof manifold, 2.5" x 2.5" x 2.5" x 4", horiz, brass	EA	277.62	67.65
6081	Fire sys, roof manifolds, horiz, brass, w/valve & caps, for vert, add		36.67	
15417 0010 Sprinkler system components				
15417 0800 Air compressor for dry pipe system automatic				
0860	Sprinkler sys, 520 gal cap, 1 HP, auto, compl, air cprsr dry	EA	1,051.47	50.00
15417 2600 Sprinkler heads				
15417 2610 Deluge sprinkler head				
2612	Sprinkler, no supply pipe, 3/8" auto, deluge head	EA	24.19	10.17
2614	Sprinkler, 1/2" pend w/open hd, no supply pipe, deluge head	EA	23.75	9.96
2616	Sprinkler, open hd w/canopy, no supply pipe, 1/2" pend, deluge	EA	25.74	10.94
15417 3700 Standard spray				
3730	Sprinkler, 7/16" orifice, brs, 135 to 286 deg F, 1/2" NP, spr	EA	25.76	11.95
3800	Sprinkler sys, spr hd, std spray, for open spr, deduct		-0.81	
3732	Sprinkler, 7/16" orifice, chrome, 135 to 286 deg F, 1/2" NP, spr	EA	26.03	11.95
3800	Sprinkler sys, spr hd, std spray, for open spr, deduct		-0.86	
15417 6200 Valves				
15417 6210 Alarm				
6280	Sprinkler, valve, gauges, 4", incl, retard chamber, trim	EA	993.83	129.50
6300	Sprinkler, valve, gauges, 6", incl, retard chamber, trim	EA	1,084.81	135.53
6320	Sprinkler, valve, gauges, 8", incl, retard chamber, trim	EA	1,335.88	181.42
6340	Sprinkler components, alarm valve, dry system 4"	EA	2,265.19	86.28
6350	Sprinkler components, alarm valve, dry system 6"	EA	2,674.57	129.50
6360	8 In Alarm Valve - Wet System	EA	2,647.32	542.72
6370	2 In Alarm Valve - Wet System	EA	1,171.77	216.76
6380	3 In Alarm Valve - Wet System	EA	1,716.81	295.87
15417 7000 Deluge, assembly				
7060	Sprinkler, valve, gauges, 3", incl trim emer release, deluge,	EA	1,552.60	104.47
7080	Sprinkler, valve, gauges, 4", incl trim emer release, deluge,	EA	1,976.34	129.08
7100	Sprinkler, valve, gauges, 6", incl trim emer release, deluge,	EA	2,385.67	186.15
15418 0010 Sprinkler systems				
Note: Prices Do Not Include Outside Mains Note: The Cost Of Special Alarm Valves, Siamese Connections, Standpipes, Fire Pumps And Tanks Should Be Added Separately. Not For Use On Final Estimates When Drawings Show Piping And Heads. The Coverage Of One Sprinkler Head Varies From About 180 Sf For Light Hazard Occupancy To About 130 Sf For Extra Hazard Conditions				
15418 0100 Wet pipe				
0110	Sprinkler sys, ord haz exposed, w/valves, cntrl, \$/head, wet	EA	232.53	
0120	Sprinkler sys, ord haz cncl, w/valves, cntrl, \$/head, wet	EA	286.39	
0200	Sprinkler sys, extra haz exposed, w/valves, cntrl,	EA	237.35	
0210	Sprinkler sys, extra haz cncl, w/valves, cntrl, \$/head, wet	EA	282.17	
0304	Sprinkler sys, light haz exposed, dist/grid, \$/head, wet	EA	205.94	
0306	Sprinkler sys, light haz cncl, dist/grid, \$/head, wet pipe	EA	256.83	
0310	Sprinkler sys, ord haz exposed, dist/grid, \$/head, wet pipe	EA	196.88	
0320	Sprinkler sys, ord haz cncl, dist/grid, \$/head, wet pipe	EA	242.51	
0330	Sprinkler sys, ext haz exposed, dist/grid, \$/head, wet pipe	EA	167.92	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0340	Sprinkler sys, ext haz cncl, dist/grid, S/head, wet pipe	EA	205.66	
15418 0400	Preaction			
0410	Sprinkler sys, preaction dist/grid, S/head, ord haz	EA	216.75	
0420	Sprinkler sys, preaction dist/grid, S/head, extra haz	EA	203.28	
15418 1000	Dry pipe			
1530	Sprinkler sys, ord haz exposed, dist/grid, S/head, dry pipe	EA	189.95	
1540	Sprinkler sys, ord haz cncl, dist/grid, S/head, dry pipe	EA	232.28	
1550	Sprinkler sys, ext haz exposed, dist/grid, S/head, dry pipe	EA	183.39	
1560	Sprinkler sys, ext haz cncl, dist/grid, S/head, dry pipe	EA	219.24	
15418 1600	Cylinders W Chemical Dry Chemical Fire Protection Systems			
1610	15 Pound		468.55	
1620	25 Pound		712.18	
1630	50 Pound		1,095.22	
15418 1700	System Components			
1705	Mounting Kit W/Discharge Adapter		144.66	
1710	Mechanical Nozzle		52.71	
1715	Flood Nozzle		60.90	
1720	Distributor		39.83	
1725	Manual Release Kit W/ Cable, Fus ible Link, And Pulleys		204.99	
1730	2" Solenoid Valve		673.53	
1735	Manual Reset Relay		702.82	
1740	Nitrogen Cylinder W Mounting		1,014.40	
1745	Pressure Operated Actuator		248.33	
1750	Electric Control Head		673.53	
1755	Check Valve		96.06	
1760	Thermstat/Detector		271.76	
1765	Merc Releasing Panel, Mercury P/ N 295100 Or Equal		1,335.36	
1770	Horn/Strobe		304.56	
1775	12 Volt Battery		175.70	

15419 Halon Fire Protection Systems

For Pipe And Fittings See 15061

15419 1000 Halon System Equip.

15419 1000 Basic Cost Items

1001	250# Cylinder f/Halon FP System	EA	1,971.77	
1002	Halon Gas f/Halon FP System	LB	8.58	
1003	Master Cylinder f/Halon FP Sys	EA	2,311.25	
1004	Shuttle Check Vlv f/Halon FP Sys	EA	265.92	
1005	Flex Head Cyl f/Halon FP System	EA	264.92	
1006	Nozzles f/Halon FP System	EA	96.46	
1007	Cylinder Support f/Halon FP Sys	EA	76.96	
1008	Solenoid Vlv f/Halon FP System	EA	343.52	
1009	Battery Back-Up f/Halon FP Sys	EA	257.15	

15419 1010 Halon System Control

1011	Control Panel f/Halon FP System	EA	1,822.52	
1012	Smoke Detector f/Halon FP System	EA	130.14	
1013	Annunciator f/Halon FP System	EA	1,825.81	
1014	Pressure Switch f/Halon FP Sys	EA	143.86	
1015	Alarm Horn f/Halon FP System	EA	128.82	
1016	Testing f/Halon FP System	EA	775.40	

15419 2100 Halon System Subcontract Price By SF

2101	Halon System- Small Area(-300SF)		25.62	
2102	Halon System- Large Area(+300SF)		20.50	

15500 Heating

15501 Boilers

15507 1100 Boiler Blowdown Systems

1101	boiler blowdown, auto/manual to , 2000 MBH	EA	2,593.79	
1102	boiler blowdown, auto/manual to , 7300 MBH	EA	2,966.36	

15508 0010 Boilers, gas fired

15508 1000 Cast iron, with insulated jacket

3000	Boilers, 80 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	2,184.77	
7000	Boilers, gas, std cont, for tankless wtr htr on small gas units, add		137.60	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3140	Boilers, 320 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	4,816.26	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		334.03	
3260	Boilers, 1088 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	9,118.51	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		675.69	
3300	Boilers, 1530 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	14,918.70	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		1,210.73	
3320	Boilers, 2000 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	18,061.71	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		1,495.43	
3380	Boilers, 3264 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	26,513.09	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		2,257.71	
3420	Boilers, 4488 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	32,365.50	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		2,699.82	
3460	Boilers, 5520 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	59,576.32	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		5,114.20	
3480	Boilers, 6100 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	66,565.26	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		5,672.53	
3540	Boilers, 6970 MBH, std cont, CI, w/insul jkt, HW GR out, gas	EA	78,645.09	
7000	<i>Boilers, gas, std cont, for tankless wtr htr on small gas units, add</i>		6,388.51	

15509 0010 Boilers, oil fired

15509 1000 Cast iron, with insulated flush jacket

Note: Sectional Cast Iron Construction With Insulating Jacket, Circulator, Controls And Safety Devices, And Tankless Heater (For 115 To 175 Mh Only Note: Prices Include All Accessories, Controls And Set-Up, But Do Not Include Flue Piping, Fuel Piping, Boiler Base Or Pad (Rated By Mh Output). Rated up to the size indicated from the previous size.

1970	53 MBH CI Oil Fired Water Boiler	EA	1,874.44	338.10
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		177.67	
1980	70 MBH CI Oil Fired Water Boiler	EA	2,060.23	371.91
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		195.17	
1990	89 MBH CI Oil Fired Water Boiler	EA	1,791.81	397.44
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		144.60	
2000	Boilers, GR out, 109 MBH, std cont, flame retnn bnr, CI, st,	EA	2,670.68	472.32
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		253.00	
2020	Boilers, GR out, 144 MBH, std cont, flame retnn bnr, CI, st,	EA	3,031.77	527.37
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		293.75	
2040	Boilers, GR out, 173 MBH, std cont, flame retnn bnr, CI, st,	EA	3,383.59	583.43
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		330.42	
2080	Boilers, GR out, 236 MBH, std cont, flame retnn bnr, CI, st,	EA	3,940.75	746.52
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		382.83	
2090	275MBH CI Oil Fired Water Boiler	EA	3,153.11	715.60
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		253.92	
2100	311MBH CI Oil Fired Water Boiler	EA	4,080.22	772.63
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		380.23	
2110	404MBH CI Oil Fired Water Boiler	EA	4,485.74	822.48
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		426.14	
2120	534MBH CI Oil Fired Water Boiler	EA	5,011.63	895.42
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		488.39	
2130	664MBH CI Oil Fired Water Boiler	EA	5,559.60	961.38
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		551.15	
2140	794MBH CI Oil Fired Water Boiler	EA	6,078.51	1,056.84
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		606.92	
2150	1054MBH CI Oil Fired Wtr Boiler	EA	7,717.21	1,472.98
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		732.71	
2180	Boilers, GR out, 1084 MBH, std cont, flame retnn bnr, CI, st,	EA	11,915.44	1,457.66
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		1,365.60	
2190	1184MBH CI Oil Fired Wtr Boiler	EA	8,489.10	1,658.48
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		794.96	
2200	1314MBH CI Oil Fired Wtr Boiler	EA	9,355.55	1,893.24
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		857.20	
2220	Boilers, GR out, 1600 MBH, std cont, flame retnn bnr, CI, st,	EA	15,905.94	1,983.00
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		1,813.80	
2230	1770MBH CI Oil Fired Wtr Boiler	EA	12,754.16	2,271.74
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		1,244.96	
2240	1942MBH CI Oil Fired Wtr Boiler	EA	13,608.14	2,392.01
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		1,337.68	
2260	Boilers, GR out, 2480 MBH, std cont, flame retnn bnr, CI, st,	EA	21,751.40	2,395.44
4000	<i>Boilers, oil fire, for tankless coil in smaller sizes, add</i>		2,555.36	

15509 5000 Steel, insulated jacket, burner

Note: Jacketed Steel Shell, W/O Tankless Heater And Circulator Note: Prices Include Accessor- Ies, Safety Controls And Set-Up But Do Not Include Flue Piping, Fuel Piping, Boiler Base Or Pad (Rated By Mh Output) Standard Accessories Only.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7000	Boilers, GR out, 103 MBH, std cont, flame retnn bnr, stl, HW	EA	2,744.28	224.41
7330	Boilers, oil fired, for zone control package, add per zone		182.94	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		160.04	
7040	Boilers, GR out, 137 MBH, std cont, flame retnn bnr, stl, HW	EA	2,968.24	266.51
7330	Boilers, oil fired, for zone control package, add per zone		196.90	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		169.70	
7100	Boilers, GR out, 315 MBH, std cont, flame retnn bnr, stl, HW	EA	5,857.12	387.69
7330	Boilers, oil fired, for zone control package, add per zone		394.18	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		354.62	
7140	Boilers, GR out, 525 MBH, std cont, flame retnn bnr, stl, HW	EA	8,587.78	740.94
7330	Boilers, oil fired, for zone control package, add per zone		574.35	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		507.37	
7180	Boilers, GR out, 735 MBH, std cont, flame retnn bnr, stl, HW	EA	11,399.56	906.32
7330	Boilers, oil fired, for zone control package, add per zone		766.35	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		687.29	
7220	Boilers, GR out, 1050MBH, std cont, flame retnn bnr, stl, HW	EA	15,648.08	1,196.36
7330	Boilers, oil fired, for zone control package, add per zone		1,053.93	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		950.33	
7280	Boilers, GR out, 2310MBH, std cont, flame retnn bnr, stl, HW	EA	29,929.30	2,175.60
7330	Boilers, oil fired, for zone control package, add per zone		2,022.53	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		1,841.23	
7320	Boilers, GR out, 3150MBH, std cont, flame retnn bnr, stl, HW	EA	43,340.91	4,004.19
7330	Boilers, oil fired, for zone control package, add per zone		2,900.39	
7340	Boilers, oil fired, for tankless coil in steam or hot water, add		2,566.71	
7335	Boilers, oil fired, for low water cut-off, add	EA	202.71	
15510 0010	Boilers, gas/oil			
15510 1000	Cast iron with insulated jacket			
15510 1999	Steam			
2000	Boilers, gas/oil, 720 MBH, comb w/burners & cont, CI, st, GR out	EA	15,015.98	
2040	Boilers, gas/oil, 1084 MBH, comb w/burners & cont, CI, st, GR ou	EA	17,540.12	
2080	Boilers, gas/oil, 1600 MBH, comb w/burners & cont, CI, st, GR ou	EA	22,471.98	
2120	Boilers, gas/oil, 2450 MBH, comb w/burners & cont, CI, st, GR ou	EA	29,267.13	
2160	Boilers, gas/oil, 3000 MBH, comb w/burners & cont, CI, st, GR ou	EA	33,011.28	
2200	Boilers, gas/oil, 3770 MBH, comb w/burners & cont, CI, st, GR ou	EA	53,175.86	
2240	Boilers, gas/oil, 4650 MBH, comb w/burners & cont, CI, st, GR ou	EA	61,917.59	
2300	Boilers, gas/oil, 5810 MBH, comb w/burners & cont, CI, st, GR ou	EA	74,264.65	
2360	Boilers, gas/oil, 6680 MBH, comb w/burners & cont, CI, st, GR ou	EA	88,154.59	
15510 2900	Hbt water			
Note: Sectional Cast Iron Construction With Insulation Jacket, Circulator, Controls And Safety, Devices And Tankless Heater (Rated By Mh Output). Rated up to the size indicated from the previous size.				
2910	Boilers, gas/oil, 200 MBH, comb w/burners & cont, CI, HW, GR out	EA	3,786.14	322.17
2920	Boilers, gas/oil, 300 MBH, comb w/burners & cont, CI, HW, GR out	EA	5,240.28	421.27
2930	Boilers, gas/oil, 400 MBH, comb w/burners & cont, CI, HW, GR out	EA	6,821.56	515.44
2940	Boilers, gas/oil, 500 MBH, comb w/burners & cont, CI, HW, GR out	EA	8,358.02	630.71
3010	Boilers, gas/oil, 600 MBH, comb w/burners & cont, CI, HW, GR out	EA	10,800.84	819.11
3016	Boilers, gas/oil, 700 MBH, comb w/burners & cont, CI, HW, GR out	EA	11,911.98	932.24
3020	Boilers, gas/oil, 876 MBH, comb w/burners & cont, CI, HW, GR out	EA	13,233.78	1,081.13
3022	Boilers, gas/oil, 900 MBH, comb w/burners & cont, CI, HW, GR out	EA	14,520.57	1,253.57
3024	Boilers, gas/oil, 1000 MBH, comb w/burners & cont, CI, HW, GR ou	EA	15,877.03	1,396.88
3040	Boilers, gas/oil, 1168 MBH, comb w/burners & cont, CI, HW, GR ou	EA	18,778.46	1,353.05
3060	Boilers, gas/oil, 1460 MBH, comb w/burners & cont, CI, HW, GR ou	EA	22,742.01	1,418.14
3080	Boilers, gas/oil, 2044 MBH, comb w/burners & cont, CI, HW, GR ou	EA	31,390.80	1,771.24
3200	Boilers, gas/oil, 5256 MBH, comb w/burners & cont, CI, HW, GR ou	EA	75,719.35	4,384.46
3220	Boilers, 6000 MBH, 179 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	110,454.42	6,022.08
3240	Boilers, 7130 MBH, 213 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	119,703.44	8,482.76
3260	Boilers, 9800 MBH, 286 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	135,422.44	11,480.00
3280	Boilers, 10900 MBH, 325.6 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	147,072.19	14,169.60
3290	Boilers, 12200 MBH, 364.5 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	158,042.22	18,255.76
3300	Boilers, 13500 MBH, 403.3 BHP, comb w/bnr&cont, CI, HW, GR out,	EA	179,773.72	26,568.00
15511 0010	Boiler, firebox			
15511 0020	Oil fired			
Note: Psi Steam Or 30 Psi Water - Packaged Type, Complete With Burner And All Basic Controls Normally Required (Boiler Hp). Boiler Sizes Are Based On HP Rating.				
0040	Boiler, firebox, 2680 MBH, 80 HP, 15 PSI st/30 PSI water, oil	EA	26,494.07	1,803.64

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0050	Boiler, firebox, 4185 MBH, 125 HP, 15 PSI st/30 PSI water, oil	EA	32,948.63	1,548.84
0060	Boiler, firebox, 6695 MBH, 200 HP, 15 PSI st/30 PSI water, oil	EA	38,928.14	1,494.93
0070	Boiler, firebox, 10040 MBH, 300 HP, 15 PSI st/30 PSI water, oil	EA	51,933.19	1,663.60
0080	Boiler, firebox, 13390 MBH, 400 HP, 15 PSI st/30 PSI water, oil	EA	57,494.24	1,282.98
0090	Boiler, firebox, 16740 MBH, 500 HP, 15 PSI st/30 PSI water, oil	EA	70,125.36	1,460.91
0100	Boiler, firebox, 20085 MBH, 600 HP, 15 PSI st/30 PSI water, oil	EA	81,316.15	1,935.26
0110	Boiler, firebox, 25100 MBH, 750 HP, 15 PSI st/30 PSI water, oil	EA	95,291.76	2,269.94
15512 1000 Electric Steam Boiler - Packaged Standard Controls				
Note: Price Includes Only Controls, Condensate Tank, Pump etc. (Rated By Kw And Mh).				
1001	18 KW 55 MBH Elect Steam Boiler w/Packaged Standard Controls	EA	2,764.07	147.77
1002	30 KW 110 MBH Elect Steam Boiler w/Packaged Standard Controls	EA	3,314.02	300.57
1003	48 KW 165 MBH Elect Steam Boiler w/Packaged Standard Controls	EA	3,700.53	377.64
1004	60 KW 215 MBH Elect Steam Boiler w/Packaged Standard Controls	EA	4,473.80	506.14
1005	150KW 510 MBH Elect Steam Boiler w/Packaged Standard Controls	EA	7,042.27	757.12
1006	400KW 1350MBH Elect Steam Boiler w/Packaged Standard Controls	EA	15,092.60	1,509.14
15512 2000 Packaged				
Note: Prices include accessories and controls. Rated by Kw and Mh.				
3001	12KW 20-40 MBH, Water Boil, Elec Hyd, Flush Jacketed Steel Shell	EA	1,598.34	98.79
3002	20KW 40-60 MBH, Water Boil, Elec Hyd, Flush Jacketed Steel Shell	EA	1,657.44	150.27
3003	28 KW 95 MBH, Water Boil, Elec Hyd, Flush Jacketed Steel Shell	EA	1,900.70	201.89
3004	40 KW 135 MBH, Water Boil, Elec Hyd, Flush Jacketed Steel Shell	EA	2,265.32	306.68
15513 0010 Boilers, packaged				
15513 1000 Packaged fire tube, #2 oil Steam).				
Note: Price Includes All Standard Controls. Price Also Includes Setting Boilers And Controls. (Rated By Boiler Horsepower And Mh)				
1010	Boiler, pkg scotch mar, 1005MBH 30HP, st/hw, #2oil, fire tube	EA	27,229.32	2,352.33
1014	Boiler, pkg scotch mar, 1675MBH 50HP, st/hw, #2oil, fire tube	EA	33,462.60	2,623.70
1020	Boiler, pkg scotch mar, 3348MBH 100HP, st/hw, #2oil, fire tube	EA	48,740.07	3,404.06
1030	Boiler, pkg scotch mar, 5025MBH 150HP, st/hw, #2oil, fire tube	EA	60,815.26	3,774.24
1040	Boiler, pkg scotch mar, 6696MBH 200HP, st/hw, #2oil, fire tube	EA	73,059.60	4,022.99
1050	Boiler, pkg scotch mar, 8375MBH 250HP, st/hw, #2oil, fire tube	EA	85,847.56	4,286.49
1060	Boiler, pkg scotch mar, 10044MBH 300HP, st/hw, #2oil,	EA	97,367.59	4,487.15
1070	500HP, 16740MBH Scotch Marine Blr #2 Fuel Oil Fired W/15PSI Steam	EA	69,588.18	1,735.94
1080	700HP, 23435MBH Scotch Marine Blr #2 Fuel Oil Fired W/15PSI Steam	EA	85,006.92	1,984.00
15513 1300 Packaged fire tube, #2 oil, 150 PSI steam Steam)				
Note: Price Includes All Standard Controls. Price Also Includes Setting Boilers And Controls. (Rated By Boiler Horsepower And Mh)				
1310	Boiler, pkg scotch mar, 1005MBH 30HP, 150PSI st, #2oil, fire	EA	22,392.18	1,669.63
1320	Boiler, pkg scotch mar, 1675MBH 50HP, 150PSI st, #2oil, fire	EA	26,366.60	1,757.45
1330	Boiler, pkg scotch mar, 3350MBH 100HP, 150PSI st, #2oil, fire	EA	39,542.98	2,334.66
1340	Boiler, pkg scotch mar, 5025MBH 150HP, 150PSI st, #2oil, fire	EA	49,924.01	2,588.83
1350	Boiler, pkg scotch mar, 6700MBH 200HP, 150PSI st, #2oil, fire	EA	56,877.14	2,800.60
1360	Boiler, pkg scotch mar, 10050MBH 300HP, 150PSI st,	EA	85,882.76	3,635.13
1370	500HP, 16740MBH Scotch Marine Blr #2 Fuel Oil Fired W/15PSI Steam	EA	73,832.06	1,420.26
1380	700HP, 23435MBH Scotch Marine Blr #2 Fuel Oil Fired W/15PSI Steam	EA	89,250.79	1,533.09
15513 1400 Packaged scotch marine, #6 oil				
15513 1410 15 PSI steam Steam)				
Note: Price Includes All Standard Controls. Price Also Includes Setting Boilers And Controls. (Rated By Boiler Horsepower And Mh)				
1420	Boiler, pkg scotch mar, 1675MBH, 50HP, 15PSI st, #6oil,	EA	40,094.91	2,632.15
1430	Boiler, pkg scotch mar, 3350MBH, 100HP, 15PSI st, #6oil,	EA	47,450.94	2,838.83
1440	Boiler, pkg scotch mar, 5025MBH, 150HP, 15PSI st, #6oil,	EA	56,219.60	3,062.00
1450	Boiler, pkg scotch mar, 6700MBH, 200HP, 15PSI st, #6oil,	EA	63,258.34	3,157.53
1460	Boiler, pkg scotch mar, 8375MBH, 250HP, 15PSI st, #6oil,	EA	78,938.19	3,680.74
1470	Boiler, pkg scotch mar, 10050MBH, 300HP, 15PSI st,	EA	91,487.60	4,160.81
1480	Boiler, pkg scotch mar, 13400MBH, 400HP, 15PSI st,	EA	106,893.21	4,891.28
15513 1500 150 PSI steam				
Note: Price Includes All Standard Controls. Price Also Includes Setting Boilers And Controls. (Rated By Boiler Horsepower And Mh)				
1510	Boiler, pkg scotch mar, 1675MBH, 50HP, 150PSI st, #6oil,	EA	46,693.54	2,615.50
1520	Boiler, pkg scotch mar, 3350MBH, 100HP, 150PSI st,	EA	53,845.62	2,854.73
1530	Boiler, pkg scotch mar, 5025MBH, 150HP, 150PSI st,	EA	56,219.60	2,676.76
1540	Boiler, pkg scotch mar, 6700MBH, 200HP, 150PSI st,	EA	63,258.34	2,904.10
1550	Boiler, pkg scotch mar, 8375MBH, 250HP, 150PSI st,	EA	78,938.19	3,474.06
1560	Boiler, pkg scotch mar, 10050MBH, 300HP, 150PSI st,	EA	91,487.60	3,610.41

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1570	Boiler, pkg scotch mar, 13400MBH, 400HP, 150PSI st,	EA	121,858.85	5,111.87
15513 2000	Packaged water tube, #2 oil Fired, Steel Shell Wth Insulating Jacket, Standard Controls, Burner And Safety			
	Note: Price include All Controls, Set-Up, Wiring But Do Not Include Flue Piping, Fuel Piping, Or Circulator (Rated By Mh Output)			
2010	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 200 MBH	EA	7,371.20	377.07
2014	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 275 MBH	EA	7,978.32	391.53
2018	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 360 MBH	EA	8,544.21	502.35
2022	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 520 MBH	EA	9,330.36	605.94
2026	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 600 MBH	EA	9,621.97	571.42
2030	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 720 MBH	EA	10,160.57	858.78
2034	Boiler, pkg scotch mar, water tube, st/hw, #2 oil, 960 MBH	EA	11,704.69	1,160.54
2040	Boiler, pkg scotch mar, 1200 MBH, water tube, st/hw, #2 oil	EA	18,659.51	1,738.36
2044	Boiler, pkg scotch mar, 1440 MBH, water tube, st/hw, #2 oil	EA	19,773.73	2,005.18
2060	Boiler, pkg scotch mar, 1600 MBH, water tube, st/hw, #2 oil	EA	20,608.31	1,864.04
2068	Boiler, pkg scotch mar, 1920 MBH, water tube, st/hw, #2 oil	EA	21,713.08	2,096.69
2072	Boiler, pkg scotch mar, 2160 MBH, water tube, st/hw, #2 oil	EA	22,361.52	2,419.24
2080	Boiler, pkg scotch mar, 2400 MBH, water tube, st/hw, #2 oil	EA	23,063.27	2,409.83
2082	3200 MBH Oil Fired H2O Tube Blr Stl Shell w/Insul Jacket & Ctrls	EA	24,528.73	3,986.74
2084	3400 MBH Oil Fired H2O Tube Blr Stl Shell w/Insul Jacket & Ctrls	EA	29,068.11	4,021.48
15513 2200	Packaged water tube, gas fired			
2204	Boiler, pkg scotch mar, 200 MBH, water tube, st/hw, gas	EA	4,881.44	417.79
2208	Boiler, pkg scotch mar, 275 MBH, water tube, st/hw, gas	EA	5,514.53	466.12
2212	Boiler, pkg scotch mar, 360 MBH, water tube, st/hw, gas	EA	5,684.06	630.09
2216	Boiler, pkg scotch mar, 520 MBH, water tube, st/hw, gas	EA	7,112.86	793.59
2220	Boiler, pkg scotch mar, 600 MBH, water tube, st/hw, gas	EA	7,223.60	728.75
2224	Boiler, pkg scotch mar, 720 MBH, water tube, st/hw, gas	EA	7,949.80	871.58
2228	Boiler, pkg scotch mar, 960 MBH, water tube, st/hw, gas	EA	9,317.87	1,121.96
2232	Boiler, pkg scotch mar, 1220 MBH, water tube, st/hw, gas	EA	10,446.58	1,166.04
2236	Boiler, pkg scotch mar, 1440 MBH, water tube, st/hw, gas	EA	11,241.40	1,267.11
2240	Boiler, pkg scotch mar, 1680 MBH, water tube, st/hw, gas	EA	12,561.81	1,516.33
2244	Boiler, pkg scotch mar, 1920 MBH, water tube, st/hw, gas	EA	13,618.48	1,713.82
2248	Boiler, pkg scotch mar, 2160 MBH, water tube, st/hw, gas	EA	14,544.95	2,151.75
2252	Boiler, pkg scotch mar, 2400 MBH, water tube, st/hw, gas	EA	16,252.03	2,109.72
2254	3200 MBH Oil Fired H2O Tube Blr Stl Shell w/Insul Jacket & Ctrls	EA	19,699.81	3,322.16
2256	3400 MBH Oil Fired H2O Tube Blr Stl Shell w/Insul Jacket & Ctrls	EA	23,091.35	3,466.79
15520	Boiler Accessories			
15525 0010	Fuel oil specialties			
15525 0020	Foot valve, single poppet			
0040	Fuel oil spec, 1/2" dia, met to met constr, ft valve, sgl poppet	EA	54.06	6.81
0080	Fuel oil spec, 1" dia, met to met constr, ft valve, sgl poppet	EA	62.37	8.51
0090	1-1/4"D Sgl Poppet Foot Valve Metal to Metal Seat Constr	EA	30.84	9.77
0120	Fuel oil spec, 1.5"dia, met to met constr, ft valve, sgl poppet	EA	89.37	10.55
0140	Fuel oil spec, 2" dia, met to met constr, ft valve, sgl poppet	EA	113.53	12.14
0142	2-1/2"D Sgl Poppet Foot Valve Metal to Metal Seat Constr	EA	106.86	19.43
0144	3"D Sgl Poppet Foot Valve Metal to Metal Seat Constr	EA	135.69	23.57
15525 0160	Foot valve, double poppet			
0164	1"D Dbl Poppet Foot Valve Metal to Metal Seat Constr	EA	27.13	8.71
0165	1-1/4"D Dbl Poppet Foot Valve Metal to Metal Seat Constr	EA	52.03	9.16
0166	Fuel oil spec, 1.5"dia, met to met constr, ft valve, dbl poppet	EA	179.14	10.89
0168	3"D Dbl Poppet Foot Valve Metal to Metal Seat Constr	EA	129.08	19.12
0170	4"D Dbl Poppet Foot Valve Metal to Metal Seat Constr	EA	171.57	22.58
15539	Warm Air Systems			
15541 0010	Duct heaters, electric			
15541 0020	Finned tubular insert			
0100	Duct htr, elec, 4.0kW, 480 V, 3 ph, 500 deg F, 8" W, 6" H, fin	EA	569.02	23.02
0120	Duct htr, elec, 8.0 kW, 480 V, 3 ph, 500 deg F, 8" W, 12" H, fin	EA	884.63	24.48
0140	Duct htr, elec, 12.0 kW, 480 V, 3 ph, 500 deg F, 8" W, 18" H, fin	EA	1,225.11	26.32
0160	Duct htr, elec, 16.0 kW, 480 V, 3 ph, 500 deg F, 8" W, 24" H, fin	EA	1,565.08	28.34
0180	Duct htr, elec, 20.0 kW, 480 V, 3 ph, 500 deg F, 8" W, 30" H, fin	EA	1,904.66	30.73
0300	Duct htr, elec, 6.7kW, 480 V, 3 ph, 500 deg F, 12" W, 6" H, fin	EA	584.14	24.48
0380	Duct htr, elec, 30" H, 33.3 kW, 480 V, 3 ph, 500 deg F, 12" W, fin	EA	1,969.00	33.51
0500	Duct htr, elec, 13.3kW, 480 V, 3 ph, 500 deg F, 18" W, 6" H, fin	EA	624.12	26.32

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0540	Duct htr, elec, 18" H, 40.0 kW, 480 V, 3 ph, 500 deg F, 18" W	EA	1,377.01	30.73
0560	Duct htr, elec, 24" H, 53.3 kW, 480 V, 3 ph, 500 deg F, 18" W	EA	1,819.26	33.51
0580	Duct htr, elec, 30" H, 66.7 kW, 480 V, 3 ph, 500 deg F, 18" W	EA	2,262.56	36.81
0700	Duct htr, elec, 17.8kW, 480 V, 3 ph, 500 deg F, 24" W, 6" H, fin	EA	698.22	28.34
0760	Duct htr, elec, 24" H, 71.1 kW, 480 V, 3 ph, 500 deg F, 24" W	EA	2,019.11	36.81
0780	Duct htr, elec, 30" H, 88.9 kW, 480 V, 3 ph, 500 deg F, 24" W	EA	2,466.88	40.87
0900	Duct htr, elec, 22.2kW, 480 V, 3 ph, 500 deg F, 30" W, 6" H, fin	EA	728.14	30.73
0960	Duct htr, elec, 24" H, 88.9 kW, 480 V, 3 ph, 500 deg F, 30" W	EA	2,136.84	40.87
0980	Duct htr, elec, 30" H, 111.0 kW, 480 V, 3 ph, 500 deg F, 30" W, fi	EA	2,614.04	46.01
15541 1000 Elec, Open Coil Element, Slip-In Blast Coil Duct				
1022	Elec Heater, Open Coil Ele, 1/2 KW Std Slip-In Blast Coil Duct Htr	EA	204.90	28.82
1024	Elec Heater, Open Coil Ele, 1 KW Std Slip-In Blast Coil Duct Htr	EA	209.43	31.25
1026	Elec Heater, Open Coil Ele, 2 KW Std Slip-In Blast Coil Duct Htr	EA	214.78	34.08
1028	Elec Heater, Open Coil Ele, 3 KW Std Slip-In Blast Coil Duct Htr	EA	216.58	35.00
1102	Elec Heater, Open Coil Ele, 6 KW Std Slip-In Blast Coil Duct Htr	EA	261.79	45.10
1104	Elec Heater, Open Coil Ele, 7 KW Std Slip-In Blast Coil Duct Htr	EA	266.10	47.36
1122	Elec Heater, Open Coil Ele, 9 KW Std Slip-In Blast Coil Duct Htr	EA	274.79	52.02
1142	Elec Htr, Open Coil Ele, 12-1/2 KW Std Slip-In Blast Coil Duct Htr	EA	312.12	60.46
15541 1200 Heater W/Finned Tubular Element				
1201	Elec Heater, Finned Tube Ele, 1 KW Std Slip-In Blast Coil Duct Htr	EA	593.53	31.40
1202	Elec Heater, Finned Tube Ele, 2 KW Std Slip-In Blast Coil Duct Htr	EA	617.32	34.26
1203	Elec Heater, Finned Tube Ele, 3 KW Std Slip-In Blast Coil Duct Htr	EA	632.68	34.26
1204	Elec Heater, Finned Tube Ele, 4 KW Std Slip-In Blast Coil Duct Htr	EA	657.54	37.72
1205	Elec Heater, Finned Tube Ele, 5 KW Std Slip-In Blast Coil Duct Htr	EA	914.12	37.50
1206	Elec Heater, Finned Tube Ele, 6 KW Std Slip-In Blast Coil Duct Htr	EA	938.70	37.50
1207	Elec Heater, Finned Tube Ele, 8 KW Std Slip-In Blast Coil Duct Htr	EA	946.55	41.81
1208	Elec Heater, Finned Tube Ele, 9 KW Std Slip-In Blast Coil Duct Htr	EA	956.36	47.01
1209	Elec Heater, Finned Tube Ele, 10KW Std Slip-In Blast Coil Duct Htr	EA	970.19	47.01
1211	Elec Heater, Finned Tube Ele, 15KW Std Slip-In Blast Coil Duct Htr	EA	1,128.75	53.82
1212	Elec Heater, Finned Tube Ele, 20KW Std Slip-In Blast Coil Duct Htr	EA	1,368.43	53.64
1213	Elec Heater, Finned Tube Ele, 30KW Std Slip-In Blast Coil Duct Htr	EA	1,482.05	62.51
1214	Elec Heater, Finned Tube Ele, 40KW Std Slip-In Blast Coil Duct Htr	EA	2,048.98	62.26
15541 2000 Finned tubular flange				
2200	Duct htr, elec, 36"H, 118.8kW, 480 V, 3 ph, 500 deg F, 24"W, fin	EA	2,842.75	40.87
2220	Duct htr, elec, 40"H, 132 kW, 480 V, 3 ph, 500 deg F, 24"W, fin	EA	3,252.72	46.01
2400	Duct htr, elec, 8" H, 40 kW, 480 V, 3 ph, 500 deg F, 36"W, fin tube	EA	1,332.35	33.51
2460	Duct htr, elec, 32"H, 160 kW, 480 V, 3 ph, 500 deg F, 36"W, fin	EA	3,033.72	46.01
15541 3000 Duct Furnace Complete Indoor Factory Assembled				
Note: Includes: Burner, Controls, Stainless Steel Heat Exchanger, Gas Fired And Electric Ignition.				
3010	100 MBH Duct Furnace	EA	834.21	
3020	150 MBH Duct Furnace	EA	975.78	
3030	200 MBH Duct Furnace	EA	1,154.60	
3040	250 MBH Duct Furnace	EA	1,363.23	
3050	300 MBH Duct Furnace	EA	1,428.80	
15542 0010 Furnace hot air All Units Based On Output.				
15542 1000 Electric, UL listed Blower.				
Note: Unit Does Not Include Fresh Air Inlet, Thermostats, Ductwork, Or Electrical Hookup. Can Be Installed For Any Discharge Direction. Blower Suitable For Add-On Cooling Up To 5 Tons.				
1180	Furnaces, hot air htg, 15.7 MBH, blo, std cont, elec, UL listed	EA	478.10	45.42
1182	Furnaces, hot air htg, 31.4 MBH, blo, std cont, elec, UL listed	EA	567.41	51.29
1184	Furnaces, hot air htg, 47.1 MBH, blo, std cont, elec, UL listed	EA	584.99	59.31
1186	Furnaces, hot air htg, 62.9 MBH, blo, std cont, elec, UL listed	EA	633.54	65.57
1188	Furnaces, hot air htg, 78.5 MBH, blo, std cont, elec, UL listed	EA	732.68	77.76
1190	Furnaces, hot air htg, 94.2 MBH, blo, std cont, elec, UL listed	EA	767.27	81.88
1192	Furnaces, hot air htg, 110 MBH, blo, std cont, elec, UL listed	EA	834.37	80.57
1194	Forced Air Electric Furnace, 200000 BTU w/Direct Drive	EA	2,231.35	142.04
1196	Forced Air Electric Furnace, 300000 BTU w/Direct Drive	EA	2,734.05	167.75
1198	Forced Air Electric Furnace, 400000 BTU w/Direct Drive	EA	3,527.91	176.58
15542 3000 Gas, AGA certified, direct drive models				
3020	Furnaces, hot air htg, 45MBH input, blo, std cont, gas,	EA	631.65	106.99
3040	Furnaces, hot air htg, 60MBH input, blo, std cont, gas,	EA	804.16	111.99
3060	Furnaces, hot air htg, 75MBH input, blo, std cont, gas,	EA	851.29	120.91
3080	Furnaces, hot air htg, 84MBH input, blo, std cont, gas,	EA	886.92	123.22

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3100	Furnaces, hot air htg,100MBH input, blo, std cont, gas,	EA	911.23	125.15
3120	Furnaces, hot air htg,125MBH input, blo, std cont, gas,	EA	1,038.18	129.16
3130	Furnaces, hot air htg,150MBH input, blo, std cont, gas,	EA	1,074.54	122.46
3140	Furnaces, hot air htg,200MBH input, blo, std cont, gas,	EA	2,080.07	155.90
3160	Furnaces, hot air htg,300MBH input, blo, std cont, gas,	EA	2,379.43	165.37
3180	Furnaces, hot air htg,400MBH input, blo, std cont, gas,	EA	3,032.31	197.14
15542 3200 Gas fired wall furnace				
15542 3204 Horizontal flow				
3208	Furnaces, hot air htg, rec, 7.7MBH, blo, std cont, gas,	EA	520.37	44.29
3212	Furnaces, hot air htg, rec, 14 MBH, blo, std cont, gas, wall,	EA	587.70	47.43
3216	Furnaces, hot air htg, rec, 24 MBH, blo, std cont, gas, wall,	EA	716.60	27.26
3220	Furnaces, hot air htg, rec, 49 MBH, blo, std cont, gas, wall,	EA	1,086.57	77.35
3224	Furnaces, hot air htg, rec, 65 MBH, blo, std cont, gas, wall,	EA	1,199.55	90.13
15542 3240 Up flow				
3244	Furnaces, hot air htg,rec, 7.7MBH, blo, std cont, gas,	EA	361.91	60.35
3248	Furnaces, hot air htg,rec,14MBH, blo, std cont, gas, wall,	EA	413.26	50.40
3252	Furnaces, hot air htg,rec,24MBH, blo, std cont, gas, wall,	EA	532.60	48.12
3256	Furnaces, hot air htg,rec,49MBH, blo, std cont, gas, wall,	EA	1,047.92	87.09
3260	Furnaces, hot air htg,rec,65MBH, blo, std cont, gas, wall,	EA	1,064.53	93.62
15542 3460 Gas furnace, floor furnace, high efficiency				
3464	Furnaces, hot air htg, 2-3ton cool, 115MBH, blo, std cont,	EA	1,914.15	
3468	Furnaces, hot air htg, 4-5ton cool, 115MBH, blo, std cont,	EA	2,063.04	
15542 3500 Gas furnace, floor furnace				
15542 3510 Up flow				
3514	Furnaces, hot air htg, 45 MBH, 1200 CFM blo, std cont, gas,	EA	733.95	
3518	Furnaces, hot air htg, 75 MBH, 1200 CFM blo, std cont, gas,	EA	809.56	
3522	Furnaces, hot air htg, 100 MBH, 1200 CFM blo, std cont, gas,	EA	924.80	
3526	Furnaces, hot air htg, 125 MBH, 1200 CFM blo, std cont, gas,	EA	1,060.23	
3530	Furnaces, hot air htg, 150 MBH, 1200 CFM blo, std cont, gas,	EA	1,255.41	
3540	Furnaces, hot air htg, 75 MBH, 2000 CFM blo, std cont, gas,	EA	874.75	
3544	Furnaces, hot air htg, 100 MBH, 2000 CFM blo, std cont, gas,	EA	989.99	
3548	Furnaces, hot air htg, 120 MBH, 2000 CFM blo, std cont, gas,	EA	1,125.42	
3552	Furnaces, hot air htg, 150 MBH, 2000 CFM blo, std cont, gas,	EA	1,323.32	
15542 3560 Horizontal flow				
3564	Furnaces, hot air htg, 45 MBH, 1200CFM blo, std cont, gas,	EA	735.78	
3568	Furnaces, hot air htg, 60 MBH, 1200CFM blo, std cont, gas,	EA	800.50	
3572	Furnaces, hot air htg, 70 MBH, 1200CFM blo, std cont, gas,	EA	815.48	
3576	Furnaces, hot air htg, 90 MBH, 2000CFM blo, std cont, gas,	EA	882.30	
3580	Furnaces, hot air htg, 110 MBH, 2000CFM blo, std cont, gas,	EA	916.08	
15542 4000 WarmAir Furnace (Gas Fired, Belt Driven Blower) Up Flow Pattern				
4010	126,000 BTUH Gas Fired Warm Air Furnace, Up Flow Pattern	EA	1,175.39	
4020	160,000 BTUH Gas Fired Warm Air Furnace, Up Flow Pattern	EA	2,114.58	
4030	200,000 BTUH Gas Fired Warm Air Furnace, Up Flow Pattern	EA	2,967.10	
15542 4100 WarmAir Furnace (Gas Fired, Belt Driven Blower) Down Flow Pattern				
4110	126,000 BTUH Gas Fired Warm Air Furnace, Down Flow Pattern	EA	1,269.53	
4120	160,000 BTUH Gas Fired Warm Air Furnace, Down Flow Pattern	EA	2,304.42	
4130	200,000 BTUH Gas Fired Warm Air Furnace, Down Flow Pattern	EA	3,240.11	
15542 4200 WarmAir Furnace (Gas Fired, Belt Driven Blower) Horizontal Pattern				
4210	126,000 BTUH Gas Fired Warm Air Furnace, Horizontal Pattern	EA	1,308.75	
4220	160,000 BTUH Gas Fired Warm Air Furnace, Horizontal Pattern	EA	2,373.46	
4230	200,000 BTUH Gas Fired Warm Air Furnace, Horizontal Pattern	EA	3,329.54	
15542 4300 Removal & Reinstallation Of Furnaces				
Note: Includes Storage And Cleaning. Price Does Not Include Ductwork.				
4310	Remove & Reinstall Forced Air Furnace With Blower	EA	163.50	
15542 6000 Oil, UL listed Blowers.				
Note: Units Do Not Include Thermostats, Ductwork, Blower Cooling Relay, Or Electrical Hookup. Units Suitable For Add- On Cooling.				
15542 6200 Up flow				
6210	Furnaces, hot air htg, blo, std cont, oil, up flow, 105 MBH	EA	1,100.24	109.92
6220	Furnaces, hot air htg, blo, std cont, oil, up flow, 140 MBH	EA	1,243.49	122.63
6230	Furnaces, hot air htg, blo, std cont, oil, up flow, 168 MBH	EA	1,276.66	122.15
15542 6260 Lo-boy style				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6270	Furnaces, hot air htg, 105 MBH, blo, std cont, oil, lo-boy style	EA	1,202.12	120.28
6280	Furnaces, hot air htg, 140 MBH, blo, std cont, oil, lo-boy style	EA	1,297.94	128.09
6290	Furnaces, hot air htg, 189 MBH, blo, std cont, oil, lo-boy style	EA	1,392.58	133.37
6292	FA Oil Furnace, Lo-Boy, 350000 BTU Oil Furnace w/Belt Drive Mtor	EA	3,724.49	
15542 6320 Down flow				
6330	Furnaces, hot air htg, 105 MBH, blo, std cont, oil, down flow	EA	1,140.17	98.62
6340	Furnaces, hot air htg, 140 MBH, blo, std cont, oil, down flow	EA	1,294.04	106.29
6350	Furnaces, hot air htg, 168 MBH, blo, std cont, oil, down flow	EA	1,334.64	90.68
15542 6380 Horizontal flow				
6384	Horiz FA Oil Furnace, 55000 BTU W/Belt Drive Blowers	EA	1,247.10	58.55
6386	Horiz FA Oil Furnace, 84000 BTU W/ Belt Drive Blowers	EA	1,291.89	62.35
6388	Horiz FA Oil Furnace, 99000 BTU W/Belt Drive Blowers	EA	1,389.36	65.47
6390	Furnaces, hot air htg, 105 MBH, blo, std cont, oil, horizontal	EA	1,134.08	72.20
6400	Furnaces, hot air htg, 140 MBH, blo, std cont, oil, horizontal	EA	1,287.95	68.05
6410	Furnaces, hot air htg, 189 MBH, blo, std cont, oil, horizontal	EA	1,329.81	62.45
6412	Horiz FA Oil Furnace, 200000 BTU W/ Belt Drive Blowers	EA	2,961.37	86.38
6414	Horiz FA Oil Furnace, 300000 BTU W/ Belt Drive Blowers	EA	3,132.72	85.17
6416	Horiz FA Oil Furnace, 400000 BTU W/ Belt Drive Blowers	EA	3,727.70	84.52
15542 7000 Induction unit				
15542 7010 Vertical w/ electric heating coils				
7020	Furnaces, hot air, blo, std cont, elec, induct, 60 CFM	EA	1,064.75	36.53
7030	Furnaces, hot air, blo, std cont, elec, induct, 90 CFM	EA	1,296.18	37.64
7040	Furnaces, hot air, blo, std cont, elec, induct, 120 CFM	EA	1,301.86	38.79
7050	Furnaces, hot air, blo, std cont, elec, induct, 150 CFM	EA	1,478.01	39.14
7060	Furnaces, hot air, blo, std cont, elec, induct, 170 CFM	EA	1,481.51	39.28
15542 7100 Horizontal w/ electric heating coils				
7110	Furnaces, hot air, blo, std cont, elec, induct, 60 CFM	EA	883.66	35.63
7120	Furnaces, hot air, blo, std cont, elec, induct, 90 CFM	EA	1,069.82	35.73
7130	Furnaces, hot air, blo, std cont, elec, induct, 120 CFM	EA	1,075.50	36.74
15544 0010 Furnace components and combinations				
15544 0080 Coils, AC evaporator				
2110	Furnace add-on, 2 ton cooling, cased evap coil for air handler	EA	319.32	
2120	Furnace add-on, 2.5 ton cooling, cased evap coil for air handler	EA	356.25	
2130	Furnace add-on, 3 ton cooling, cased evap coil for air handler	EA	397.79	
2150	Furnace add-on, 4 ton cooling, cased evap coil for air handler	EA	489.10	
2160	Furnace add-on, 5 ton cooling, cased evap coil for air handler	EA	568.06	
15544 8000 Refrigerant line set				
8010	Furnace components & combinations, 2 ton, 25',	EA	96.03	
8020	Furnace components & combinations, 2.5-3 ton, 25',	EA	109.89	
8030	Furnace components & combinations, 4-5 ton, 25',	EA	129.85	
15546 0010 Infra-red unit				
Note: Localized Or Total Heating Ceiling Hung Units No Fan Required. Including Controls and Supports.				
15546 0020 Gas fired, unvented, electric ignition				
Note: Surface Chromized Wire Screen Aluminized Steel Housing And Polished Aluminum Reflector				
0060	Infra-red unit, input, 15 MBH, no pipe/wire, gas fired,	EA	463.88	28.42
0100	Infra-red unit, input, 30 MBH, no pipe/wire, gas fired,	EA	492.05	33.14
0140	Infra-red unit, input, 50 MBH, no pipe/wire, gas fired,	EA	595.34	39.99
0180	Infra-red unit, input, 75 MBH, no pipe/wire, gas fired,	EA	738.55	46.73
0220	Infra-red unit, input, 105MBH, no pipe/wire, gas fired,	EA	978.32	60.99
15546 1010 "U" Package				
1020	Up To 75MBH Input Radiant Heater	LF	25.82	1.98
1030	76 To 105MBH Input Radiant Htr	LF	29.83	2.39
1040	106 To 130MBH Input Radiant Htr	LF	36.34	2.66
15546 1050 "S" Straight Package				
1060	Up To 75MBH Input Radiant Heater	LF	21.03	1.71
1070	76 To 105MBH Input Radiant Htr	LF	26.68	1.98
1080	106 To 130MBH Input Radiant Htr	LF	32.32	2.24
15546 2000 Electric, single or three phase				
Note: Anodized Aluminum Reflector And Quartz/Tungsted Tubular Element With An Inner Heavy-Duty Coiled Element				
2010	Infra-red unit, 3400 BTU, electric, 1 or 3 phase, 1 kW	EA	268.33	9.11
2020	Infra-red unit, 10900 BTU, electric, 1 or 3 phase, 3.2 kW	EA	281.07	8.72

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2050	Infra-red unit, 20478 BTU, electric, 1 or 3 phase, 6 kW	EA	500.29	14.25
15547 0010	Make-up air unit			
15547 1000	Rooftop unit, natural gas Curb Filter And Thermostat Wth Capillary			
1040	Make-up air unit, 95 MBH input, sst exch,1245 CFM rftop unit,	EA	3,937.66	108.81
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		295.67	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-369.59	
1140	Make-up air unit, 300MBH input, sst exch,3975 CFM rftop unit,	EA	6,102.93	317.82
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		451.59	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-564.49	
1180	Make-up air unit, 450MBH input, sst exch,5950 CFM rftop unit,	EA	7,617.93	328.70
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		551.42	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-689.27	
1200	Make-up air unit, 600MBH input, sst exch,7940 CFM rftop unit,	EA	8,880.07	417.72
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		640.79	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-800.98	
1220	Make-up air unit, 750MBH input, sst exch,9930 CFM rftop unit,	EA	14,754.42	552.71
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		1,093.33	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-1,366.66	
1260	Make-up air unit,1200MBH input, sst exch,15880CFM rftop unit,	EA	21,261.61	646.99
1500	Make-up air unit, rf top unit, nat gas, for power vent, add		1,468.86	
1800	Make-up air unit,rftop unit,for aluminized stl exch, deduct		-1,836.08	
15547 8000	Rooftop unit, electric Filter And Thermostat Wth Capillary			
8010	Make-up air unit, 33 kW w/curb & controls, electric, rooftop	EA	3,541.88	99.41
8020	Make-up air unit, 100 kW w/curb & controls, electric, rooftop	EA	5,800.90	129.50
8030	Make-up air unit, 150 kW w/curb & controls, electric, rooftop	EA	6,722.67	141.07
8040	Make-up air unit, 250 kW w/curb & controls, electric, rooftop	EA	8,702.64	169.20
8050	Make-up air unit, 400 kW w/curb & controls, electric, rooftop	EA	12,678.54	189.61
15549 0010	Space heaters			
15549 1000	Gas fired			
Note: Units Are For Aluminized Heat Exchangers. Units Do Not Include Piping, Supports, Vent, Or Power Wiring.				
2000	Space htr, cab, 20 MBH out, grl, fan, cont, bnr, prop fan, susp	EA	515.26	
2020	Space htr, cab, 40 MBH out, grl, fan, cont, bnr, prop fan, susp	EA	567.42	
3000	Space htr, cab, grl, fan, cont, bnr, blo type, 40 MBH out	EA	914.51	
3020	Space htr, cab, grl, fan, cont, bnr, blo type, 60 MBH out	EA	1,001.93	
3021	100,000 Btuh Gas/Oil Fired Unit Heater	EA	1,001.93	
3022	145,000 Btuh Gas/Oil Fired Unit Heater	EA	1,500.15	
3024	185,000 Btuh Gas/Oil Fired Unit Heater	EA	1,652.85	
4120	Space htr, cab, 240 MBH out, grl, fan, cont, bnr, pwred vent	EA	2,695.41	
15549 7300	Suspension Munted, Propeller Fan			
Note: Units Are For Aluminized Heat Exchangers. Units Do Not Include Piping, Supports, Vent, Or Power Wiring.				
7301	20 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	997.15	
7302	40 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,097.59	
7303	60 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,227.14	
7304	80 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,372.25	
7305	104 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,622.75	
7306	132 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,816.02	
7307	140 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	1,922.36	
7308	160 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	2,052.16	
7309	180 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	2,209.26	
7311	200 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	2,393.77	
7312	240 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	2,822.94	
7313	280 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	3,308.61	
7314	320 MBH Output, Gas Fired Unit Heater, Suspension Mounted,	EA	3,794.60	
15549 9000	Removal & Reinstallation Of Unit Heaters			
Note: Includes Storage And Cleaning. Price Does Not Include Supports				
9002	Remove & Reinstall Unit Heater, Gas Fired	EA	84.78	
9003	Remove & Reinstall Unit Heater, Hot Water, Horizontal Or Vert.	EA	79.08	
9004	Remove & Reinstall Unit Heater, Steam, Horizontal Or Vertical	EA	106.73	

15560 Heating System Accessories

15561 0010 Heat exchangers

Note: Does Not Include Controls Expansion Tank And Accessories.

15561 0016 Shell & tube type

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15561 0100	Hbt water, by steam			
	Note: In Od. Copper Tubes. Hot Water 40 To 180 Degree By Steam 10 Psi.			
0120	Heat exch, shell&tube, 8 GPM 4 pass, 3/4"OD cu tubes, 10 PSI st	EA	960.56	61.98
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		432.98	
0140	Heat exch, shell&tube, 10 GPM 4 pass, 3/4"OD cu tubes, 10 PSI s	EA	1,467.53	90.09
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		677.00	
0160	Heat exch, shell&tube, 40 GPM 4 pass, 3/4"OD cu tubes, 10 PSI s	EA	2,239.85	99.34
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		1,048.97	
0180	Heat exch, shell&tube, 64 GPM 4 pass, 3/4"OD cu tubes, 10 PSI s	EA	3,500.45	202.09
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		1,608.31	
0200	Heat exch, shell&tube, 96 GPM 4 pass, 3/4"OD cu tubes, 10 PSI s	EA	4,826.12	256.24
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		2,129.22	
0220	Heat exch, shell&tube, 120 GPM 4 pass, 3/4"OD cu tubes, 10 PSI	EA	6,164.86	334.17
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		2,792.35	
0240	Heat exch, shell&tube, 168 GPM 4 pass, 3/4"OD cu tubes, 10 PSI	EA	7,728.11	507.35
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		3,428.94	
0260	Heat exch, shell&tube, 240 GPM 4 pass, 3/4"OD cu tubes, 10 PSI	EA	11,802.43	643.58
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		5,357.32	
0300	Heat exch, shell&tube, 600 GPM 4 pass, 3/4"OD cu tubes, 10 PSI	EA	24,247.49	
0500	Heat exch, shell&tube, 4 pass, 3/4" OD cu tubes, brz hd&tube sh, add		11,502.15	
15561 1000	Hbt water, by water			
	Note: In Od. Copper Tubes. Hot Water 40 To 140 Degree By Water At 200 Degree F			
1020	Heat exch, shell&tube, wtr at 200 deg F, 7 GPM 4 pass, 3/4"OD cu	EA	1,200.62	73.01
1040	Heat exch, shell&tube, wtr at 200 deg F, 16 GPM 4 pass, 3/4"OD cu	EA	1,678.27	87.43
1060	Heat exch, shell&tube, wtr at 200 deg F, 34 GPM 4 pass, 3/4"OD cu	EA	2,519.52	109.28
1080	Heat exch, shell&tube, wtr at 200 deg F, 55 GPM 4 pass, 3/4"OD cu	EA	3,622.13	146.39
1100	Heat exch, shell&tube, wtr at 200 deg F, 74 GPM 4 pass, 3/4"OD cu	EA	4,625.01	157.85
1120	Heat exch, shell&tube, wtr at 200 deg F, 86 GPM 4 pass, 3/4"OD cu	EA	6,093.97	194.75
1140	Heat exch, shell&tube, wtr at 200 deg F, 112 GPM 4 pass, 3/4"OD cu	EA	7,517.20	199.21
1160	Heat exch, shell&tube, wtr at 200 deg F, 126 GPM 4 pass, 3/4"OD cu	EA	9,313.30	208.93
1180	Heat exch, shell&tube, wtr at 200 deg F, 152 GPM 4 pass, 3/4"OD cu	EA	12,142.63	256.10
15562 1000	Unloading Hose And Accessories			
15562 1200	Hoses Wth Braided Rayon Cord, Neoprene Cover, And End Couplings			
15562 1210	Two Braid Hose X 25 Ft.			
1211	3/4"x1-3/4", 2-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplgs	EA	100.03	35.24
1212	1"x1-1/2", 2-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplgs	EA	116.62	13.03
1213	1-1/4"x1-3/4", 2-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplg	EA	162.87	12.67
15562 1220	Two Braid Hose X 50 Ft.			
1221	3/4"x1-3/4", 2-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplgs	EA	199.32	26.95
1222	1"x 1-1/2", 2-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplgs	EA	231.76	26.44
1223	1-1/4"x1-3/4", 2-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplg	EA	325.27	25.66
15562 1230	Three Braid Hose X 25 Ft			
1231	1-1/2"x2-3/32", 3-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplg	EA	249.06	12.37
1232	2"x2-21/32", 3-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplgs	EA	309.04	16.72
1233	2-1/2"x3-3/16", 3-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplg	EA	434.56	20.66
1234	3"x 3-3/4", 3-Braid Hose, 25' L Rayon Cord, Neop Cvr & End Cplgs	EA	545.78	24.93
15562 1240	Three Braid Hose X 50 Ft			
1241	1-1/2"x2-3/32", 3-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplg	EA	444.87	25.15
1242	2"x 2-21/32", 3-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplg	EA	544.85	33.36
1243	2-1/2"x3-3/16", 3-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplg	EA	733.48	41.98
1244	3"x 3-3/4", 3-Braid Hose, 50' L Rayon Cord, Neop Cvr & End Cplgs	EA	895.35	49.97
15562 1300	Tank Car Unloading Hose Assemblies			
15562 1310	Flexible Galv. Steel Assemblies Complete With Female Coupling Each End			
1311	2"ID x 10' Flex Galv Hose Assy w/Female Coupling Each End	EA	191.82	29.23
1312	2-1/2"ID x10' Flex Galv Hose Assy w/Female Coupling Each End	EA	230.13	28.98
1313	3"ID x 10' Flex Galv Hose Assy w/Female Coupling Each End	EA	269.37	28.79
1314	4"ID x 10' Flex Galv Hose Assy w/Female Coupling Each End	EA	422.61	28.42
15562 1400	Accessories Tank, Gas/Oil			
1401	Manhole Spill Containment	EA	422.24	
1402	Fill Adapter, 4"	EA	151.04	
1403	Fill Cap, 4"	EA	67.99	
1404	Vent Cap, 2"	EA	41.83	
1405	4" X 2" Extractor Fitting	EA	122.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1406	Float Vent Valve	EA	132.57	
1407	Vapor Hose Adapter	EA	123.21	
1408	Dust Cap	EA	55.43	
1409	1" Double Poppet Foot Valve	EA	143.14	
1411	10' Wood Gage Stick	EA	9.05	
15562 1500	UST Pump Enclosures			
1501	Secondary Containment Collar	EA	565.91	
1502	Turbine Enclosure w/Lid 4'L x 42" Dia	EA	565.91	
1503	Fitting Kit for Turbine Enclosure	EA	113.18	
1504	Grommet Kits for Plumbing & Electrical	EA	226.36	
1505	Turbine Electrical Coupling Kit	EA	282.95	
15562 2100	Standard Gas Station Pumps			
15562 2110	Gasoline Pumps With Polished S.S. Dial Frame, S.			
Note: S. Nozzle Side Panel. Four Wheel, Self-Timing Meter, Cable Retractor, 120 Mesh Cartridge Strainer (60 Mesh For Diesel Fuels). Internal Gear Pump, Reverse Flow Air Separator, 1/2 In Connector. High Speed Pump, 3/4 H.P. Mtor, 1 In Hose And Standard Nozzle.				
2111	Std Gas Sta Pump, 3/4HP Mtor 1" Hose and Standard Nozzle	EA	1,787.17	133.44
15565 0010	Hydronic heating			
Note: Terminal units, not incl. main supply pipe.				
15565 1322	Finned tube baseboard			
1324	Hydronic hgt, term units, 4'L, fin tube basebrd encl 3/4"tube	EA	75.50	6.35
1326	Hydronic hgt, term units, 6'L, fin tube basebrd encl 3/4"tube	EA	107.34	9.86
1328	Hydronic hgt, term units, 8'L, fin tube basebrd encl 3/4"tube	EA	151.00	14.55
1330	Hydronic hgt,fin tube baseboard, for corners, add	EA	13.63	
1332	Hydronic hgt,fin tube baseboard, for valve enclosure, add	EA	21.89	
1334	Hydronic hgt,fin tube baseboard, for filler piece, add	EA	18.15	
1336	Hydronic hgt,fin tube baseboard, for end cap, add	EA	15.20	
15565 2204	Convactor, multifin			
2210	Hydronic hgt, term units, 2pipe w/cab 17"Hx24"L, convactor,	EA	186.91	31.15
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		13.01	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		18.69	
2214	Hydronic hgt, term units, 2pipe w/cab 17"Hx36"L, convactor,	EA	261.21	40.13
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		19.52	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		26.12	
2218	Hydronic hgt, term units, 2pipe w/cab 17"Hx48"L, convactor,	EA	336.98	53.61
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		26.03	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		33.70	
2222	Hydronic hgt, term units, 2pipe w/cab 21"Hx24"L, convactor,	EA	193.22	39.24
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		13.01	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		19.32	
2226	Hydronic hgt, term units, 2pipe w/cab 21"Hx36"L, convactor,	EA	264.43	44.95
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		19.52	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		26.44	
2228	Hydronic hgt, term units, 2pipe w/cab 21"Hx48"L, convactor,	EA	343.75	53.36
2240	Hydronic hgt,2 pipe multi fin convactor,for knob oper damper,add		26.03	
2243	Hydronic hgt,2 pipe multi fin,for snap-on inlet grille, add		34.38	
2241	Hydronic hgt,2 pipe multi fin convactor,for metal trim strips,	EA	18.55	
2245	Hydronic hgt,2 pipe multi fin convactor,for hinged access	EA	19.66	
2246	Hydronic hgt,2 pipe multi fin convactor,for air chamber,	EA	13.91	
15565 3950	Unit heaters, propeller, steam			
15565 3999	Horizontal			
4000	Hydronic hgt, unit htr, 12 MBH, propeller, 2 PSI steam horiz	EA	719.38	30.66
4020	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 28.2 MBH	EA	900.52	36.33
4040	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 36.5 MBH	EA	960.62	45.41
4060	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 43.9 MBH	EA	967.97	44.70
4100	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 65.6 MBH	EA	1,096.55	51.20
4120	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 87.6 MBH	EA	1,164.30	54.11
4140	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 96.8 MBH	EA	1,333.16	58.72
4160	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 133.3 MBH	EA	1,439.31	70.39
4180	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 157.6 MBH	EA	1,467.69	88.35
4200	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 197.7 MBH	EA	1,809.72	109.81
4220	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 257.2 MBH	EA	2,087.19	109.77
4240	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 286.9 MBH	EA	2,143.96	97.11
4260	Hydronic hgt, unit htr, prop, 2 PSI steam horiz, 364 MBH	EA	2,600.60	113.29
15565 4309	Vertical flow			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4310	Hydronic htg, unit htr, 40.0 MBH, prop, 2 PSI steam vert	EA	1,139.60	33.42
4314	Hydronic htg, unit htr, 58.5 MBH, prop, 2 PSI steam vert	EA	1,158.95	45.41
4318	Hydronic htg, unit htr, 92.0 MBH, prop, 2 PSI steam vert	EA	1,271.91	52.02
4322	Hydronic htg, unit htr, 109.7 MBH, prop, 2 PSI steam vert	EA	1,361.63	60.63
4326	Hydronic htg, unit htr, 131.0 MBH, prop, 2 PSI steam vert	EA	1,413.53	89.41
4330	Hydronic htg, unit htr, 160.0 MBH, prop, 2 PSI steam vert	EA	1,586.62	117.26
4334	Hydronic htg, unit htr, 194.0 MBH, prop, 2 PSI steam vert	EA	1,727.04	136.60
4338	Hydronic htg, unit htr, 212.0 MBH, prop, 2 PSI steam vert	EA	1,824.07	156.36
4342	Hydronic htg, unit htr, 247.0 MBH, prop, 2 PSI steam vert	EA	2,115.29	140.07
4346	Hydronic htg, unit htr, 297.0 MBH, prop, 2 PSI steam vert	EA	2,345.36	166.62
4350	Hydronic htg, unit htr, 333.0 MBH, prop, 2 PSI steam vert	EA	2,636.80	162.63
4354	Hydronic htg, unit htr, 420 MBH, prop, 2 PSI steam vert flow	EA	3,013.83	174.01
4358	Hydronic htg, unit htr, 500 MBH, prop, 2 PSI steam vert flow	EA	3,490.74	223.72
15565 4400 Unit heaters, propeller, hot water				
15565 4404 Horizontal				
4408	Hydronic heating, horiz, 6 MBH, unit heater, hot water,	EA	433.60	
4412	Hydronic heating, horiz, 12 MBH, unit heater, hot water,	EA	433.60	35.55
4416	Hydronic heating, horiz, 16 MBH, unit heater, hot water,	EA	509.21	46.44
4420	Hydronic heating, horiz, 24 MBH, unit heater, hot water,	EA	612.29	50.10
4424	Hydronic heating, horiz, 29 MBH, unit heater, hot water,	EA	678.74	53.97
4428	Hydronic heating, horiz, 47 MBH, unit heater, hot water,	EA	748.87	57.02
4432	Hydronic heating, horiz, 63 MBH, unit heater, hot water,	EA	867.64	68.54
4436	Hydronic heating, horiz, 81 MBH, unit heater, hot water,	EA	923.77	63.15
4440	Hydronic heating, horiz, 90 MBH, unit heater, hot water,	EA	1,033.70	61.99
4460	Hydronic heating, horiz, 133 MBH, unit heater, hot water,	EA	1,205.82	66.63
4464	Hydronic heating, horiz, 139 MBH, unit heater, hot water,	EA	1,363.04	79.72
4468	Hydronic heating, horiz, 198 MBH, unit heater, hot water,	EA	1,648.63	78.62
4472	Hydronic heating, horiz, 224 MBH, unit heater, hot water,	EA	1,705.40	75.29
4476	Hydronic heating, horiz, 273 MBH, unit heater, hot water,	EA	1,934.69	79.97
15565 4500 Vertical flow				
4504	Hydronic heating, 8 MBH, unit heater, hot water, propeller,	EA	559.78	30.55
4508	Hydronic heating, 12 MBH, unit heater, hot water, propeller,	EA	559.78	30.55
4512	Hydronic heating, 16 MBH, unit heater, hot water, propeller,	EA	559.78	30.55
4516	Hydronic heating, 30 MBH, unit heater, hot water, propeller,	EA	596.24	32.08
4520	Hydronic heating, 43 MBH, unit heater, hot water, propeller,	EA	670.71	39.63
4524	Hydronic heating, 57 MBH, unit heater, hot water, propeller,	EA	798.71	49.18
4528	Hydronic heating, 68 MBH, unit heater, hot water, propeller,	EA	907.32	60.57
4540	Hydronic heating, 105 MBH, unit heater, hot water, propeller,	EA	971.76	63.72
4544	Hydronic heating, 123 MBH, unit heater, hot water, propeller,	EA	1,712.79	77.21
4550	Hydronic heating, 140 MBH, unit heater, hot water, propeller,	EA	1,712.79	73.80
4554	Hydronic heating, 156 MBH, unit heater, hot water, propeller,	EA	1,794.36	87.39
4560	Hydronic heating, 210 MBH, unit heater, hot water, propeller,	EA	1,794.36	87.67
4564	Hydronic heating, 223 MBH, unit heater, hot water, propeller,	EA	2,253.65	117.48
4568	Hydronic heating, 257 MBH, unit heater, hot water, propeller,	EA	2,963.97	143.98
15566 0010 Humidifiers				
15566 1000 Steam				
Note: Air Handling Installation Standard Unit With Integral Operator Distribution Manifold Strainer Trap And Pneumatic Modulating Valve. Cost Does Not Include Humidistat Or Piping				
1010	Humidifier, st, 24"x24", duct, manifold, pneu cntrl, 3-191 lb/hr	EA	1,166.12	51.09
1090	Humidifier, steam for electrically controlled unit, add		664.00	
1092	Humidifier, steam pneu controlled, for additional manifold, add		280.18	
1020	Humidifier, st, 48"x48", duct, manifold, pneu cntrl, 3-191 lb/hr	EA	1,214.48	58.05
1090	Humidifier, steam for electrically controlled unit, add		664.00	
1092	Humidifier, steam pneu controlled, for additional manifold, add		291.28	
1030	Humidifier, st, 36"x36", duct, manifold, pneu cntrl, 65-334 lb/hr	EA	1,385.90	59.08
1090	Humidifier, steam for electrically controlled unit, add		664.00	
1092	Humidifier, steam pneu controlled, for additional manifold, add		334.65	
1040	Humidifier, st, 72"x72", duct, manifold, pneu cntrl, 65-334 lb/hr	EA	1,832.85	65.28
1090	Humidifier, steam for electrically controlled unit, add		664.00	
1092	Humidifier, steam pneu controlled, for additional manifold, add		444.02	
1050	Humidifier, st, 48"x48", duct, manifold, pneu cntrl, 100-690	EA	1,861.14	66.70
1090	Humidifier, steam for electrically controlled unit, add		664.00	
1092	Humidifier, steam pneu controlled, for additional manifold, add		451.09	
1060	Humidifier, st, 84"x84", duct, manifold, pneu cntrl, 100-690	EA	3,790.80	74.05
1090	Humidifier, steam for electrically controlled unit, add		664.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1092	<i>Humidifier, steam pneu controlled, for additional manifold, add</i>		931.93	
1070	Humidifier, st, 72"x72", duct, manifold, pneu cntrl, 220-2000	EA	5,333.09	68.73
1090	<i>Humidifier, steam for electrically controlled unit, add</i>		664.00	
1092	<i>Humidifier, steam pneu controlled, for additional manifold, add</i>		1,318.33	
1080	Humidifier, st, 144"x144", duct, manifold, pneu cntrl, 220-2000	EA	8,387.31	75.18
1090	<i>Humidifier, steam for electrically controlled unit, add</i>		664.00	
1092	<i>Humidifier, steam pneu controlled, for additional manifold, add</i>		2,080.13	
15566 1200 Electric steam				
Note: Electronic Modulating Duct Or Air Handling Unit Installation 208V-108V With 12 In-72 In Manifolds Included				
1210	Humidifier, elec, 1-96 lb/hr, 12"x72", st, self generating,	EA	4,884.13	70.89
1220	Humidifier, elec, 20-168 lb/hr, 12"x72", st, self generating,	EA	4,884.13	70.89
1290	Humidifier, elec self-gen, in-line mount, for room mounting, add	EA	318.43	
15566 3000 Residential Type				
Note: Includes Solenoid Valve & Flow Through Water Supply. (General Inc. Mdel#1040 Or An Approved Equal 18Gal/Day)				
3001	Duct Or Furnace Mtd Humidifier	EA	187.00	41.82
15567 0010 Insulation				
15567 3000 Ductwork Insulation				
15567 3020 Blanket type, fiberglass				
Note: Reinforced Foil And Kraft Facing Lapped And Joints Sealed Vapor Tight				
3160	Insulation, duct, 1" thk, flex, FRK, .75 lb dens, blanket fbgl	SF	1.74	1.14
3205	<i>Insul, duct, blanket, FRK, for plain blanket, without facing, deduct</i>		-0.03	
3170	Insulation, duct, 1.5" thk, flex, FRK, .75 lb dens, blanket	SF	1.84	0.95
3205	<i>Insul, duct, blanket, FRK, for plain blanket, without facing, deduct</i>		-0.03	
3180	Insulation, duct, 2" thk, flex, FRK, .75 lb dens, blanket fbgl	SF	2.01	0.98
3205	<i>Insul, duct, blanket, FRK, for plain blanket, without facing, deduct</i>		-0.03	
15567 3340 Board type, fiberglass				
Note: Vapor Sealed And Attached To Ducts With Mechanical Fasteners. 3 Lb/Cf				
3344	Insulation, duct, board fbgl, 1-1/2 lb dens, 1" thk	SF	4.34	0.89
3345	Insulation, duct, board fbgl, 1-1/2 lb dens, 1.5" thk	SF	5.34	0.95
3346	Insulation, duct, board fbgl, 1-1/2 lb dens, 2" thk	SF	6.13	1.17
3620	Insulation, duct, 1" thk, 3 lb dens, FRK vap barrier, board	SF	4.75	1.01
3630	Insulation, duct, 1.5" thk, 3 lb dens, FRK vap barrier, board	SF	5.67	1.01
3640	Insulation, duct, 2" thk, 3 lb dens, FRK vap barrier, board	SF	6.37	1.08
3700	Insulation, duct, board fbgl, 3 lb dens, no fin, 1" thick	SF	3.72	0.54
3710	Insulation, duct, board fbgl, 3 lb dens, no fin, 1-1/2" thick	SF	4.72	0.57
3720	Insulation, duct, board fbgl, 3 lb dens, no fin, 2" thick	SF	5.37	0.89
15567 3780 Foam rubber				
3782	Sheet insulation, foam rubber, 1" thick	SF	8.82	1.40
3800	Insulation, finishes, 1/2" cem over 1" wire mesh, incl corner	SF	6.39	1.20
3820	Insulation, finishes, glass cloth, pasted on	SF	5.14	0.70
3900	Insulation, finishes, weatherproof, non-metallic, 2 lb	SF	8.16	1.20
15567 4000 Pipe covering jackets				
Note: Cost Does Not Include Fittings - For Fittings Add 3 Lf (.92M) For Each Fitting Plus 4 Lf (1.2M) For Each Flanged Joint. Fittings Include PVC Cover. Insulation Demo Price is Not to be Used When Demolishing the Attached Piping.				
15567 6600 1/2" Thick Fiberglass				
6700	1/2 In Dia. Pipe, 1/2 In Thick	LF	1.88	0.90
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.03	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.13	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.19	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.28	
6705	3/4 In Dia. Pipe, 1/2 In Thick	LF	1.96	0.90
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.04	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.14	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.20	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.30	
6710	1 In Dia. Pipe, 1/2 In Thick	LF	2.07	0.90
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.04	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.15	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.21	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.32	
6715	1-1/4 In Dia. Pipe, 1/2 In Thick	LF	2.17	0.87
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.04	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.17	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.22	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.34	
6720	1-1/2 In Dia. Pipe, 1/2 In Thick	LF	2.26	0.87
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.18	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.23	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.36	
6725	2 In Dia. Pipe, 1/2 In Thick	LF	2.41	0.87
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.19	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.24	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.39	
6730	2-1/2 In Dia. Pipe, 1/2 In Thick	LF	2.55	0.83
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.22	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.26	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.42	
6735	3 In Dia. Pipe, 1/2 In Thick	LF	2.73	0.80
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.06	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.24	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.27	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.46	
6740	4 In Dia. Pipe, 1/2 In Thick	LF	3.21	1.04
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.08	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.31	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.32	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.56	
6745	6 In Dia. Pipe, 1/2 In Thick	LF	3.80	1.25
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.09	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.38	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.38	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.66	
15567 6839	1" Thick Fiberglass Insulation			
6840	Insul, pipe covering, 1/2" IPS, fbgl, all svce jkt, 1" wall	LF	2.99	1.27
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.04	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.18	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.30	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.43	
6860	Insul, pipe covering, 3/4" IPS, fbgl, all svce jkt, 1" wall	LF	3.22	1.30
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.20	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.32	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.48	
6870	Insul, pipe covering, 1" IPS, fbgl, all svce jkt, 1" wall	LF	3.34	1.33
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.21	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.33	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.49	
6880	Fbgs Cover for 1-1/4"D Pipe, 1"Tk Wth Fire Retardant Jacket	LF	3.22	1.22
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.05	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.20	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.32	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.47	
6890	Insul, pipe covering, 1.5" IPS, fbgl, all svce jkt, 1" wall	LF	3.68	1.64
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.06	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.25	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.37	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.56	
6900	Insul, pipe covering, 2" IPS, fbgl, all svce jkt, 1" wall	LF	3.92	1.64
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.07	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.28	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.39	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.60	
6910	Fbgs Cover for 2-1/2"D Pipe, 1"Tk Wth Fire Retardant Jacket	LF	3.84	1.53
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.06	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.25	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.38	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.57	
6920	Fbgs Cover for 3" D Pipe, 1" Thk Wth Fire Retardant Jacket	LF	4.09	1.53

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.07	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.28	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.41	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.62	
6940	Insul, pipe covering, 4" IPS, fbgl, all svce jkt, 1" wall	LF	5.60	1.81
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.11	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.44	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.56	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.89	
6960	Insul, pipe covering, 6" IPS, fbgl, all svce jkt, 1" wall	LF	6.93	2.09
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.14	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.54	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.69	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		1.10	
6970	8 In Dia. Pipe, 1 In Thick	LF	9.43	1.49
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.32	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		1.26	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.94	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		1.89	
6980	10 In Dia. Pipe, 1 In Thick	LF	11.18	1.81
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.38	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		1.50	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		1.12	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		2.24	
6990	12 In Dia. Pipe, 1 In Thick	LF	12.64	1.91
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.42	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		1.68	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		1.26	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		2.52	
7000	14 In Dia. Pipe, 1 In Thick	LF	14.74	2.01
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.52	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		2.07	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		1.47	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		3.02	
15567 7079	1-1/2" Thick Fiberglass Insulation			
7080	Insul, pipe covering, 1/2" IPS, fbgl, all svce jkt, 1.5" wall	LF	4.01	1.20
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.09	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.36	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.40	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.67	
7100	Insul, pipe covering, 3/4" IPS, fbgl, all svce jkt, 1.5" wall	LF	4.18	1.20
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.09	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.38	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.42	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.70	
7110	Insul, pipe covering, 1" IPS, fbgl, all svce jkt, 1.5" wall	LF	4.39	1.27
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.10	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.40	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.44	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.74	
7120	Insul, pipe covering, 1.25" IPS, fbgl, all svce jkt, 1.5" wall	LF	4.66	1.27
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.11	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.43	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.47	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.79	
7130	Insul, pipe covering, 1.5" IPS, fbgl, all svce jkt, 1.5" wall	LF	4.78	1.27
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.11	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.45	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.48	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.82	
7140	Insul, pipe covering, 2" IPS, fbgl, all svce jkt, 1.5" wall	LF	5.13	1.20
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.12	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.49	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.51	
7782	<i>Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add</i>		0.88	
7150	Insul, pipe covering, 2.5" IPS, fbgl, all svce jkt, 1.5" wall	LF	5.50	1.36
7600	<i>Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct</i>		-0.13	
7650	<i>Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add</i>		0.54	
7780	<i>Insul, pipe cov, fbgl, for single layer of felt, add</i>		0.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
	7782 Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.95	
7160	Insul, pipe covering, 3" IPS, fbgl, all svce jkt, 1.5" wall	LF	5.75	1.30
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.14	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.55	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.58	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.99	
7180	Insul, pipe covering, 4" IPS, fbgl, all svce jkt, 1.5" wall	LF	6.79	1.62
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.16	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.63	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.68	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.15	
7190	Insul, pipe covering, 5" IPS, fbgl, all svce jkt, 1.5" wall	LF	7.44	1.71
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.18	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.71	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.74	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.28	
7200	Insul, pipe covering, 6" IPS, fbgl, all svce jkt, 1.5" wall	LF	8.24	2.12
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.18	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.73	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.82	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.37	
7220	Insul, pipe covering, 8" IPS, fbgl, all svce jkt, 1.5" wall	LF	10.20	2.56
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.23	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.91	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.02	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.71	
7240	Insul, pipe covering, 10" IPS, fbgl, all svce jkt, 1.5" wall	LF	12.06	2.72
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.29	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.15	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.21	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.07	
7250	Insul, pipe covering, 12" IPS, fbgl, all svce jkt, 1.5" wall	LF	13.01	2.85
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.31	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.25	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.30	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.24	
7260	14 In Dia. Pipe, 1-1/2 In Thick	LF	11.05	1.91
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.33	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.32	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.11	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.09	
15567 7319	2" Thick Fiberglass Insulation			
7320	Insul, pipe covering, 1/2" IPS, fbgl, all svce jkt, 2" wall	LF	5.13	1.20
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.14	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.57	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.51	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.94	
7340	Insul, pipe covering, 3/4" IPS, fbgl, all svce jkt, 2" wall	LF	5.34	1.39
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.15	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.59	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.53	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.97	
7350	Insul, pipe covering, 1" IPS, fbgl, all svce jkt, 2" wall	LF	5.65	1.36
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.16	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.62	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.57	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.03	
7360	Insul, pipe covering, 1.25" IPS, fbgl, all svce jkt, 2" wall	LF	5.99	1.36
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.17	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.66	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.60	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.10	
7370	Insul, pipe covering, 1.5" IPS, fbgl, all svce jkt, 2" wall	LF	6.16	1.36
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.17	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.70	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.62	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.14	
7380	Insul, pipe covering, 2" IPS, fbgl, all svce jkt, 2" wall	LF	6.43	1.52
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.18	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.72	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.64	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.19	
7390	Insul, pipe covering, 2.5" IPS, fbgl, all svce jkt, 2" wall	LF	6.87	1.52
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.19	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.78	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.69	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.27	
7400	Insul, pipe covering, 3" IPS, fbgl, all svce jkt, 2" wall	LF	7.37	1.59
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.21	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.84	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.74	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.37	
7420	Insul, pipe covering, 4" IPS, fbgl, all svce jkt, 2" wall	LF	8.72	1.84
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.24	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.96	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.87	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.60	
7440	Insul, pipe covering, 6" IPS, fbgl, all svce jkt, 2" wall	LF	10.67	2.44
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.28	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.12	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.07	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.91	
7460	Insul, pipe covering, 8" IPS, fbgl, all svce jkt, 2" wall	LF	13.25	2.85
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.35	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.38	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.33	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.36	
7480	Insul, pipe covering, 10" IPS, fbgl, all svce jkt, 2" wall	LF	15.51	3.52
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.41	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.65	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.55	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.79	
7490	Fbgs Cover for 12" D Pipe, 2"Thk With Fire Retardant Jacket	LF	13.91	3.37
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.38	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.52	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.39	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.53	
7500	14 In Dia. Pipe, 2 In Thick	LF	15.58	3.12
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.43	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.70	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.56	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.83	
7510	16 In Dia. Pipe, 2 In Thick	LF	17.31	3.57
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.47	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.87	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.73	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.13	
7520	18 In Dia. Pipe, 2 In Thick	LF	19.54	3.75
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.51	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.03	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.95	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.48	
7530	20 In Dia. Pipe, 2 In Thick	LF	21.68	4.16
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.56	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.25	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		2.17	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.86	
7540	24 In Dia. Pipe, 2 In Thick	LF	24.45	4.72
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.63	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.53	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		2.45	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		4.34	
15567 7604	2-1/2" Thick Fiberglass Insulation			
7605	1/2 In Dia. Pipe, 2-1/2 In Thick	LF	5.14	1.32
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.14	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.58	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.51	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.95	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7610	3/4 In Dia. Pipe, 2-1/2 In Thick	LF	5.24	1.32
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.15	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.60	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.52	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.97	
7615	1 In Dia. Pipe, 2-1/2 In Thick	LF	5.48	1.28
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.16	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.64	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.55	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.03	
7620	1-1/4 In Dia. Pipe, 2-1/2 In Thick	LF	5.68	1.32
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.17	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.67	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.57	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.07	
7625	1-1/2 In Dia. Pipe, 2-1/2 In Thick	LF	5.89	1.32
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.18	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.71	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.59	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.12	
7630	2 In Dia. Pipe, 2-1/2 In Thick	LF	6.14	1.29
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.19	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.74	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.61	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.17	
7635	2-1/2 In Dia. Pipe, 2-1/2 In Thick	LF	6.52	1.22
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.20	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.80	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.65	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.25	
7640	3 In Dia. Pipe, 2-1/2 In Thick	LF	6.87	1.22
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.21	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.85	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.69	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.33	
7645	4 In Dia. Pipe, 2-1/2 In Thick	LF	7.71	1.39
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.25	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.99	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.77	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.52	
7650	6 In Dia. Pipe, 2-1/2 In Thick	LF	8.86	1.49
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.29	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.15	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.89	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		1.75	
7655	8 In Dia. Pipe, 2-1/2 In Thick	LF	12.41	1.67
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.45	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		1.79	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.24	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		2.58	
7660	10 In Dia. Pipe, 2-1/2 In Thick	LF	14.94	1.91
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.55	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.19	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.49	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.14	
7665	12 In Dia. Pipe, 2-1/2 In Thick	LF	16.63	2.22
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.58	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.33	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.66	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.41	
7670	14 In Dia. Pipe, 2-1/2 In Thick	LF	18.96	2.57
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.68	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.71	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		1.90	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		3.93	
7675	16 In Dia. Pipe, 2-1/2 In Thick	LF	21.85	3.05
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.75	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		2.98	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		2.19	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		4.42	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7680	18 In Dia. Pipe, 2-1/2 In Thick	LF	23.65	3.19
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.82	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		3.27	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		2.37	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		4.82	
7685	20 In Dia. Pipe, 2-1/2 In Thick	LF	26.79	3.33
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.92	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		3.69	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		2.68	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		5.45	
7690	PVC Snap On Insulation Jacket W Fasteners, .020", W Fittings	SF	5.86	1.94
7600	Insul, pipe cov, fbgl, for fbgl with std canvas jacket, deduct		-0.06	
7650	Insul, pipe cov, fbgl, for polyethylene with UV-res jacket, add		0.22	
7780	Insul, pipe cov, fbgl, for single layer of felt, add		0.59	
7782	Insulation, pipe cover, finishes, for rfg paper, 45 - 55 lb, add		0.75	
15567 7719 Insulation Finishes				
Note: These Prices Are For Jacketing Only And Must Be Added To Insulation Prices				
7720	Insul, pipe covering, finishes, for .010" al jkt, add	SF	2.78	1.20
7740	Insul, pipe covering, finishes, for .016" al jkt, add	SF	2.86	1.17
7760	Insul, pipe covering, finishes, for .010" sst, add	SF	4.26	1.55
15567 7879 Rubber tubing insulation				
8100	Insul, pipe covering, 1/2" wall, 1/4" IPS, rbr tb, flex closed cel	LF	3.70	2.00
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.19	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.63	
8130	Insul, pipe covering, 1/2" wall, 1/2" IPS, rbr tb, flex closed cel	LF	3.87	2.00
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.23	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.77	
8140	Insul, pipe covering, 1/2" wall, 3/4" IPS, rbr tb, flex closed cel	LF	3.97	2.00
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.26	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.87	
8150	Insul, pipe covering, 1/2" wall, 1" IPS, rbr tb, flex closed cell	LF	4.09	2.00
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.29	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.95	
8160	Flexible Elastomeric Unicellular Covers 1-1/4" D Pipe, 1/2" Thk	LF	2.84	1.56
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.13	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.43	
8170	Insul, pipe covering, 1/2" wall, 1.5" IPS, rbr tb, flex closed cel	LF	4.51	2.34
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.40	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		1.34	
8180	Insul, pipe covering, 1/2" wall, 2" IPS, rbr tb, flex closed cell	LF	4.92	2.52
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.51	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		1.71	
8190	Flexible Elastomeric Unicellular Covers 2-1/2" D Pipe, 1/2" Thk	LF	3.36	1.60
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.22	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		0.73	
8200	Flexible Elastomeric Unicellular Cover for 3" D Pipe 1/2" Thk In	LF	3.89	1.53
8280	Insul, pipe cov, flex closed cell rbr tb, for 3/8" thk cov, deduct		-0.37	
8290	Insul, pipe cov, flex closed cell rbr tb, for 3/4" thk cov, add		1.22	
15567 8600 Flexible Elastomeric Unicellular Insulation, 1/2" Thick, For Refrigeration Piping.				
8605	5/8" O.D. Pipe, 1/2" Thk Insul	LF	2.35	1.07
8610	7/8" O.D. Pipe, 1/2" Thk Insul	LF	2.39	1.07
8615	1-1/8" O.D. Pipe, 1/2" Thk Insul	LF	2.42	1.07
8620	1-3/8" O.D. Pipe, 1/2" Thk Insul	LF	2.45	1.07
8625	1-5/8" O.D. Pipe, 1/2" Thk Insul	LF	2.90	1.18
8630	2-1/8" O.D. Pipe, 1/2" Thk Insul	LF	2.99	1.18
8635	2-5/8" O.D. Pipe, 1/2" Thk Insul	LF	3.13	1.18
8640	3-1/8" O.D. Pipe, 1/2" Thk Insul	LF	3.29	1.18
8645	3-5/8" O.D. Pipe, 1/2" Thk Insul	LF	3.57	1.18
8650	4-1/8" O.D. Pipe, 1/2" Thk Insul	LF	4.04	1.32
15568 0010 Tanks				
15568 1999 Steel, liquid expansion				
15568 1999 Painted				
Note: Glass Tappings - 125 Psi, 240 Deg F Tanks Below Are Sized By Capacity And Diameter And Height				
2000	Tanks, steel, 15 gallon capacity, ASME, liquid	EA	372.93	25.33
2020	Tanks, steel, 24 gallon capacity, ASME, liquid	EA	384.34	30.73

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2040	Tanks, steel, 30 gallon capacity, ASME, liquid	EA	429.30	34.92
2060	Tanks, steel, 40 gallon capacity, ASME, liquid	EA	489.69	42.01
2080	Tanks, steel, 60 gallon capacity, ASME, liquid	EA	593.01	52.51
2100	Tanks, steel, 80 gallon capacity, ASME, liquid	EA	620.13	60.14
2120	Tanks, steel, 100 gallon capacity, ASME, liquid	EA	786.43	70.11
2130	Tanks, steel, 120 gallon capacity, ASME, liquid	EA	877.51	85.86
2140	Tanks, steel, 135 gallon capacity, ASME, liquid	EA	924.08	72.91
2150	Tanks, steel, 175 gallon capacity, ASME, liquid	EA	1,245.44	98.10
2160	Tanks, steel, 220 gallon capacity, ASME, liquid	EA	1,422.49	122.87
2170	Tanks, steel, 240 gallon capacity, ASME, liquid	EA	1,581.13	133.51
2174	Tanks, steel, 280 gallon capacity, ASME, liquid	EA	1,880.84	131.98
2180	Tanks, steel, 305 gallon capacity, ASME, liquid	EA	2,094.92	143.09
2190	Tanks, steel, 400 gallon capacity, ASME, liquid	EA	2,333.37	62.44
2194	Tanks, steel, 550 gallon capacity, ASME, liquid	EA	3,223.30	95.09
15568 2700 Galvanized steel 150 Psi With Gauge Glass Gage Cocks				
2710	Tank, galv stl, w/gauge glass & cocks, 15 gal, ASME 150 PSI,	EA	725.07	15.97
2720	Tank, galv stl, w/gauge glass & cocks, 30 gal, ASME 150 PSI,	EA	881.83	23.13
2730	Tank, galv stl, w/gauge glass & cocks, 40 gal, ASME 150 PSI,	EA	997.22	28.42
2740	Tank, galv stl, w/gauge glass & cocks, 60 gal, ASME 150 PSI,	EA	1,133.89	36.58
15569 0010 Vent chimney				
15569 0020 Gas, double wall, galvanized steel, round				
15569 0020 Rectangular vent				
0081	Vent chimney prefab, 3"x5', UL listed, gas, dbl wall, galv stl	EA	57.00	9.60
0082	Vent chimney prefab, 3"x4', UL listed, gas, dbl wall, galv stl	EA	45.60	7.81
0083	Vent chimney prefab, 3"x3', UL listed, gas, dbl wall, galv stl	EA	34.20	5.87
0084	Vent chimney prefab, 3"x2', UL listed, gas, dbl wall, galv stl	EA	22.80	3.63
0085	Vent chimney prefab, 3"x1.5', UL listed, gas, dbl wall, galv stl	EA	17.10	2.97
0086	Vent chimney prefab, 3"x1', UL listed, gas, dbl wall, galv stl	EA	11.40	1.69
0101	Vent chimney prefab, 4"x5', UL listed, gas, dbl wall, galv stl	EA	63.39	10.33
0102	Vent chimney prefab, 4"x4', UL listed, gas, dbl wall, galv stl	EA	50.71	8.12
0104	Vent chimney prefab, 4"x3', UL listed, gas, dbl wall, galv stl	EA	38.00	5.98
0105	Vent chimney prefab, 4"x2', UL listed, gas, dbl wall, galv stl	EA	25.36	3.87
0106	Vent chimney prefab, 4"x1.5', UL listed, gas, dbl wall, galv stl	EA	19.02	3.14
0107	Vent chimney prefab, 4"x1', UL listed, gas, dbl wall, galv stl	EA	12.68	1.69
0143	Vent chimney prefab, 6"x5', UL listed, gas, dbl wall, galv stl	EA	77.02	11.99
0144	Vent chimney prefab, 6"x4', UL listed, gas, dbl wall, galv stl	EA	61.61	9.50
0145	Vent chimney prefab, 6"x3', UL listed, gas, dbl wall, galv stl	EA	46.21	7.05
0146	Vent chimney prefab, 6"x2', UL listed, gas, dbl wall, galv stl	EA	30.80	4.21
0147	Vent chimney prefab, 6"x1.5', UL listed, gas, dbl wall, galv stl	EA	23.11	3.28
0148	Vent chimney prefab, 6"x1', UL listed, gas, dbl wall, galv stl	EA	15.40	1.66
0181	Vent chimney prefab, 8"x5', UL listed, gas, dbl wall, galv stl	EA	104.58	13.26
0182	Vent chimney prefab, 8"x4', UL listed, gas, dbl wall, galv stl	EA	83.67	10.12
0183	Vent chimney prefab, 8"x3', UL listed, gas, dbl wall, galv stl	EA	62.81	7.67
0184	Vent chimney prefab, 8"x2', UL listed, gas, dbl wall, galv stl	EA	41.84	4.66
0185	Vent chimney prefab, 8"x1.5', UL listed, gas, dbl wall, galv stl	EA	31.37	3.83
0186	Vent chimney prefab, 8"x1', UL listed, gas, dbl wall, galv stl	EA	20.92	2.35
0201	Vent chimney prefab, 10"x3', UL listed, gas, dbl wall, galv stl	EA	99.63	9.19
0202	Vent chimney prefab, 10"x1.5', UL listed, gas, dbl wall, galv	EA	49.82	4.25
0221	Vent chimney prefab, 12"x3', UL listed, gas, dbl wall, galv stl	EA	124.63	10.02
0222	Vent chimney prefab, 12"x1.5', UL listed, gas, dbl wall, galv	EA	62.38	4.42
0261	Vent chimney prefab, 16"x3', UL listed, gas, dbl wall, galv stl	EA	240.02	11.95
0262	Vent chimney prefab, 16"x1.5', UL listed, gas, dbl wall, galv	EA	119.94	4.77
0281	Vent chimney prefab, 18"x3', UL listed, gas, dbl wall, galv stl	EA	299.54	14.16
0282	Vent chimney prefab, 18"x1.5', UL listed, gas, dbl wall, galv	EA	149.86	6.56
0341	Vent chimney prefab, 24"x3', UL listed, gas, dbl wall, galv stl	EA	551.14	16.33
0342	Vent chimney prefab, 24"x1.5', UL listed, gas, dbl wall, galv	EA	275.77	9.83
15569 0659 45_ elbow				
0660	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 3" dia	EA	24.55	4.52
0670	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 4" dia	EA	27.11	4.70
0690	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 6" dia	EA	33.72	5.87
0710	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 8" dia	EA	46.65	7.43
0720	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 10" dia	EA	86.04	10.29
0730	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 12" dia	EA	104.95	11.33
0740	Vent chimney prefab, gas, dbl w, galv stl, elb 45 deg, 14" dia	EA	137.88	7.60

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0750	Vent chimney prefab, gas, dbl w. galv stl, elb 45 deg, 16" dia	EA	167.86	9.67
0760	Vent chimney prefab, gas, dbl w. galv stl, elb 45 deg, 18" dia	EA	217.54	10.16
0770	Vent chimney prefab, gas, dbl w. galv stl, elb 45 deg, 20" dia	EA	260.20	18.89
0790	Vent chimney prefab, gas, dbl w. galv stl, elb 45 deg, 24" dia	EA	460.88	24.95
15569 0900 Adjustable Flue Vent Pipe Round				
0918	Vent chimney prefab, 3" dia to 12", pipe, gas, dbl wall, adj	EA	22.85	2.94
0920	Vent chimney prefab, 4" dia to 12", pipe, gas, dbl wall, adj	EA	25.17	2.94
0924	Vent chimney prefab, 6" dia to 12", pipe, gas, dbl wall, adj	EA	29.93	2.90
0928	Vent chimney prefab, 8" dia to 12", pipe, gas, dbl wall, adj	EA	38.15	4.11
0930	Vent chimney prefab, 10" dia to 18", pipe, gas, dbl wall, adj	EA	86.45	5.11
0932	Vent chimney prefab, 12" dia to 18", pipe, gas, dbl wall, adj	EA	102.63	5.28
0936	Vent chimney prefab, 16" dia to 18", pipe, gas, dbl wall, adj	EA	177.21	6.25
0938	Vent chimney prefab, 18" dia to 18", pipe, gas, dbl wall, adj	EA	207.09	8.43
0944	Vent chimney prefab, 24" dia to 18", pipe, gas, dbl wall, adj	EA	372.23	10.97
15569 0949 90_ elbow				
0950	Vent chimney prefab, adj, 3" dia, gas, dbl wall, galv stl,	EA	31.96	4.77
0960	Vent chimney prefab, adj, 4" dia, gas, dbl wall, galv stl,	EA	34.96	5.04
0980	Vent chimney prefab, adj, 6" dia, gas, dbl wall, galv stl,	EA	44.50	6.25
1010	Vent chimney prefab, adj, 8" dia, gas, dbl wall, galv stl,	EA	65.10	8.26
1012	Vent chimney prefab, adj, 10" dia, gas, dbl wall, galv stl,	EA	160.56	14.68
1013	Vent chimney prefab, adj, 14" dia, gas, dbl wall, galv stl,	LF	262.61	18.10
1014	Vent chimney prefab, adj, 16" dia, gas, dbl wall, galv stl,	LF	322.96	14.44
1015	Vent chimney prefab, adj, 18" dia, gas, dbl wall, galv stl,	LF	422.95	16.55
1016	Vent chimney prefab, adj, 20" dia, gas, dbl wall, galv stl,	LF	496.73	24.14
15569 1019 Wall thimble				
1020	Vent chimney prefab, 4 to 7" adj, 3" dia, gas, dbl wall galv	EA	28.76	3.80
1022	Vent chimney prefab, 4 to 7" adj, 4" dia, gas, dbl wall galv	EA	30.31	4.08
1030	Vent chimney prefab, 4 to 7" adj, 8" dia, gas, dbl wall galv	EA	41.94	5.56
15569 1039 Roof flashing prefabricated				
1040	Vent chimney, 3" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	21.69	3.94
1050	Vent chimney, 4" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	24.95	4.15
1070	Vent chimney, 6" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	32.01	4.28
1100	Vent chimney, 10" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	73.94	10.36
1110	Vent chimney, 12" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	90.17	12.12
1140	Vent chimney, 18" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	168.30	12.47
1170	Vent chimney, 24" dia, gas, dbl wall, galv stl, ftg, roof flash	EA	334.86	15.23
15569 1199 Tee				
1200	Vent chimney prefab, 3" dia, gas, dbl wall, galv stl, ftg, T	EA	43.11	6.46
1210	Vent chimney prefab, 4" dia, gas, dbl wall, galv stl, ftg, T	EA	44.82	7.39
1230	Vent chimney prefab, 6" dia, gas, dbl wall, galv stl, ftg, T	EA	50.61	8.36
1250	Vent chimney prefab, 8" dia, gas, dbl wall, galv stl, ftg, T	EA	66.87	10.36
1260	Vent chimney prefab, 10" dia, gas, dbl wall, galv stl, ftg, T	EA	139.56	16.24
1270	Vent chimney prefab, 12" dia, gas, dbl wall, galv stl, ftg, T	EA	163.79	19.28
1290	Vent chimney prefab, 16" dia, gas, dbl wall, galv stl, ftg, T	EA	349.32	26.15
1300	Vent chimney prefab, 18" dia, gas, dbl wall, galv stl, ftg, T	EA	432.35	30.47
1330	Vent chimney prefab, 24" dia, gas, dbl wall, galv stl, ftg, T	EA	847.77	38.37
15569 1749 Top				
1750	Vent chimney prefab, 3" dia, gas, dbl wall, galv stl, ftg,	EA	20.44	2.73
1760	Vent chimney prefab, 4" dia, gas, dbl wall, galv stl, ftg,	EA	21.48	2.97
1780	Vent chimney prefab, 6" dia, gas, dbl wall, galv stl, ftg,	EA	29.38	3.49
1800	Vent chimney prefab, 8" dia, gas, dbl wall, galv stl, ftg,	EA	45.29	4.87
1810	Vent chimney prefab, 10" dia, gas, dbl wall, galv stl, ftg,	EA	86.48	6.32
1820	Vent chimney prefab, 12" dia, gas, dbl wall, galv stl, ftg,	EA	123.17	8.05
1840	Vent chimney prefab, 16" dia, gas, dbl wall, galv stl, ftg,	EA	237.34	11.61
1850	Vent chimney prefab, 18" dia, gas, dbl wall, galv stl, ftg,	EA	404.86	14.13
1880	Vent chimney prefab, 24" dia, gas, dbl wall, galv stl, ftg,	EA	766.12	19.56
15569 1900 Gas, double wall, galvanized steel, oval				
15569 1900 Oval vent				
1904	Vent chimney prefab, gas, dbl wall, galv stl, oval, 4"x1'	EA	20.05	2.11
1908	Vent chimney prefab, gas, dbl wall, galv stl, oval, 5"/6"x1'	EA	33.75	2.59
15569 1912 Adjustable length fittings				
1914	Vent chimney prefab, 4" dia to 12", gas, dbl wall, galv stl,	EA	29.55	2.80
1918	Vent chimney prefab, 5"/6" dia to 12", gas, dbl wall, galv stl,	EA	51.83	2.66

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15569 1920 45_ elbow				
1922	Vent chimney prefab, elbow 45 deg, 4", gas, dbl wall, galv stl,	EA	40.48	5.53
1926	Vent chimney prefab, elbow 45 deg, 5"/6", gas, dbl wall, galv	EA	61.87	6.91
15569 1930 45_ elbow, flat				
1932	Vent chimney prefab, elbow 45 deg, flat, 4", gas, dbl wall, galv	EA	40.48	5.53
1936	Vent chimney prefab, elbow 45 deg, flat, 5"/6", gas, dbl wall, galv	EA	62.20	6.77
15569 1940 Top				
1942	Vent chimney prefab, gas, dbl wall, galv stl, oval, top, 4"	EA	29.71	3.52
1946	Vent chimney prefab, 5"/6", gas, dbl wall, galv stl, oval, top	EA	39.98	4.11
15569 1950 Adjustable flashing				
1952	Vent chimney prefab, gas, dbl wall, galv stl, oval, adj, 4"	EA	26.59	3.84
1956	Vent chimney prefab, 5"/6", gas, dbl wall, galv stl, oval, adj	EA	38.84	4.35
15569 1960 Tee				
1962	Vent chimney prefab, gas, dbl wall, galv stl, oval, tee, 4"	EA	55.43	8.05
1966	Vent chimney prefab, 5"/6", gas, dbl wall, galv stl, oval, tee	EA	89.42	10.22
15569 1970 Tee, with short snout				
1972	Vent chimney prefab, tee short snout, 4", gas, dbl wall, galv	EA	55.43	8.15
15569 2000 Straight oval				
2001	Vent chimney prefab, oval 4"x5', UL list, gas, dbl wall, galv	EA	72.82	10.67
2002	Vent chimney prefab, oval 4"x4', UL list, gas, dbl wall, galv	EA	60.04	8.53
2003	Vent chimney prefab, oval 4"x3', UL list, gas, dbl wall, galv	EA	46.04	6.50
2004	Vent chimney prefab, oval 4"x2', UL list, gas, dbl wall, galv	EA	32.47	4.32
2005	Vent chimney prefab, oval 4"x1.5', UL list, gas, dbl wall,	EA	25.43	3.52
2021	Vent chimney prefab, oval 6"x5', UL list, gas, dbl wall, galv	EA	96.36	11.81
2022	Vent chimney prefab, oval 6"x4', UL list, gas, dbl wall, galv	EA	84.21	9.33
2023	Vent chimney prefab, oval 6"x3', UL list, gas, dbl wall, galv	EA	63.71	7.46
2024	Vent chimney prefab, oval 6"x2', UL list, gas, dbl wall, galv	EA	48.84	4.66
2025	Vent chimney prefab, oval 6"x1.5', UL list, gas, dbl wall,	EA	42.53	3.63
15569 3200 All fuel, double wall, sst liner, al stl jacket				
15569 3210 Vent				
3237	Vent chimney, all fuel, al stl outer jkt, 5"x30", press, dbl w,	EA	306.26	10.40
3238	Vent chimney, all fuel, al stl outer jkt, 5"x18", press, dbl w,	EA	228.23	7.32
3240	Vent chimney, all fuel, al stl outer jkt, 6"x3', press, dbl w,	EA	137.65	8.46
3241	Vent chimney, all fuel, al stl outer jkt, 6"x2', press, dbl w,	EA	91.76	3.21
3242	Vent chimney, all fuel, al stl outer jkt, 6"x1.5', press, dbl	EA	68.83	3.63
3243	Vent chimney, all fuel, al stl outer jkt, 6" dia, press, dbl w,	EA	45.88	2.35
3248	Vent chimney, all fuel, al stl outer jkt, 12"x3', press, dbl w,	EA	209.31	10.54
3249	Vent chimney, all fuel, al stl outer jkt, 12"x1.5', press, dbl	EA	104.72	5.49
3250	Vent chimney, all fuel, al stl outer jkt, 12"x1', press, dbl w,	EA	98.42	3.73
15569 3260 Round				
3262	3"D x3' L SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	109.54	3.14
3264	3"D x2' L SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	76.93	2.01
3266	3"D x1.5' SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	44.41	1.73
3268	3"D x1' L SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	54.80	1.13
3270	3"x1' Adj SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	54.80	1.13
3272	4"D x1.5' SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	45.68	2.01
3274	4"D x1' L SST/Galv Flue/Vent Pipe SST Inner Wall/Galv Outer Wall	EA	54.04	1.13
15569 3288 Adjustable fittings				
3291	Vent chimney, all fuel, adj 18" sect, 5" dia, press, dbl w ftg,	EA	107.59	2.21
3292	Vent chimney, all fuel, adj 18"/30" sect, 6" dia, press, dbl w	EA	137.50	2.83
15569 3350 90_ elbow				
3352	3" SST/Galv Flue/Vent 90 Deg Ell SST Inner Wall/Galv Outer Wall	EA	46.47	2.97
3353	Vent chimney, all fuel, elb 90 deg fixed, 5" dia, press, dbl w	EA	211.49	4.49
3354	Vent chimney, all fuel, elb 90 deg fixed, 6" dia, press, dbl w	EA	226.63	5.49
15569 3400 45_ elbow				
3402	3" SST/Galv Flue/Vent 45 Deg Ell SST Inner Wall/Galv Outer Wall	EA	35.42	3.04
3403	4" SST/Galv Flue/Vent 45 Deg Ell SST Inner Wall/Galv Outer Wall	EA	41.40	3.60
3404	Vent chimney, all fuel, elb 45 deg, 6" dia, press, dbl w ftg,	EA	148.91	4.56
3407	Vent chimney, all fuel, elb 45 deg, 12" dia, press, dbl w ftg,	EA	215.50	6.53
15569 3450 Tee				
3452	3" SST/Galv Flue/Vent Pipe Tees SST Inner Wall/Galv Outer Wall	EA	49.64	4.24
3453	4" SST/Galv Flue/Vent Pipe Tees SST Inner Wall/Galv Outer Wall	EA	57.58	5.47

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3454	Vent chimney, all fuel, T 90 deg, 6" dia, press, dbl w ftg,	EA	159.93	5.56
3457	Vent chimney, all fuel, T 90 deg, 12" dia, press, dbl w ftg,	EA	242.98	6.08
15569 3670	Exit cone			
3674	Vent chimney, exit cone, 316 sst only, 6" dia	EA	141.79	2.66
3675	Vent chimney, exit cone, 316 sst only, 8" dia	EA	149.35	2.90
3676	Vent chimney, exit cone, 316 sst only, 10" dia	EA	161.42	3.32
3677	Vent chimney, exit cone, 316 sst only, 12" dia	EA	169.27	6.25
15569 3770	Stack cap			
3772	3" SST/Galv Flue/Vent Top Cap SST Inner Wall/Galv Outer Wall	EA	44.65	1.45
3773	Vent chimney, stack cap, 316 sst only, 5" dia	EA	84.17	3.00
3774	Vent chimney, stack cap, 316 sst only, 6" dia	EA	156.77	2.66
3805	3x4"SST/Galv Flue/Vent Increaser SST Inner Wall/Galv Outer Wall	EA	78.60	3.50
3806	Vent chimney, storm collar, 5" dia, 304 stainless steel only	EA	39.00	3.45
3810	4x6"SST/Galv Flue/Vent Increaser SST Inner Wall/Galv Outer Wall	EA	95.29	4.63
3812	3" SST/Galv Flue/Vent Econo-Top SST Inner Wall/Galv Outer Wall	EA	131.80	1.41
3814	4" SST/Galv Flue/Vent Econo-Top SST Inner Wall/Galv Outer Wall	EA	140.24	1.69
15569 4000	Round, Galvanized Collar, Storm Double Wall			
4010	3" Rnd Galv Stor Collar	EA	8.14	1.34
4020	5" Rnd Galv Stor Collar	EA	8.80	1.38
15600	HVAC Piping Specialties			
15601	Heat/Cool Piping Miscellaneous			
15602 0010	Automatic air vent			
0180	Auto air vent, CI body, 1/2" NP inl, 250psi, sst internals,	EA	287.66	12.10
0220	Auto air vent, CI body, 3/4" NP inl, 250psi, sst internals,	EA	287.66	9.15
0340	Auto air vent, CI body, 1.5" NP inl, 250psi, sst internals,	EA	851.22	20.65
0380	Auto air vent, CI body, 2" NP inl, 250psi, sst internals,	EA	851.13	20.76
0410	Manual Air Vent Coin Type 1/8" M PT, 1/2" Copper		8.25	
0420	Manual Air Vent Coin Type 1/8" M PT, 3/4" Copper		8.90	
0430	Air Vent Taco Hi-Vent 400-3 or E qual, 150 psi/240 Deg		160.46	
15603 0010	Wet Taps Include Valve & Machine Work			
0010	6" Wet Taps Includes Valve And Machine Work	EA	1,093.00	
0012	4" Wet Taps Includes Valve And Machine Work	EA	843.75	
0014	2" Wet Taps Includes Valve And Machine Work	EA	395.88	
0016	1" Wet Taps Includes Valve And Machine Work	EA	203.28	
0018	3/4" Wet Taps Includes Valve And Machine Work	EA	174.97	
15605 0010	Air control			
15605 0030	Air separator, with strainer			
Note: Separators Are Priced By Capacity In Gallons Per Minute And By Boiler Connection Sizes And Types.				
0040	Air control, separator, w/strainer, 2" dia	EA	630.18	74.89
0080	Air control, separator, w/strainer, 2.5" dia	EA	720.42	89.31
0100	Air control, separator, w/strainer, 3" dia	EA	1,064.91	120.81
0120	Air control, separator, w/strainer, 4" dia	EA	1,526.58	168.89
0130	Air control, separator, w/strainer, 5" dia	EA	1,865.88	170.78
0140	Air control, separator, w/strainer, 6" dia	EA	2,288.91	186.52
0160	Air control, separator, w/strainer, 8" dia	EA	3,330.80	246.10
0180	Air control, separator, w/strainer, 10" dia	EA	5,121.44	313.72
0200	Air control, separator, w/strainer, 12" dia	EA	8,510.65	523.60
15605 1000	Inertial Air Separator			
Note: Costs Shown Are For Each Cell Required And Includes Bleed Air Fan W/Extra Heavy Duty Blades And Direct Drive Motor				
1101	Inertial Air Separator, 1 Cell (100 CFM)	EA	4,621.28	65.63
1102	Inertial Air Separator, 2-4 Cells (200-400 CFM)	EA	5,864.19	54.57
1103	Inertial Air Separator, 5-9 Cells (500-900 CFM)	EA	7,313.14	46.93
1104	Inertial Air Separator, 10-20Cell (1000-2000 CFM)	EA	9,574.29	36.29
1105	Inertial Air Separator, 21-30Cell (2100-3000 CFM)	EA	12,618.02	36.25
1106	Inertial Air Separator, 31-40Cell (3100-4000 CFM)	EA	12,913.86	32.64
15605 2000	Boiler air fitting			
2010	Air control, boiler air fitting, 1.25" 19 GPM	EA	301.68	2.27
2020	Air control, boiler air fitting, 1.5" 8 GPM	EA	325.48	2.66
2021	Air control, boiler air fitting, 2" 75 GPM	EA	438.99	2.13
2022	Air Sep Blr Ftng, 18GPM Side Outl w/2" Boiler Conn, 2" to System	EA	4,135.85	3.12
15605 2040	Boiler fitting, top outlet			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2050	Air control, boiler fitting, top outlet, 2", 12 GPM	EA	112.18	0.50
2060	Air control, boiler fitting, top outlet, 2", 19 GPM	EA	114.03	0.57
2070	Air control, boiler fitting, top outlet, 2", 26 GPM	EA	128.85	0.60
2100	Air control, boiler fitting, top outlet, 3", 46 GPM	EA	194.04	1.14
2110	Air control, boiler fitting, top outlet, 3", 68 GPM	EA	226.18	1.38
2130	Air control, boiler fitting, top outlet, 4", 125 GPM	EA	283.19	2.66
2132	Air Sep Blr Ftng, 42GPM Side Outl w/4" Boiler Conn, 4" to System	EA	4,650.76	1.45
2150	Air control, boiler fitting, top outlet, 6", 220 GPM	EA	513.38	1.45
2160	Air control, boiler fitting, top outlet, 6", 640 GPM	EA	623.72	1.56
2162	Air Sep Blr Ftg, 180GPM Side Outl w/6" Boiler Conn, 6" to System	EA	23,202.09	2.42
2170	Air Sep Blr Ftng, 37GPM Side Outl w/3" Boiler Conn, 3" to System	EA	5,220.58	1.19
2180	8" Air Septr Boiler Ftng, 1200 GP w/8" Boiler Conn, 8" to System	EA	22,475.55	3.61
15605 2400 Compression tank air fitting				
2410	Air control, compression tank air fitting, tanks 9" to 24" dia	EA	59.51	7.68
2420	Air control, compression tank air fitting, tanks >= 100 gal	EA	179.00	8.36
15605 2500 Burners for Boiler Conversion				
Note: Includes furnish and install burner and mounting plate only. Price Includes mechanical and electrical labor for installation of burners.				
2510	700 MBH Max Input Burner w/2" Boiler Connection, Screwed	EA	4,127.10	
2520	2100 MBH Max Input Burner w/2-1/2" Boiler Conn, Screwed	EA	5,994.32	
2530	2800 MBH Max Input Burner w/3" Boiler Connection, Screwed	EA	7,073.18	
2540	3800 MBH Max Input Burner w/4" Boiler Connection, Flanged	EA	8,405.15	
15619 1800 Circuit Sensor				
1801	Circuit sensor, wfr orifice insr type, 2-1/2" pipe size	EA	137.20	
1802	Circuit sensor, wfr orifice insr type, 3" pipe size	EA	153.59	
1803	Circuit sensor, wfr orifice insr type, 4" pipe size	EA	175.25	
1804	Circuit sensor, wfr orifice insr type, 5" pipe size	EA	223.63	
1805	Circuit sensor, wfr orifice insr type, 6" pipe size	EA	261.22	
1806	Circuit sensor, wfr orifice insr type, 8" pipe size	EA	371.38	
1807	Circuit sensor, wfr orifice insr type, 10" pipe size	EA	431.10	
1808	Circuit sensor, wfr orifice insr type, 12" pipe size	EA	704.99	
15619 2500 Dielectric Unions				
2501	std gskt for wtr&air, 250 psi, F IPT X swt, 1/2" pipe	EA	5.14	
2502	std gskt for wtr&air, 250 psi, F IPT X swt, 3/4" pipe	EA	5.46	
2503	std gskt for wtr&air, 250 psi, F IPT X swt, 1" pipe	EA	8.89	
2504	std gskt for wtr&air, 250 psi, F I PT X swt, 1-1/4" pipe	EA	13.84	
2505	std gskt for wtr&air, 250 psi, F I PT X swt, 1-1/2" pipe	EA	19.89	
2506	std gskt for wtr&air, 250 psi, F IPT X swt, 2" pipe	EA	27.21	
2507	std gskt for wtr&air, 250 psi, F IPT X brs, 1/2" pipe	EA	8.30	
2508	std gskt for wtr&air, 250 psi, F IPT X brs, 3/4" pipe	EA	10.49	
2509	std gskt for wtr&air, 250 psi, F IPT X brs, 1" pipe	EA	14.89	
2510	std gskt for wtr&air, 250 psi, F I PT X brs, 1-1/4" pipe	EA	21.82	
2511	std gskt for wtr&air, 250 psi, F I PT X brs, 1-1/2" pipe	EA	29.51	
2512	std gskt for wtr&air, 250 psi, F IPT X brs, 2" pipe	EA	37.96	
2513	std gskt for wtr&air, 250 psi, F to F, str, 1/2" pipe	EA	6.95	
2514	std gskt for wtr&air, 250 psi, F to F, str, 3/4" pipe	EA	7.89	
2515	std gskt for wtr & air, 250 psi, F to F, str, 1" pipe	EA	9.91	
2516	std gskt for wtr&air, 250 psi, F t o F, str, 1-1/4" pipe	EA	13.56	
2517	std gskt for wtr&air, 250 psi, F t o F, str, 1-1/2" pipe	EA	19.83	
2518	std gskt for wtr & air, 250 psi, F to F, str, 2" pipe	EA	27.77	
2519	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 1-1/2" pipe	EA	47.01	
2520	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 2" pipe	EA	54.00	
2521	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 2-1/2" pipe	EA	60.03	
2522	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 3" pipe	EA	80.23	
2523	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 4" pipe	EA	204.71	
2524	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 5" pipe	EA	329.21	
2525	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 6" pipe	EA	382.57	
2526	std gskt for wtr&air, 175 psi, flg, F IPT X swt, 8" pipe	EA	1,040.84	
2527	std gskt for wtr&air, F IPT to brs, 1-1/2" pipe size	EA	69.09	
2528	std gskt for wtr & air, F IPT t o brs, 2" pipe size	EA	82.30	
2529	std gskt for wtr&air, F IPT to brs, 2-1/2" pipe size	EA	118.88	
2530	std gskt for wtr & air, F IPT t o brs, 3" pipe size	EA	137.39	
2531	std gskt for wtr & air, F IPT t o brs, 4" pipe size	EA	233.00	
2532	std gskt for wtr & air, F IPT t o brs, 5" pipe size	EA	261.31	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2533	std gskt for wtr & air, F IPT t o brs, 6" pipe size	EA	311.26	
2534	std gskt for wtr & air, F IPT t o brs, 8" pipe size	EA	503.23	
2535	std gskt for wtr & air, F IPT t o F IPT, 1-1/2" pipe	EA	44.19	
2536	std gskt for wtr & air, F IPT t o F IPT, 2" pipe size	EA	47.77	
2537	std gskt for wtr & air, F IPT t o F IPT, 2-1/2" pipe	EA	60.03	
2538	std gskt for wtr & air, F IPT t o F IPT, 3" pipe size	EA	74.01	
2539	std gskt for wtr & air, F IPT t o F IPT, 4" pipe size	EA	110.76	
2540	std gskt for wtr & air, F IPT t o F IPT, 5" pipe size	EA	126.62	
2541	std gskt for wtr & air, F IPT t o F IPT, 6" pipe size	EA	168.66	
2542	std gskt for wtr & air, F IPT t o F IPT, 8" pipe size	EA	228.20	
2543	std gskt for water & air, cu to cu, 1-1/2" pipe size	EA	57.20	
2544	std gaskets for water and air, cu to cu, 2" pipe size	EA	65.32	
2545	std gskt for water & air, cu to cu, 2-1/2" pipe size	EA	71.35	
2546	std gaskets for water and air, cu to cu, 3" pipe size	EA	88.16	
2547	std gaskets for water and air, cu to cu, 4" pipe size	EA	268.09	
2548	std gaskets for water and air, cu to cu, 5" pipe size	EA	426.55	
2549	std gaskets for water and air, cu to cu, 6" pipe size	EA	518.39	
2550	std gaskets for water and air, cu to cu, 8" pipe size	EA	1,369.06	
15619 5200 Hydronic Heating Control Valves				
5201	Control valve, HW, nelec, thermo static, radiator supply, 1/2" di	EA	41.75	
5202	Control valve, HW, nelec, thermo static, radiator supply, 3/4" di	EA	42.64	
5203	Control valve, HW, nelec, thermo static, radiator supply, 1" dia	EA	52.36	
5204	Control valve, HW, nelec, thermo static, radiator supply, 1.25" di	EA	73.82	
5205	HW manual, radiator supply, 1/ 2" pipe, angle union	EA	24.77	
5206	HW manual, radiator supply, 3/ 4" pipe, angle union	EA	30.75	
5207	Control valve, HW manual, radia tor supply, 1" pipe, angle unio	EA	39.34	
5208	HW man, radiator, bal, str, sw t conns, 1/2" pipe	EA	10.29	
5209	HW man, radiator, bal, str, sw t conns, 3/4" pipe	EA	14.06	
5210	HW man, radiator, bal, str, sw t conns, 1" pipe size	EA	21.85	
5211	Balance and stop valve 1/2" size	EA	24.92	
5212	Balance and stop valve 3/4" size	EA	17.11	
5213	Balance and stop valve 1" size	EA	21.12	
5214	Balance and stop valve 1-1/4" si ze	EA	26.29	
5215	stm radiator, sply, 1/2" pipe size, angle un	EA	28.73	
5216	stm radiator, sply, 3/4" pipe size, angle un	EA	32.45	
5217	stm radiator, sply, 1" pipe si ze, angle un	EA	40.47	
5218	stm radiator, sply, 1-1/4" pip e size, angle un	EA	50.06	
5219	sys balancing&shut-off, qtr tur n, 175 psi, 1/2" size	EA	12.30	
5220	sys balancing&shut-off, qtr tur n, 175 psi, 3/4" size	EA	11.51	
5221	sys balancing & shut-off, qtr t urn, 175 psi, 1" size	EA	14.61	
5222	sys balancing&shut-off, qtr turn, 175 psi, 1-1/4" size	EA	23.29	
5223	sys balancing&shut-off, qtr turn, 175 psi, 1-1/2" size	EA	28.94	
5224	sys balancing & shut-off, qtr t urn, 175 psi, 2" size	EA	34.56	
15619 5800 Pressure Reducing Valve				
5801	stm pilot operated, thrded, ir on body, 1/2" size	EA	630.26	
5802	stm pilot operated, thrded, ir on body, 3/4" size	EA	659.15	
5803	stm pilot operated, thrded, ir on body, 1" size	EA	698.97	
5804	stm pilot operated, thrded, ir on body, 1-1/4" size	EA	818.68	
5805	stm pilot operated, thrded, ir on body, 1-1/2" size	EA	887.54	
5806	stm pilot operated, thrded, ir on body, 2" size	EA	1,167.67	
5807	stm pilot operated, flg, ib, 1 25 lb. flg, 2" size	EA	1,221.43	
5808	Pressure rdcg V, stm pilot operat ed, flg, ib, 125 LB flg, 2-1/2" siz	EA	1,537.41	
5809	stm pilot operated, flg, ib, 1 25 lb. flg, 3" size	EA	1,572.01	
5810	stm pilot operated, flg, ib, 1 25 lb. flg, 4" size	EA	2,004.32	
15619 9000 Thermflo Indicator				
9001	for balancing, sweat conns, 1-1 /4" pipe size	EA	387.97	
9002	for balancing, sweat conns, 1-1 /2" pipe size	EA	394.26	
9003	for balancing, sweat connection s, 2" pipe size	EA	417.84	
9004	for balancing, sweat conns, 2-1 /2" pipe size	EA	633.56	
9005	for balancing, flange connectio ns, 3" pipe size	EA	761.19	
9006	for balancing, flange connectio ns, 4" pipe size	EA	911.87	
9007	for balancing, flange connectio ns, 5" pipe size	EA	1,146.42	
9008	for balancing, flange connectio ns, 6" pipe size	EA	1,240.35	
9009	for balancing, flange connectio ns, 8" pipe size	EA	1,506.83	
15620 0010 Circuit setter balancing valves portable				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0200	Circuit setter read out meter, 1% accuracy, for balance valve	EA	610.84	
0210	Circuit setter read out meter, 0.5-50% Accuracy, use w/port vlv	EA	1,319.13	
0220	Circuit setter read out meter, 0.5-75% Accuracy, use w/port vlv	EA	1,319.13	
0230	Circuit setter read out meter, .5-100% Accuracy, use w/port vlv	EA		
15622 0010	Cocks, drains & specialties			
15622 1000	Boiler drain			
15622 1010	Pipe thread to hose, bronze			
1030	Cocks & drains, 1/2" size, boiler drain, pipe thread to	EA	14.22	2.84
1040	Cocks & drains, 3/4" size, boiler drain, pipe thread to	EA	15.19	2.76
15622 4500	Gauge cock, brass			
4510	Gauge cock, brass, 1/4" FPT	EA	22.43	6.05
4512	Gauge cock, brass, 1/4" MPT	EA	22.43	7.64
15622 4600	Pigtail steam syphon			
4604	Steam specialties, pigtail, steam syphon, 1/4"	EA	21.99	7.83
15622 4650	Smubber valve			
4654	Steam specialties, snubber valve, 1/4"	EA	24.00	6.47
15622 4660	Nipple, black steel			
4664	Steam specialties, nipple, black steel, 1/4" x 3"	EA	9.71	4.31
15625 0010	Expansion joints			
15625 1000	Bellows with internal & external sleeves			
Note: Note sst Element With Internal Sleeves And External Covers				
15625 1020	Male threads			
1030	Bellows, male thd, 1/2" dia, sst, 150 lb, w/intl sleeves &	EA	160.89	6.13
1040	Bellows, male thd, 3/4" dia, sst, 150 lb, w/intl sleeves &	EA	157.74	6.81
1050	Bellows, male thd, 1" dia, sst, 150 lb, w/intl sleeves & ext	EA	168.71	6.65
1060	Bellows, male thd, 1.25" dia, sst, 150 lb, w/intl sleeves &	EA	186.42	7.75
1070	Bellows, male thd, 1.5" dia, sst, 150 lb, w/intl sleeves & ext	EA	343.57	9.15
1080	Bellows, male thd, 2" dia, sst, 150 lb, w/intl sleeves & ext	EA	370.45	10.21
15625 1110	Flanged ends			
1120	Bellows, flgd ends, 1.25" dia, sst, 150 lb, w/intl sleeves &	EA	345.51	8.85
1130	Bellows, flgd ends, 1.5" dia, sst, 150 lb, w/intl sleeves &	EA	347.81	9.65
1140	Bellows, flgd ends, 2" dia, sst, 150 lb, w/intl sleeves & ext	EA	401.46	11.76
1150	Bellows, flgd ends, 3" dia, sst, 150 lb, w/intl sleeves & ext	EA	484.07	24.13
1160	Bellows, flgd ends, 4" dia, sst, 150 lb, w/intl sleeves & ext	EA	560.61	38.60
1170	Bellows, flgd ends, 5" dia, sst, 150 lb, w/intl sleeves & ext	EA	654.36	47.86
1180	Bellows, flgd ends, 6" dia, sst, 150 lb, w/intl sleeves & ext	EA	733.16	57.29
1190	Bellows, flgd ends, 8" dia, sst, 150 lb, w/intl sleeves & ext	EA	968.68	59.90
1200	Bellows, flgd ends, 10" dia, sst, 150 lb, w/intl sleeves &	EA	1,164.89	67.44
1210	Bellows, flgd ends, 12" dia, sst, 150 lb, w/intl sleeves &	EA	1,451.64	72.55
15635 0010	Flexible metal hose			
15635 0100	Bronze braided, bronze ends			
0120	Flexible met hose, 3/8" dia x 12", conn, brz braided, brz ends	EA	30.19	5.79
0140	Flexible met hose, 1/2" dia x 12", conn, brz braided, brz ends	EA	33.12	7.76
0160	Flexible met hose, 3/4" dia x 12", conn, brz braided, brz ends	EA	42.12	9.87
0180	Flexible met hose, 1" dia x 18", conn, brz braided, brz ends	EA	57.85	9.83
0190	1-1/4"Dx12"Flex Hose Conn, f/Vib Isol Brz Hose w/Hex Thd Npl Ends	EA	52.27	17.22
0200	Flexible met hose, 1.5" dia x 18", conn, brz braided, brz ends	EA	96.51	14.52
0220	Flexible met hose, 2" dia x 18", conn, brz braided, brz ends	EA	112.52	17.36
0230	2-1/2"Dx12"Flex Hose Conn, f/Vib Isol Brz Hose w/Hex Thd Npl Ends	EA	110.29	32.35
15635 1000	Bronze braided, carbon steel ends			
1020	Flexible met hose, 1/4" dia x 12", conn, brz braided, CS ends	EA	24.13	4.77
1040	Flexible met hose, 3/8" dia x 12", conn, brz braided, CS ends	EA	28.64	5.75
1060	Flexible met hose, 1/2" dia x 12", conn, brz braided, CS ends	EA	31.40	6.96
1110	Flexible met hose, 5/8" dia x 24", conn, brz braided, CS ends	EA	59.02	8.02
1120	Flexible met hose, 3/4" dia x 12", conn, brz braided, CS ends	EA	40.12	10.78
1170	Flexible met hose, 7/8" dia x 24", conn, brz braided, CS ends	EA	71.72	10.78
1180	Flexible met hose, conn, brz braided, CS ends, 1" dia x 18"	EA	52.96	3.97
1240	Flexible met hose, 1.25" dia x 18", conn, brz braided, CS ends	EA	61.53	3.71
1280	Flexible met hose, 1.5" dia x 18", conn, brz braided, CS ends	EA	87.60	4.20
1320	Flexible met hose, conn, brz braided, CS ends, 2" dia x 24"	EA	112.80	3.74
1360	Flexible met hose, 2.5" dia x 24", conn, brz braided, CS ends	EA	165.74	3.90
1400	Flexible met hose, conn, brz braided, CS ends, 3" dia x 24"	EA	213.24	5.18

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15635 3000 Stainless steel braid, welded on carbon stl end				
3390	Flexible met hose, 6" x 25', conn,high press, sst braid, CS	EA	231.13	18.15
15635 3400 Metal braid over corrugated stainless steel				
3420	Flexible hose, 1/2" dia x 12", 150 PSI, metal braid over corr	EA	44.30	5.60
3430	Flexible hose, 1" dia x 12", 150 PSI, metal braid over corr sst	EA	44.56	6.81
3440	Flexible hose, 1.5" dia x 12", 150 PSI, metal braid over corr	EA	51.86	8.62
3450	Flexible hose, 2.5" dia x 9", 150 PSI, metal braid over corr	EA	94.25	10.89
3460	Flexible hose, 3" dia x 9", 150 PSI, metal braid over corr sst	EA	119.64	14.15
3470	Flexible hose, 4" dia x 9", 150 PSI, metal braid over corr sst	EA	162.06	17.66
3480	Flexible hose, 4" dia x 30", 150 PSI, metal braid over corr sst	EA	286.87	24.81
3490	Flexible hose, 4" dia x 36", 150 PSI, metal braid over corr sst	EA	343.72	25.90
3500	Flexible hose, 6" dia x 11", 150 PSI, metal braid over corr sst	EA	245.00	24.81
3510	Flexible hose, 6" dia x 36", 150 PSI, metal braid over corr sst	EA	753.05	30.33
3520	Flexible hose, 8" dia x 12", 150 PSI, metal braid over corr sst	EA	401.60	29.50
3530	Flexible hose, 10" dia x 13", 150 PSI, metal braid over corr	EA	546.78	36.34
3540	Flexible hose, 12" dia x 14", 150 PSI, metal braid over corr	EA	902.50	49.67
15635 5000 Flexible hose with connectors				
Note: Braided Metal Hose Type, Bronze.				
15635 5100 Flexible Hse w/Connectors Braided Metal Hose Type, Bronze, MPT Connection.				
5101	1/2" Dia. x 12" Long, MPT Conn	EA	18.05	
5102	1/2" Dia. x 18" Long, MPT Conn	EA	21.72	
5103	1/2" Dia. x 24" Long, MPT Conn	EA	25.62	
5104	1/2" Dia. x 36" Long, MPT Conn	EA	29.42	
5105	3/4" Dia. x 12" Long, MPT Conn	EA	19.82	
5106	3/4" Dia. x 18" Long, MPT Conn	EA	24.01	
5107	3/4" Dia. x 24" Long, MPT Conn	EA	27.41	
5108	3/4" Dia. x 36" Long, MPT Conn	EA	33.94	
5109	1" Dia. x 12" Long, MPT Conn	EA	22.62	
5111	1" Dia. x 18" Long, MPT Conn	EA	24.73	
5112	1" Dia. x 24" Long, MPT Conn	EA	29.40	
5113	1" Dia. x 36" Long, MPT Conn	EA	37.21	
5114	1" Dia. x 48" Long, MPT Conn	EA	44.98	
5115	1" Dia. x 60" Long, MPT Conn	EA	52.76	
5116	1-1/4" Or 1-1/2" Dia x 12" Long, MPT Conn	EA	29.24	
5117	1-1/4" Or 1-1/2" Dia x 18" Long, MPT Conn	EA	32.28	
5118	1-1/4" Or 1-1/2" Dia x 24" Long, MPT Conn	EA	40.56	
5119	1-1/4" Or 1-1/2" Dia x 36" Long, MPT Conn	EA	57.44	
5121	1-1/4" Or 1-1/2" Dia x 48" Long, MPT Conn	EA	66.55	
5122	1-1/4" Or 1-1/2" Dia x 60" Long, MPT Conn	EA	78.67	
5123	2" Dia. x 12" Long, MPT Conn	EA	41.91	
5124	2" Dia. x 18" Long, MPT Conn	EA	48.42	
5125	2" Dia. x 24" Long, MPT Conn	EA	61.02	
5126	2" Dia. x 36" Long, MPT Conn	EA	81.38	
5127	2" Dia. x 48" Long, MPT Conn	EA	100.59	
5128	2" Dia. x 60" Long, MPT Conn	EA	119.78	
5129	2-1/2" Dia. x 12" Long, MPT Conn	EA	42.97	
5131	2-1/2" Dia. x 18" Long, MPT Conn	EA	48.73	
5132	2-1/2" Dia. x 24" Long, MPT Conn	EA	54.55	
5133	2-1/2" Dia. x 36" Long, MPT Conn	EA	67.43	
5134	2-1/2" Dia. x 48" Long, MPT Conn	EA	88.05	
5135	2-1/2" Dia. x 60" Long, MPT Conn	EA	108.70	
5136	3" Dia. x 12" Long, MPT Conn	EA	53.13	
5137	3" Dia. x 18" Long, MPT Conn	EA	59.10	
5138	3" Dia. x 24" Long, MPT Conn	EA	66.09	
5139	3" Dia. x 36" Long, MPT Conn	EA	81.75	
5141	3" Dia. x 48" Long, MPT Conn	EA	106.51	
5142	3" Dia. x 60" Long, MPT Conn	EA	131.31	
5143	4" Dia. x 12" Long, MPT Conn	EA	62.75	
5144	4" Dia. x 18" Long, MPT Conn	EA	67.14	
5145	4" Dia. x 24" Long, MPT Conn	EA	75.04	
5146	4" Dia. x 36" Long, MPT Conn	EA	92.86	
5147	4" Dia. x 48" Long, MPT Conn	EA	120.85	
5148	4" Dia. x 60" Long, MPT Conn	EA	148.90	
15635 5200 Flexible Hse w/Connectors Braided SS Over Braided Carbon Steel Connection.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5201	2" Dia x 12" Lg, Weld End Conn	EA	50.28	
5202	2" Dia x 18" Lg, Weld End Conn	EA	60.72	
5203	2" Dia x 24" Lg, Weld End Conn	EA	70.96	
5204	2" Dia x 36" Lg, Weld End Conn	EA	92.87	
5205	2" Dia x 48" Lg, Weld End Conn	EA	113.64	
5206	2" Dia x 60" Lg, Weld End Conn	EA	134.37	
5214	3" Dia x 12" Lg, Flanged	EA	68.43	
5215	3" Dia x 18" Lg, Flanged	EA	99.94	
5216	3" Dia x 24" Lg, Flanged	EA	131.45	
5217	3" Dia x 36" Lg, Flanged	EA	195.90	
5218	3" Dia x 48" Lg, Flanged	EA	258.92	
5219	3" Dia x 60" Lg, Flanged	EA	321.94	
5221	4" Dia x 12" Lg, Flanged	EA	82.14	
5222	4" Dia x 18" Lg, Flanged	EA	113.42	
5223	4" Dia x 24" Lg, Flanged	EA	144.69	
5224	4" Dia x 36" Lg, Flanged	EA	209.13	
5225	4" Dia x 48" Lg, Flanged	EA	271.68	
5226	4" Dia x 60" Lg, Flanged	EA	334.22	
5227	6" Dia x 18" Lg, Flanged	EA	217.16	
5228	6" Dia x 24" Lg, Flanged	EA	301.74	
5229	6" Dia x 36" Lg, Flanged	EA	474.69	
5231	6" Dia x 48" Lg, Flanged	EA	643.84	
5232	6" Dia x 60" Lg, Flanged	EA	812.99	
5233	8" Dia x 18" Lg, Flanged	EA	378.72	
5234	8" Dia x 24" Lg, Flanged	EA	516.13	
5235	8" Dia x 36" Lg, Flanged	EA	795.35	
5236	8" Dia x 48" Lg, Flanged	EA	1,070.17	
5237	8" Dia x 60" Lg, Flanged	EA	1,344.98	
5238	10" Dia x 18" Lg, Flanged	EA	504.01	
5239	10" Dia x 24" Lg, Flanged	EA	679.32	
5241	10" Dia x 36" Lg, Flanged	EA	1,035.46	
5242	10" Dia x 48" Lg, Flanged	EA	1,386.09	
5243	10" Dia x 60" Lg, Flanged	EA	1,736.72	
5244	12" Dia x 24" Lg, Flanged	EA	868.74	
5245	12" Dia x 36" Lg, Flanged	EA	1,323.61	
5246	12" Dia x 48" Lg, Flanged	EA	1,786.10	
5247	12" Dia x 60" Lg, Flanged	EA	2,240.97	
5248	12" Dia x 72" Lg, Flanged	EA	2,695.84	

15635 5300 Flexible Hbse w/Connectors Braided Metal Hbse

Note: Type, Bronze, Flanged End Connection (Carbon Steel Ends)

5301	2" Dia x 12" Long, Flanged End	EA	52.74	
5302	2" Dia x 24" Long, Flanged End	EA	53.44	
5303	2" Dia x 36" Long, Flanged End	EA	71.74	
5304	2" Dia x 48" Long, Flanged End	EA	87.28	
5305	2" Dia x 60" Long, Flanged End	EA	102.83	
5306	3" Dia x 12" Long, Flanged End	EA	45.11	
5307	3" Dia x 24" Long, Flanged End	EA	61.54	
5308	3" Dia x 36" Long, Flanged End	EA	83.87	
5309	3" Dia x 48" Long, Flanged End	EA	101.31	
5311	3" Dia x 60" Long, Flanged End	EA	118.45	
5312	4" Dia x 12" Long, Flanged End	EA	56.00	
5313	4" Dia x 24" Long, Flanged End	EA	95.09	
5314	4" Dia x 36" Long, Flanged End	EA	121.25	
5315	4" Dia x 48" Long, Flanged End	EA	149.09	
5316	4" Dia x 60" Long, Flanged End	EA	170.37	
5317	6" Dia x 12" Long, Flanged End	EA	125.91	
5318	6" Dia x 24" Long, Flanged End	EA	181.99	
5319	6" Dia x 36" Long, Flanged End	EA	241.89	
5321	6" Dia x 48" Long, Flanged End	EA	297.97	
5322	6" Dia x 60" Long, Flanged End	EA	354.04	
5323	8" Dia x 18" Long, Flanged End	EA	231.25	
5324	8" Dia x 24" Long, Flanged End	EA	273.68	
5325	8" Dia x 36" Long, Flanged End	EA	362.59	
5326	8" Dia x 48" Long, Flanged End	EA	446.73	
5327	8" Dia x 60" Long, Flanged End	EA	530.83	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5328	10" Dia x 24" Long, Flanged End	EA	404.35	
5329	10" Dia x 36" Long, Flanged End	EA	510.04	
5331	10" Dia x 48" Long, Flanged End	EA	622.57	
5332	10" Dia x 60" Long, Flanged End	EA	728.74	
5333	10" Dia x 72" Long, Flanged End	EA	814.55	
5334	12" Dia x 24" Long, Flanged End	EA	559.88	
5335	12" Dia x 36" Long, Flanged End	EA	694.00	
5336	12" Dia x 48" Long, Flanged End	EA	835.74	
5337	12" Dia x 60" Long, Flanged End	EA	969.86	
5338	12" Dia x 72" Long, Flanged End	EA	1,103.98	
15635 6000 Molded rubber & connectors with helical wire reinforcement				
6020	Flexible hose, 150 PSI, 1.5"x12", molded rubber	EA	223.90	8.02
6030	Flexible hose, 150 PSI, 2"x12", molded rubber w/helical wire	EA	242.52	10.13
6040	Flexible hose, 150 PSI, 3"x12", molded rubber w/helical wire	EA	272.10	14.75
6050	Flexible hose, 150 PSI, 4"x12", molded rubber w/helical wire	EA	348.10	19.63
6060	Flexible hose, 150 PSI, 6"x18", molded rubber w/helical wire	EA	502.33	28.74
6070	Flexible hose, 150 PSI, 8"x24", molded rubber w/helical wire	EA	684.86	37.36
6080	Flexible hose, 150 PSI, 10"x24", molded rubber w/helical wire	EA	859.79	55.97
6090	Flexible hose, 150 PSI, 12"x24", molded rubber w/helical wire	EA	998.48	66.17
15635 7000 Molded teflon with stainless steel flanges				
7020	Flexible hose, 2.5" dia x 3-3/16", 150 PSI, molded teflon	EA	1,150.26	27.64
7030	Flexible hose, 3" dia x 3-5/8", 150 PSI, molded teflon w/sst flg	EA	1,341.39	33.18
7040	Flexible hose, 4" dia x 3-5/8", 150 PSI, molded teflon w/sst flg	EA	1,749.01	40.87
7050	Flexible hose, 6" dia x 4", 150 PSI, molded teflon w/sst flg	EA	2,425.07	46.20
7060	Flexible hose, 8" dia x 6", 150 PSI, molded teflon w/sst flg	EA	3,923.98	52.26
15636 0010 Float valves				
Note: Single Seated Balanced For Air Oil Or Water Includes Arm Ball And Bracket				
15636 0020 With ball and bracket				
0050	Float valve, w/ball&brkt, 1 seat, thd, brass, 1/2"	EA	57.74	2.38
0060	Float valve, w/ball&brkt, 1 seat, thd, brass, 3/4"	EA	68.56	2.76
0070	Float valve, w/ball&brkt, 1 seat, thd, brass, 1"	EA	90.54	2.91
0072	1-1/4"Brs Body Thrd Ends Flt Vlv Single Seated w/Arm Ball & Brkt	EA	170.80	3.88
0080	Float valve, w/ball&brkt, 1 seat, thd, brass, 1.5"	EA	141.96	3.25
0090	Float valve, w/ball&brkt, 1 seat, thd, brass, 2"	EA	160.06	3.52
0320	Float valve, 1" inlet, 1 seat, cnds rcvr, CI body, w/ball&brkt	EA	255.64	2.91
0370	Float valve, CI 3/4" flgd, 1 seat, cnds rcvr, ext float,	EA	220.23	4.84
15636 1000 Cast Iron Body Flanged				
1010	2-1/2" Body Flanged Float Valve Single Seated w/Arm Ball & Brkt	EA	2,448.43	45.15
1020	3" Body Flanged Float Valve Single Seated w/Arm Ball & Brkt	EA	2,955.63	51.27
15640 0010 Heating control valves				
15640 0050 Hbt water, nonelectric, thermostatic				
0100	Control valve, HW, 1/2" dia, radiator supply, nelec,	EA	42.75	1.78
0500	Control valve, HW, nelec, thermostatic, for low pressure steam add		7.54	
0120	Control valve, HW, 3/4" dia, radiator supply, nelec,	EA	45.94	2.19
0500	Control valve, HW, nelec, thermostatic, for low pressure steam add		7.70	
0140	Control valve, HW, 1" dia, radiator supply, nelec,	EA	54.06	1.89
0500	Control valve, HW, nelec, thermostatic, for low pressure steam add		9.54	
0160	Control valve, HW, 1.25" dia, radiator supply, nelec,	EA	73.68	1.85
0500	Control valve, HW, nelec, thermostatic, for low pressure steam add		13.38	
15640 1000 Hbt water, manual, radiator supply				
Note: Straight Through Valve With Spring-Loaded, Self- Adjusting, Teflon Packing And Attached Direct Acting Operator With Rolling Diaphragm				
1010	Control valve, HW, angle union, manual, radiator supply, 1/2"	EA	35.54	6.05
1090	Control valve, HW, angle union, manual, for low pressure steam add		5.73	
1020	Control valve, HW, angle union, manual, radiator supply, 3/4"	EA	43.95	6.70
1090	Control valve, HW, angle union, manual, for low pressure steam add		7.21	
1030	Control valve, HW, angle union, manual, radiator supply, 1" pipe	EA	53.05	7.71
1090	Control valve, HW, angle union, manual, for low pressure steam add		9.28	
15660 0010 Pressure regulator				
15660 0800 Process steam iron body				
0920	Pressure rgltr, 1/4", wet/super htd, monel trim thd, IB, prcs	EA	174.91	3.86
0940	Pressure rgltr, 1/2", wet/super htd, monel trim thd, IB, prcs	EA	228.94	3.90
0950	Pressure rgltr, 3/4", wet/super htd, monel trim thd, IB, prcs	EA	248.11	3.74
0960	Pressure rgltr, 1", wet/super htd, monel trim thd, IB, prcs	EA	313.53	3.67

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0970	1-1/4"Thrd St Press Regul&Red,IB Sgl Seat,Sprg Load Dir Act Diap	EA	400.60	6.65
0980	Pressure rgltr, 1.5", wet/super htd, monel trim thd, IB, prcs	EA	416.89	3.10
0990	Pressure rgltr, 2", wet/super htd, monel trim thd, IB, prcs	EA	560.81	3.44
0992	2-1/2" Flg St Press Regul&Red,IB Sgl Seat,Sprg Load Dir Act Diap	EA	1,544.86	17.53
0994	3" Flg St Press Regul&Reducer,IB Sgl Seat,Sprg Load Dir Act Diap	EA	1,918.96	19.88
1010	Pressure rgltr, 4", wet/super htd, monel trim flgd, IB, prcs	EA	2,334.58	15.61
1020	Pressure rgltr, 6", wet/super htd, monel trim flgd, IB, prcs	EA	4,608.35	17.88
15660 1400 Steam Pressure Regulating And Reduced, Externally Piloted, Cast Iron Body				
1401	1/2" THRD STM Press Reg & Red, Ext Piloted	EA	878.09	
1402	3/4" THRD STM Press Reg & Red, Ext Piloted	EA	878.09	
1403	1" THRD STM Press Reg & Red, Ext Piloted	EA	982.45	
1404	1 1/4" THRD STM Press Reg & Red, Ext Piloted	EA	1,098.52	
1405	1 1/2" THRD STM Press Reg & Red, Ext Piloted	EA	1,251.62	
1406	2" THRD STM Press Reg & Red, Ext, Piloted	EA	1,534.37	
1407	2 1/2" FLG STM Press Reg & Red, Ext Piloted	EA	1,945.21	
1408	3" FLG STM Press Reg & Red, Ext Piloted	EA	2,208.43	
1409	4" FLG STM Press Reg & Red, Ext Piloted	EA	3,110.19	
15663 0010 Pressure & temperature safety plug				
1150	Pressure/temp relief plug, 7.5" insert, 304 sst, 3/4"OD	EA	51.00	
15672 0010 Steam trap				
15672 0030 Cast iron body, threaded				
15672 0040 Inverted bucket				
0050	Steam trap, CI body, threaded, inverted bucket, 1/2" pipe	EA	128.73	8.24
0070	Steam trap, CI body, threaded, inverted bucket, 3/4" pipe	EA	207.46	14.15
0100	Steam trap, CI body, threaded, inverted bucket, 1" pipe	EA	306.87	12.22
0110	1-1/4" Inverted Bucket-Steam Trap Cast Iron (250 PSI)	EA	477.06	14.83
0130	Steam trap, CI body, threaded, inverted bucket, 1.5" pipe	EA	501.13	11.65
0140	Steam trap, CI body, threaded, inverted bucket, 2" pipe	EA	736.83	24.77
15672 1000 Float & thermostatic				
1010	Steam trap, CI body, 3/4" pipe, thd, 15 PSI, float &	EA	119.63	11.08
1020	Steam trap, CI body, 1" pipe, thd, 15 PSI, float &	EA	173.12	8.81
1030	1-1/4" Float&Tstat Stm Trap,15PSI	EA	162.34	15.13
1040	Steam trap, CI body, 1.5" pipe, thd, 15 PSI, float &	EA	304.08	24.02
1060	Steam trap, CI body, 2" pipe, thd, 15 PSI, float &	EA	543.79	31.85
15672 1290 Brass body, threaded				
15672 1300 Thermostatic				
1310	Steam trap, brs body, 25psi, 1/2" pipe, thd, angle union,	EA	51.66	7.49
1320	Steam trap, brs body, 25psi, 3/4" pipe, thd, angle union,	EA	77.95	8.78
1330	1" Thermostat Steam Trap, 25 PSI	EA	110.05	17.68
15672 1400 Thermodynamic Steam Traps				
1410	3/8"		159.59	
1420	1/2"		215.30	
1430	3/4"		259.31	
15680 0010 Venturi flow measuring device - Steel				
0220	Venturi flow, measuring device, steel, butt weld, 3" dia	EA	383.49	15.08
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		222.91	
0240	Venturi flow, measuring device, steel, butt weld, 4" dia	EA	478.30	18.34
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		277.35	
0260	Venturi flow, measuring device, steel, butt weld, 5" dia	EA	879.67	34.66
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		430.37	
0280	Venturi flow, measuring device, steel, butt weld, 6" dia	EA	995.64	34.74
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		485.55	
0300	Venturi flow, measuring device, steel, butt weld, 8" dia	EA	1,473.95	47.07
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		769.52	
0320	Venturi flow, measuring device, steel, butt weld, 10" dia	EA	2,601.41	63.93
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		1,408.09	
0330	Venturi flow, measuring device, steel, butt weld, 12" dia	EA	3,878.90	83.76
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		2,207.03	
0340	Venturi flow, measuring device, steel, butt weld, 14" dia	EA	5,071.15	85.43
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		2,942.71	
0350	Venturi flow, measuring device, steel, butt weld, 16" dia	EA	6,280.66	81.73
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		3,678.39	
15680 0409 Venturi flow measuring device - Brass				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0410	Venturi flow, measuring device, brass threaded, 3/4" dia	EA	784.76	5.30
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		500.26	
0420	Venturi flow, measuring device, brass threaded, 1" dia	EA	785.55	5.56
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		500.26	
0430	Venturi flow, measuring device, brass threaded, 1.25" dia	EA	789.80	6.81
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		500.26	
0440	Venturi flow, measuring device, brass threaded, 1.5" dia	EA	906.08	7.49
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		573.83	
0450	Venturi flow, measuring device, brass threaded, 2" dia	EA	1,249.87	8.85
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		794.53	
0460	Venturi flow, measuring device, brass threaded, 2.5" dia	EA	1,371.02	10.64
0510	<i>Venturi flow, meas device, weld/threaded, for flanged ends, add</i>		868.10	
0500	Venturi flow, measuring device, for meter, add	EA	1,319.69	
15690 0010	Water level controls			
9410	Water level controls, 1/2" pipe, water gauges, compl, brz, HP,	EA	147.18	
15696	Strainers			
15696 1000	Basket Strainers- Bronze, Screwed Ends			
1001	1" Basket Strainer Bronze Screwed Ends	EA	233.48	
1002	1 1/2" Basket Strainer Bronze Screwed Ends	EA	358.53	
1003	2" Basket Strainer Bronze Screwed Ends	EA	633.02	
1004	2 1/2" Basket Strainer Bronze Screwed Ends	EA	881.05	
1005	3" Basket strainer Bronze Screwed Ends	EA	1,054.36	
15696 2000	Basket Strainers- Flared Ends			
2001	3" Basket Strainer Bronze Flanged Ends	EA	1,381.76	
2002	4" Basket Strainer Bronze Flanged Ends	EA	2,455.42	
2003	6" Basket Strainer Bronze Flanged Ends	EA	4,197.24	
2004	8" Basket Strainer Bronze Flanged Ends	EA	4,865.41	
15697 0010	Strainers, basket type, stainless steel basket			
15697 0010	Perforated stainless steel basket			
15697 2300	Screwed			
2320	Strainers, bskt type, 3/8" pipe, perf sst, simplex, brz, screwed	EA	157.14	
2380	Strainers, bskt type, 1" pipe size, perf sst, simplex, brz,	EA	216.02	
2420	Strainers, bskt type, 1.5" pipe, perf sst, simplex, brz, screwed	EA	321.31	
2440	Strainers, bskt type, 2" pipe size, perf sst, simplex, brz,	EA	484.91	
2460	Strainers, bskt type, 2.5" pipe, perf sst, simplex, brz, screwed	EA	684.85	
2480	Strainers, bskt type, 3" pipe size, perf sst, simplex, brz,	EA	975.49	
15697 2599	Flanged			
2600	Strainers, bskt type, 2" pipe size, perf sst, simplex, brz,	EA	738.23	
2640	Strainers, bskt type, 3" pipe size, perf sst, simplex, brz,	EA	1,374.59	
2660	Strainers, bskt type, 4" pipe size, perf sst, simplex, brz,	EA	2,240.98	
2700	Strainers, bskt type, 6" pipe size, perf sst, simplex, brz,	EA	4,341.12	
2710	Strainers, bskt type, 8" pipe size, perf sst, simplex, brz,	EA	7,925.58	
15698 0010	Strainers, Y type, bronze body			
Note: (68kg) Rating With Screwed Cap (4 In (10cm) Size Has Bolted Cap)				
15698 0049	Screwed			
0050	Strainers, Y type, 1/4" pipe size, bronze body, screwed, 150	EA	29.59	2.99
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		2.55	
0060	1/2" Strainer (Bronze Body) Y Type, 150#(68kg) Screwed	EA	29.79	2.93
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		2.64	
0070	3/4" Strainer (Bronze Body) Y Type, 150#(68kg) Screwed	EA	36.82	3.61
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		3.07	
0140	Strainers, Y type, 1" pipe size, bronze body, screwed, 150 lb	EA	45.64	3.52
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		4.18	
0150	1-1/4" Strainer (Bronze Body) Y Type, 150#(68kg) Screwed	EA	59.44	5.28
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		5.32	
0160	Strainers, Y type, 1.5" pipe size, bronze body, screwed, 150	EA	81.71	4.92
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		9.02	
0180	Strainers, Y type, 2" pipe size, bronze body, screwed, 150 lb	EA	103.23	4.95
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		11.99	
0181	3" Strainer (Bronze Body) Y Type, 150#(68kg) Screwed	EA	386.62	9.96
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		50.86	
0182	2-1/2" Strainer (Bronze Body) Y Type, 150#(68kg) Screwed	EA	281.69	7.98
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		36.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0184	Strainers, Y type, 4" pipe size, bronze body, screwed, 150 lb	EA	283.39	8.73
0500	<i>Strainer, Y type, bronze, 150lb screwed, for 300lb 1/4" thru 2", add</i>		35.96	
15698 0999 Flanged				
1000	Strainers, Y type, 1.5" pipe size, bronze body, flanged, 150	EA	403.05	16.57
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		150.22	
1020	Strainers, Y type, 2" pipe size, bronze body, flanged, 150 lb	EA	524.73	23.45
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		194.76	
1030	3" Strainer (Bronze Body) Y Type, 150#(68kg) Flanged	EA	474.54	47.14
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		159.40	
1060	Strainers, Y type, 4" pipe size, bronze body, flanged, 150 lb	EA	1,593.58	113.47
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		561.74	
1100	Strainers, Y type, 6" pipe size, bronze body, flanged, 150 lb	EA	2,970.44	159.73
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		1,072.14	
1102	8" Strainer (Bronze Body) Y Type, 150#(68kg) Flanged	EA	2,694.59	120.69
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		1,001.94	
1110	Strainers, Y type, 10" pipe size, bronze body, flanged, 150	EA	9,715.97	121.83
1500	<i>Strainer, Y type, bronze, 150 lb flanged, for 300 lb, add</i>		3,712.34	
15699 0010 Strainers, Y type, iron body				
15699 0049 Screwed				
0050	Strainers, Y type, 1/4" pipe size, iron body, screwed, 250 lb	EA	25.04	4.54
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		4.96	
0070	Strainers, Y type, 3/8" pipe size, iron body, screwed, 250 lb	EA	25.04	4.54
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		4.96	
0100	Strainers, Y type, 1/2" pipe size, iron body, screwed, 250 lb	EA	25.04	3.67
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		4.96	
0120	Strainers, Y type, 3/4" pipe size, iron body, screwed, 250 lb	EA	28.69	4.16
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		5.94	
0140	Strainers, Y type, iron body, screwed, 250 lb, 1" pipe size	EA	34.87	3.86
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		7.98	
0150	Strainers, Y type, 1.25" pipe size, iron body, screwed, 250 lb	EA	42.07	2.99
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		10.95	
0160	Strainers, Y type, 1.5" pipe size, iron body, screwed, 250 lb	EA	51.69	3.86
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		13.24	
0180	Strainers, Y type, iron body, screwed, 250 lb, 2" pipe size	EA	78.57	4.80
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		20.38	
0190	2-1/2" Strainer (Iron Body) Y-Type, 250#(113kg) Screwed Ends	EA	81.32	6.73
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		18.30	
0200	3" Strainer (Iron Body) Y-Type, 250#(113kg) Screwed Ends	EA	100.71	8.14
0500	<i>Strainer, Y type, iron body, 250 lb screwed, for galvanized body, add</i>		23.20	
15699 0999 Flanged				
1000	Strainers, Y type, 1.5" pipe size, iron body, flanged, 125 lb	EA	83.87	4.12
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		11.27	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		28.18	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		22.54	
1020	Strainers, Y type, iron body, flanged, 125 lb, 2" pipe size	EA	133.57	5.67
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		19.15	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		47.88	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		38.30	
1040	Strainers, Y type, iron body, flanged, 125 lb, 3" pipe size	EA	252.46	17.67
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		25.26	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		63.16	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		50.52	
1060	Strainers, Y type, iron body, flanged, 125 lb, 4" pipe size	EA	405.18	19.27
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		43.19	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		107.98	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		86.38	
1070	5" Strainer-Iron Body Y-Type, 125#(58kg) Flanged Ends	EA	220.26	8.10
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		16.95	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		42.37	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		33.89	
1100	Strainers, Y type, iron body, flanged, 125 lb, 6" pipe size	EA	729.45	26.61
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		87.87	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		219.69	
2500	<i>Strainer, Y type, iron body, flanged, for steel body, add</i>		175.75	
1110	8" Strainer-Iron Body Y-Type, 125#(58kg) Flanged Ends	EA	397.00	16.43
1500	<i>Strainer, Y type, add, iron body, flanged, for 250 lb rating</i>		41.45	
2000	<i>Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add</i>		103.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2500	Strainer, Y type, iron body, flanged, for steel body, add		82.90	
1140	Strainers, Y type, 10" pipe size, iron body, flanged, 125 lb	EA	1,848.30	65.27
1500	Strainer, Y type, add, iron body, flanged, for 250 lb rating		282.64	
2000	Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add		706.59	
2500	Strainer, Y type, iron body, flanged, for steel body, add		565.27	
1150	12" Strainer-Iron Body Y-Type, 125#(58kg) Flanged Ends	EA	819.14	34.63
1500	Strainer, Y type, add, iron body, flanged, for 250 lb rating		96.06	
2000	Strainer, Y type, iron body, 125 lb flanged, for galvanized body, add		240.16	
2500	Strainer, Y type, iron body, flanged, for steel body, add		192.12	

15700 Air Conditioning & Ventilation

15701 Air Conditioning & Ventilation Units

15708 0010 Air handling unit, built up Mtor And Cabinet.

Note: Sized by Cfm Includes Mtor Drive Vibration Isolators. See Modifiers For Filters And Heating And Cooling Coils. For Preheat Coils See CSI 15723. Includes Insulated Casing, Fan Section, Fan Mtor, Starter, Vibration Isolators. Variable Speed Drives are Included On Units With 10 HP And Larger Fans. Modifiers Include Cooling Coil Sections With 6 Row Aluminum Fin Coil And Drain Pan, Heating Coil Section With 1 Row Aluminum Fin Coil And Filter Section With Replaceable Filters.

15708 0880 Single zone, horizontal or vertical

0900	Air handling unit, 1600 CFM built-up, single zone,	EA	1,197.43	143.98
2201	For Flat Filter Box And Throw away filters, Add		96.09	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		14.49	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		315.32	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		36.22	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		50.71	
2212	For Hot Water Heating Coil Add		264.62	
2216	AHU, built-up, sgl zone, for electric heating coil, add		57.95	
2218	For Chilled Water Cooling Coil Add		481.92	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		50.71	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		14.49	
0906	Air handling unit, 2000 CFM built-up, single zone,	EA	1,421.52	165.19
2201	For Flat Filter Box And Throw away filters, Add		116.35	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		18.11	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		386.62	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		45.27	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		63.38	
2212	For Hot Water Heating Coil Add		323.24	
2216	AHU, built-up, sgl zone, for electric heating coil, add		72.44	
2218	For Chilled Water Cooling Coil Add		594.88	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		63.38	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		18.11	
0910	Air handling unit, 3000 CFM built-up, single zone,	EA	1,925.85	211.00
2201	For Flat Filter Box And Throw away filters, Add		164.20	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		27.16	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		559.29	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		67.91	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		95.07	
2212	For Hot Water Heating Coil Add		464.22	
2216	AHU, built-up, sgl zone, for electric heating coil, add		108.65	
2218	For Chilled Water Cooling Coil Add		871.67	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		95.07	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		27.16	
0916	Air handling unit, 4000 CFM built-up, single zone,	EA	2,408.71	249.74
2201	For Flat Filter Box And Throw away filters, Add		210.98	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		36.22	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		729.81	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		90.55	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		126.76	
2212	For Hot Water Heating Coil Add		603.05	
2216	AHU, built-up, sgl zone, for electric heating coil, add		144.87	
2218	For Chilled Water Cooling Coil Add		1,146.32	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		126.76	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		36.22	
0920	Air handling unit, 5000 CFM built-up, single zone,	EA	2,885.22	250.85
2201	For Flat Filter Box And Throw away filters, Add		257.44	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		45.27	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		899.70	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		113.18	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		158.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2212	For Hot Water Heating Coil Add		741.25	
2216	AHU, built-up, sgl zone, for electric heating coil, add		181.09	
2218	For Chilled Water Cooling Coil Add		1,420.33	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		158.45	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		45.27	
0926	Air handling unit, 6500 CFM built-up, single zone,	EA	3,612.13	288.70
2201	For Flat Filter Box And Throw away filters, Add		327.74	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		58.85	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,155.74	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		147.14	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		205.99	
2212	For Hot Water Heating Coil Add		949.76	
2216	AHU, built-up, sgl zone, for electric heating coil, add		235.42	
2218	For Chilled Water Cooling Coil Add		1,832.57	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		205.99	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		58.85	
0930	Air handling unit, 7500 CFM built-up, single zone,	EA	4,120.63	315.03
2201	For Flat Filter Box And Throw away filters, Add		375.80	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		67.91	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,328.83	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		169.77	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		237.68	
2212	For Hot Water Heating Coil Add		1,091.15	
2216	AHU, built-up, sgl zone, for electric heating coil, add		271.63	
2218	For Chilled Water Cooling Coil Add		2,109.78	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		237.68	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		67.91	
0936	Air handling unit, 9200 CFM built-up, single zone,	EA	4,956.20	286.38
2201	For Flat Filter Box And Throw away filters, Add		456.06	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		83.30	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,620.19	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		208.25	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		291.55	
2212	For Hot Water Heating Coil Add		1,328.63	
2216	AHU, built-up, sgl zone, for electric heating coil, add		333.21	
2218	For Chilled Water Cooling Coil Add		2,578.16	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		291.55	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		83.30	
0940	Air handling unit, 11500 CFM built-up, single zone,	EA	6,076.57	339.39
2201	For Flat Filter Box And Throw away filters, Add		564.15	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		104.13	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,013.37	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		260.32	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		364.44	
2212	For Hot Water Heating Coil Add		1,648.92	
2216	AHU, built-up, sgl zone, for electric heating coil, add		416.51	
2218	For Chilled Water Cooling Coil Add		3,210.82	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		364.44	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		104.13	
0946	Air handling unit, 13200 CFM built-up, single zone,	EA	6,942.89	375.98
2201	For Flat Filter Box And Throw away filters, Add		645.94	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		119.52	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,307.80	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		298.80	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		418.32	
2212	For Hot Water Heating Coil Add		1,889.48	
2216	AHU, built-up, sgl zone, for electric heating coil, add		478.08	
2218	For Chilled Water Cooling Coil Add		3,682.27	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		418.32	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		119.52	
0950	Air handling unit, 16500 CFM built-up, single zone,	EA	8,557.76	572.80
2201	For Flat Filter Box And Throw away filters, Add		801.39	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		149.40	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,872.67	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		373.50	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		522.90	
2212	For Hot Water Heating Coil Add		2,349.77	
2216	AHU, built-up, sgl zone, for electric heating coil, add		597.60	
2218	For Chilled Water Cooling Coil Add		4,590.76	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		522.90	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		149.40	
0960	Air handling unit, 19500 CFM built-up, single zone,	EA	10,071.33	705.15
2201	For Flat Filter Box And Throw away filters, Add		944.97	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		176.56	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		3,390.73	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		441.41	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		617.97	
2212	For Hot Water Heating Coil Add		2,772.76	
2216	AHU, built-up, sgl zone, for electric heating coil, add		706.25	
2218	For Chilled Water Cooling Coil Add		5,421.20	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		617.97	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		176.56	
0970	Air handling unit, 22000 CFM built-up, single zone,	EA	11,410.34	1,016.84
2201	For Flat Filter Box And Throw away filters, Add		1,068.51	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		199.20	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		3,830.22	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		498.00	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		697.20	
2212	For Hot Water Heating Coil Add		3,133.02	
2216	AHU, built-up, sgl zone, for electric heating coil, add		796.80	
2218	For Chilled Water Cooling Coil Add		6,121.00	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		697.20	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		199.20	
0980	Air handling unit, 27000 CFM built-up, single zone,	EA	13,964.04	1,057.12
2201	For Flat Filter Box And Throw away filters, Add		1,309.38	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		244.47	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		4,696.77	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		611.18	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		855.65	
2212	For Hot Water Heating Coil Add		3,841.12	
2216	AHU, built-up, sgl zone, for electric heating coil, add		977.88	
2218	For Chilled Water Cooling Coil Add		7,508.18	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		855.65	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		244.47	
0990	Air handling unit, 34000 CFM built-up, single zone,	EA	17,568.23	1,393.91
2201	For Flat Filter Box And Throw away filters, Add		1,648.04	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		307.85	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		5,912.83	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		769.63	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		1,077.48	
2212	For Hot Water Heating Coil Add		4,835.35	
2216	AHU, built-up, sgl zone, for electric heating coil, add		1,231.41	
2218	For Chilled Water Cooling Coil Add		9,453.14	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		1,077.48	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		307.85	
1000	Air handling unit, 40000 CFM built-up, single zone,	EA	22,413.35	1,061.00
2201	For Flat Filter Box And Throw away filters, Add		2,096.30	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		390.25	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		7,509.72	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		975.63	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		1,365.88	
2212	For Hot Water Heating Coil Add		6,143.85	
2216	AHU, built-up, sgl zone, for electric heating coil, add		1,561.00	
2218	For Chilled Water Cooling Coil Add		11,997.61	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		1,365.88	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		390.25	
1010	Air handling unit, 47000 CFM built-up, single zone,	EA	25,629.25	1,171.89
2201	For Flat Filter Box And Throw away filters, Add		2,345.37	
2202	AHU, built-up, sgl zone, for med cap box & throwaway fltr, add		425.56	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		8,308.00	
2206	AHU, built-up, factory assem sgl zone, for manual roll filter, add		1,063.90	
2210	AHU, built-up, factory assem sgl zone, for auto roll filter, add		1,489.46	
2212	For Hot Water Heating Coil Add		6,818.54	
2216	AHU, built-up, sgl zone, for electric heating coil, add		1,702.24	
2218	For Chilled Water Cooling Coil Add		13,201.95	
2220	AHU, built-up, sgl zone, for dir exp cooling coil, add		1,489.46	
2244	AHU, built-up, factory assem sgl zone, for steam heating coil, add		425.56	
15708 2300	Mlti zone, horizontal or vertical			
2310	Air handling unit, 3000 CFM built-up, multi-zone, horiz/vert	EA	1,925.85	62.76
2201	For Flat Filter Box And Throw away filters, Add		164.20	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		559.29	
2212	For Hot Water Heating Coil Add		464.22	
2218	For Chilled Water Cooling Coil Add		871.67	
2314	Air handling unit, 4000 CFM built-up, multi-zone, horiz/vert	EA	2,408.71	73.09
2201	For Flat Filter Box And Throw away filters, Add		210.98	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		729.81	
2212	For Hot Water Heating Coil Add		603.05	
2218	For Chilled Water Cooling Coil Add		1,146.32	
2318	Air handling unit, 5000 CFM built-up, multi-zone, horiz/vert	EA	2,885.22	79.16
2201	For Flat Filter Box And Throw away filters, Add		257.44	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		899.70	
2212	For Hot Water Heating Coil Add		741.25	
2218	For Chilled Water Cooling Coil Add		1,420.33	
2322	Air handling unit, 6500 CFM built-up, multi-zone, horiz/vert	EA	3,612.13	92.39
2201	For Flat Filter Box And Throw away filters, Add		327.74	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,155.74	
2212	For Hot Water Heating Coil Add		949.76	
2218	For Chilled Water Cooling Coil Add		1,832.57	
2326	Air handling unit, 7500 CFM built-up, multi-zone, horiz/vert	EA	4,120.63	91.30
2201	For Flat Filter Box And Throw away filters, Add		375.80	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,328.83	
2212	For Hot Water Heating Coil Add		1,091.15	
2218	For Chilled Water Cooling Coil Add		2,109.78	
2330	Air handling unit, 9200 CFM built-up, multi-zone, horiz/vert	EA	4,956.20	92.46
2201	For Flat Filter Box And Throw away filters, Add		456.06	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		1,620.19	
2212	For Hot Water Heating Coil Add		1,328.63	
2218	For Chilled Water Cooling Coil Add		2,578.16	
2334	Air handling unit, 11500 CFM built-up, multi-zone, horiz/vert	EA	6,076.57	279.46
2201	For Flat Filter Box And Throw away filters, Add		564.15	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,013.37	
2212	For Hot Water Heating Coil Add		1,648.92	
2218	For Chilled Water Cooling Coil Add		3,210.82	
2336	Air handling unit, 13200 CFM built-up, multi-zone, horiz/vert	EA	6,942.89	310.75
2201	For Flat Filter Box And Throw away filters, Add		645.94	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,307.80	
2212	For Hot Water Heating Coil Add		1,889.48	
2218	For Chilled Water Cooling Coil Add		3,682.27	
2340	Air handling unit, 16500 CFM built-up, multi-zone, horiz/vert	EA	8,557.76	297.69
2201	For Flat Filter Box And Throw away filters, Add		801.39	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		2,872.67	
2212	For Hot Water Heating Coil Add		2,349.77	
2218	For Chilled Water Cooling Coil Add		4,590.76	
2344	Air handling unit, 19500 CFM built-up, multi-zone, horiz/vert	EA	10,071.33	304.26
2201	For Flat Filter Box And Throw away filters, Add		944.97	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		3,390.73	
2212	For Hot Water Heating Coil Add		2,772.76	
2218	For Chilled Water Cooling Coil Add		5,421.20	
2348	Air handling unit, 22000 CFM built-up, multi-zone, horiz/vert	EA	11,410.34	345.63
2201	For Flat Filter Box And Throw away filters, Add		1,068.51	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		3,830.22	
2212	For Hot Water Heating Coil Add		3,133.02	
2218	For Chilled Water Cooling Coil Add		6,121.00	
2352	Air handling unit, 27000 CFM built-up, multi-zone, horiz/vert	EA	13,964.04	421.60
2201	For Flat Filter Box And Throw away filters, Add		1,309.38	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		4,696.77	
2212	For Hot Water Heating Coil Add		3,841.12	
2218	For Chilled Water Cooling Coil Add		7,508.18	
2356	Air handling unit, 34000 CFM built-up, multi-zone, horiz/vert	EA	17,568.23	485.05
2201	For Flat Filter Box And Throw away filters, Add		1,648.04	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		5,912.83	
2212	For Hot Water Heating Coil Add		4,835.35	
2218	For Chilled Water Cooling Coil Add		9,453.14	
2360	Air handling unit, 40000 CFM built-up, multi-zone, horiz/vert	EA	21,009.78	561.92
2201	For Flat Filter Box And Throw away filters, Add		1,955.94	
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		6,990.40	
2212	For Hot Water Heating Coil Add		5,722.77	
2218	For Chilled Water Cooling Coil Add		11,155.47	
2364	Air handling unit, 47000 CFM built-up, multi-zone, horiz/vert	EA	25,629.25	638.65
2201	For Flat Filter Box And Throw away filters, Add		2,345.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2203	For Combination Filter Mxing Box and Throwaway Filters, Add		8,308.00	
2212	For Hot Water Heating Coil Add		6,818.54	
2218	For Chilled Water Cooling Coil Add		13,201.95	
15708 2400	Removal & Reinstallation Of Air Handling Unit,			
	Note: With Filter And Coils. Includes Storage And Cleaning. Price Does Not Include New Ductwork.			
2402	Rem & Reinstall Air Handling Unit Up To 11500CFM	EA	869.92	
2404	Rem & Reinstall Air Handling Unit, 11501 To 16500CFM	EA	1,180.07	
2406	Rem & Reinstall Air Handling Unit, 16501 To 22000CFM	EA	1,670.99	
2408	Rem & Reinstall Air Handling Unit, Over 22000CFM	EA	3,048.82	
15709	Variable Speed Drives			
	Note: Used For Pumps And Air Handling Units. Price Includes Appropriate Nema Enclosure.			
15709 1000	Variable Speed Drives - 230 Volt 1 Or 3 Phase			
1001	1 Hp Vfd	EA	1,055.68	78.04
1002	2 Hp Vfd	EA	1,317.03	78.04
1003	3 Hp Vfd	EA	1,467.66	78.04
15709 2000	Variable Speed Drives - 460 Volt 3 Phase			
2001	5 Hp Vfd	EA	5,078.92	78.04
2002	7.5 Hp Vfd	EA	5,450.75	117.29
2003	10 Hp Vfd	EA	5,743.00	117.29
2004	15 Hp Vfd	EA	5,886.12	156.04
2005	20 Hp Vfd	EA	6,074.09	156.04
2006	25 Hp Vfd	EA	6,872.00	195.29
2007	30 Hp Vfd	EA	7,828.56	195.29
2008	40 Hp Vfd	EA	9,829.34	229.29
2009	50 Hp Vfd	EA	11,320.17	274.15
2011	60 Hp Vfd	EA	14,339.38	312.08
2012	75 Hp Vfd	EA	15,633.25	312.08
2013	100 Hp Vfd	EA	19,744.70	349.55
2014	125 Hp Vfd	EA	22,552.59	349.55
2015	150 Hp Vfd	EA	24,948.54	390.55
2016	200 Hp Vfd	EA	36,357.53	466.05
2017	250 Hp Vfd	EA	41,405.57	466.05
2018	300 Hp Vfd	EA	54,027.10	546.15
2019	350 Hp Vfd	EA	61,976.99	618.66
2021	400 Hp Vfd	EA	75,193.84	699.09
2022	500 Hp Vfd	EA	85,049.96	785.48
15710 A.C. & Vent Units				
15710 0010	Computer room units			
15710 1000	Air cooled			
1080	Computer room units, no tubing/rfgt,3 ton, w/remote	EA	8,363.11	153.20
1120	Computer room units, no tubing/rfgt,5 ton, w/remote	EA	10,961.80	230.23
1200	Computer room units, no tubing/rfgt,8 ton, w/remote	EA	22,273.39	353.10
1240	Computer room units, no tubing/rfgt,10 ton, w/remote	EA	23,250.87	390.49
1280	Computer room units, no tubing/rfgt,15 ton, w/remote	EA	26,012.25	460.46
1290	Computer room units, no tubing/rfgt,18 ton, w/remote	EA	29,534.44	489.16
1320	Computer room units, no tubing/rfgt,20 ton, w/remote	EA	30,975.07	547.92
1360	Computer room units, no tubing/rfgt,23 ton, w/remote	EA	32,485.30	528.34
15710 2200	Chilled water Cost Does Not Include Chilled Water Source			
2280	Computer room units, for conn to exst chill sys, 6 ton, chilled	EA	11,933.31	380.13
2300	Computer room units, for conn to exst chill sys, 8 ton, chilled	EA	12,793.02	439.46
2320	Computer room units, for conn to exst chill sys, 10 ton, chilled	EA	14,099.48	573.93
2330	Computer room units, for conn to exst chill sys, 12 ton, chilled	EA	14,577.27	607.77
2360	Computer room units, for conn to exst chill sys, 15 ton, chilled	EA	15,055.28	678.73
2400	Computer room units, for conn to exst chill sys, 20 ton, chilled	EA	15,456.43	856.17
2440	Computer room units, for conn to exst chill sys, 23 ton, chilled	EA	16,273.42	
2450	Computer Rm Air Condtr, 2 Ton Ch illed Water Type Excl H2O Src		7,233.41	
2460	Computer Rm Air Condtr, 3 Ton Ch illed Water Type Excl H2O Src		9,205.02	
15710 9000	Packaged computer room unit			
	Note: Cost Includes Compressor Sequence Switch, Mde Alert Mbnitor, Non-Locking Disconnect Switch, Firestat, Auto Flush On Humidifier, Two Liquitect Sensors, Floor Stand, Precharged Copper Pipe And Outdoor Air Cooled Condenser Complete With Fan Speed Control.			
9010	Packaged computer room unit, 600 CFM	EA	1,724.42	
9020	Packaged computer room unit, 800 CFM	EA	2,281.04	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9030	Packaged computer room unit, 1000 CFM	EA	2,905.58	
9040	Packaged computer room unit, 1350 CFM	EA	3,950.91	
9050	Packaged computer room unit, 1600 CFM	EA	4,913.84	
9060	Packaged computer room unit, 2000 CFM	EA	6,142.29	
15712 0010	Evaporative coolers			
Note: Including Steel Cabinet, Bonded Paint And Interior Coatings, Complete With Pump, Mtor, Float Valve And Pads And Receptacle For Pump And Mtor. Sidedraft Or Downdraft And Voltage As Specified By Delivery Order. One Speed Mtor Unless Otherwise Specified.				
15712 0100	Side discharge style			
0140	Evaporative cooler, 1/3 HP, 115 V, 1/4" st pr, 2740 CFM side	EA	511.65	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		19.44	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		38.88	
0200	Evaporative cooler, 3/4 HP, 230 V, 1/4" st pr, 4215 CFM side	EA	678.67	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		25.30	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		50.60	
0220	Evaporative cooler, 1 HP, 115/230 V, 1/4" st pr, 5255 CFM side	EA	1,036.80	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		42.63	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		85.26	
0240	Evaporative cooler, 1 HP, 230/460 V, 1/4" st pr, 6090 CFM side	EA	1,381.12	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		59.19	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		118.37	
0260	Evaporative cooler, 2 HP, 230/460 V, 1/4" st pr, 8300 CFM side	EA	1,411.17	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		59.93	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		119.86	
0300	Evaporative cooler, 2 HP, 230/460 V, 1/4" st pr, 9725 CFM side	EA	1,965.23	
0400	Evaporative cooler, side disch, 1/4" st pr, for two-speed motor, add		82.91	
0500	Evaporative cooler, side disch, 1/4" st pr, down disch style, add		165.82	
1012	10500 CFM Evaporatiave Cooler	EA	11,078.81	
0600	For 2 Speed Mtor Add		1,273.06	
0700	For Second Stage Unit w/ Therstat Pkg Add		2,652.20	
1013	11500 CFM Evaporatiave Cooler	EA	12,141.39	
0600	For 2 Speed Mtor Add		1,394.30	
0700	For Second Stage Unit w/ Therstat Pkg Add		2,904.79	
1014	12500 CFM Evaporatiave Cooler	EA	13,217.03	
0600	For 2 Speed Mtor Add		1,515.54	
0700	For Second Stage Unit w/ Therstat Pkg Add		3,157.38	
1015	14000 CFM Evaporatiave Cooler	EA	14,816.51	
0600	For 2 Speed Mtor Add		1,697.41	
0700	For Second Stage Unit w/ Therstat Pkg Add		3,536.27	
1016	15000 CFM Evaporatiave Cooler	EA	15,826.87	
0600	For 2 Speed Mtor Add		1,818.65	
0700	For Second Stage Unit w/ Therstat Pkg Add		3,788.86	
1017	16000 CFM Evaporatiave Cooler	EA	16,837.23	
0600	For 2 Speed Mtor Add		1,939.90	
0700	For Second Stage Unit w/ Therstat Pkg Add		4,041.45	
1018	17000 CFM Evaporatiave Cooler	EA	17,847.60	
0600	For 2 Speed Mtor Add		2,061.14	
0700	For Second Stage Unit w/ Therstat Pkg Add		4,294.04	
1019	18000 CFM Evaporatiave Cooler	EA	18,857.96	
0600	For 2 Speed Mtor Add		2,182.38	
0700	For Second Stage Unit w/ Therstat Pkg Add		4,546.63	
1021	19000 CFM Evaporatiave Cooler	EA	19,868.32	
0600	For 2 Speed Mtor Add		2,303.63	
0700	For Second Stage Unit w/ Therstat Pkg Add		4,799.22	
1022	20000 CFM Evaporatiave Cooler	EA	20,878.68	
0600	For 2 Speed Mtor Add		2,424.87	
0700	For Second Stage Unit w/ Therstat Pkg Add		5,051.81	
1023	21000 CFM Evaporatiave Cooler	EA	21,889.05	
0600	For 2 Speed Mtor Add		2,546.11	
0700	For Second Stage Unit w/ Therstat Pkg Add		5,304.41	
1024	24000 CFM Evaporatiave Cooler	EA	25,921.31	
0600	For 2 Speed Mtor Add		2,909.85	
0700	For Second Stage Unit w/ Therstat Pkg Add		6,062.18	
1025	29500 CFM Evaporatiave Cooler	EA	31,764.03	
0600	For 2 Speed Mtor Add		3,576.68	
0700	For Second Stage Unit w/ Therstat Pkg Add		7,451.43	
1026	35500 CFM Evaporatiave Cooler	EA	37,415.09	
0600	For 2 Speed Mtor Add		4,243.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0700	For Second Stage Unit w/ Therstat Pkg Add		8,840.67	
1027	40000 CFM Evaporatiave Cooler	EA	42,560.63	
0600	For 2 Speed Mtor Add		4,849.74	
0700	For Second Stage Unit w/ Therstat Pkg Add		10,103.63	
15713 0010 Fan coil air conditioning				
Note: Cabinet, Chilled Water Coil, 3 Way Valve For Chilled Water Coil And Baked Enamel Finish. Includes Seperate External Drain Pan.				
15713 0270 Vertical unit with hot water heating				
0274	Fan coil AC, hsg, vert w/hot wtr 1/2 T cool, filter, cntrl, chil	EA	1,172.52	62.41
0276	Fan coil AC, hsg, vert w/hot wtr 3/4 T cool, filter, cntrl, chil	EA	1,250.10	69.40
0278	Fan coil AC, hsg, vert w/hot wtr 1 T cool, filter, cntrl, chill	EA	1,347.10	68.05
0280	Fan coil AC, hsg, vert w/hot wtr 1.5 T cool, filter, cntrl, chil	EA	1,485.27	75.18
0282	Fan coil AC, hsg, vert w/hot wtr 2 T cool, filter, cntrl, chill	EA	1,844.69	88.06
0284	Fan coil AC, hsg, vert w/hot wtr 2.5 T cool, filter, cntrl, chil	EA	2,396.64	99.98
0286	Fan coil AC, hsg, vert w/hot wtr 3 T cool, filter, cntrl, chill	EA	2,641.62	101.69
15713 0300 Console, 2 pipe with electric heat				
0310	Fan coil AC, console, .5 T cool, 2 pipe, elec ht, filter, chill	EA	982.97	56.06
0315	Fan coil AC,console, .75 T cool, 2 pipe, elec ht, filter, chill	EA	1,079.70	63.37
0320	Fan coil AC, console, 1 T cool, 2 pipe, elec ht, filter, chill	EA	1,174.02	73.90
0330	Fan coil AC,console, 1.5 T cool, 2 pipe, elec ht, filter, chill	EA	1,430.82	79.51
0340	Fan coil AC, console, 2 T cool, 2 pipe, elec ht, filter, chill	EA	1,881.31	91.68
0345	Fan coil AC,console, 2.5 T cool, 2 pipe, elec ht, filter, chill	EA	2,667.36	91.68
0350	Fan coil AC, console, 3 T cool, 2 pipe, elec ht, filter, chill	EA	3,497.63	103.60
0360	Fan coil AC, console, 4 T cool, 2 pipe, elec ht, filter, chill	EA	3,638.54	103.60
15713 3300 Chilled water, horizontal unit				
Note: With Cabinet Chilled Water Coil, 3-Way Valve For Chilled Water Coil And Baked Enamel Finish				
15713 3300 Hbt water heating				
3310	Fan coil AC, hsg, horiz w/hot wtr 1/2 ton, filter, cntrl,	EA	1,307.17	61.45
3320	Fan coil AC, hsg, horiz w/hot wtr 3/4 ton, filter, cntrl,	EA	1,407.63	71.39
3330	Fan coil AC, hsg, horiz w/hot wtr 1 ton, filter, cntrl, chill	EA	1,592.06	81.93
3340	Fan coil AC, hsg, horiz w/hot wtr 1.5 ton, filter, cntrl,	EA	1,891.39	88.56
3350	Fan coil AC, hsg, horiz w/hot wtr 2 ton, filter, cntrl, chill	EA	2,423.90	94.09
3360	Fan coil AC, hsg, horiz w/hot wtr 2.5 ton, filter, cntrl,	EA	2,602.79	104.24
3370	Fan coil AC, hsg, horiz w/hot wtr 3 ton, filter, cntrl, chill	EA	2,622.44	88.84
15713 4099 Electric heat				
4100	Fan coil AC, horiz hsg, 1/2 ton cool, elec heat, filters, chill	EA	1,138.82	42.58
4105	Fan coil AC, horiz hsg, 3/4 ton cool, elec heat, filters, chill	EA	1,264.41	47.90
4110	Fan coil AC, horiz hsg, 1 ton cool, elec heat, filters, chill	EA	1,393.36	52.58
4120	Fan coil AC, horiz hsg, 1.5 ton cool, elec heat, filters, chill	EA	1,546.27	57.79
4130	Fan coil AC, horiz hsg, 2 ton cool, elec heat, filters, chill	EA	1,926.38	59.50
4135	Fan coil AC, horiz hsg, 2.5 ton cool, elec heat, filters, chill	EA	2,629.19	63.80
4140	Fan coil AC, horiz hsg, 3 ton cool, elec heat, filters, chill	EA	3,411.04	72.38
15713 5000 Removal & Reinstallation Of Fan Coil Units				
Note: Includes Storage And Cleaning. Price Does Not Include Supports.				
5001	Remove & Reinstall Fan Coil Unit Horizontal Or Vertical	EA	161.65	
15714 0010 Heat pumps				
15714 1000 Air to air roof top units				
Note: Including Throwaway Filters, Manual Outside Air Damper, Roof Curbs And Electric Heat Approximately One-Half Cooling Capacity. Units Are Shiiped Fully Factory Assembled In One Piece, Prewired, Prepiped, Charged With Refrigerant, And Include Start-Up. Installation Is Based On Unit being Placed On Roof By Crane.				
15714 1000 Split system				
1020	Heat pumps, air/air,8.5 MBH ht @ 0 degF,excl curbs,2 ton clg,	EA	2,702.33	55.03
1040	Heat pumps, air/air,13 MBH ht @ 0 degF,excl curbs,3 ton clg,	EA	3,581.41	84.34
1054	Heat pumps, air/air,24 MBH ht @ 0 degF,excl curbs,4 ton clg,	EA	4,840.77	117.72
1060	Heat pumps, air/air,27 MBH ht @ 0 degF,excl curbs,5 ton clg,	EA	5,685.67	135.60
1080	Heat pumps, air/air,33 MBH ht @ 0 degF,excl curbs,7.5ton clg,	EA	8,894.76	409.62
15714 1500 Single package 230/208V				
Note: Through The Wall Units Are Wired For 230/208 V, 1 Phase, 60 HZ. With Electronic Controls, Thermostat, Cord And Nema Plug. Units Are Shipped Fully Factory Assembled In One Piece, Prewired, Prepiped And Charged With Refrigerant, Complete With Push Button Controls All Mounted In A Steel Cabinet, Wall Sleeve And Outdoor Grille.				
1516	Single Package Heat Pump, 1 Ton	EA	1,917.76	28.50
0100	For Low Ambient Protection, 0 Deg F., Add		195.40	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1518	Single Package Heat Pump, 1-1/2 Ton <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	2,458.86 244.10	28.50
1520	Heat pumps, air/air, 6.5 MBH ht @ 0 deg F, sgl pkg, 2 ton <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	3,066.67 336.55	75.71
1522	Single Package Heat Pump, 2-1/2 Ton <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	3,058.22 300.77	31.92
1560	Heat pumps, air/air, 10 MBH ht @ 0 deg F, sgl pkg, 3 ton cooling <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	3,698.94 408.60	89.87
1562	Single Package Heat Pump, 4 Ton Air to Air Type w/Electric Heat <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	3,977.73 382.04	28.57
1620	Heat pumps, air/air, 27 MBH ht @ 0 deg F, sgl pkg, 5 ton cooling <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	5,542.22 638.62	157.28
1640	Heat pumps, air/air, 35 MBH ht @ 0 deg F, sgl pkg, 7.5 ton <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	10,191.98 1,144.35	255.46
1652	Heat pumps, air/air, 50 MBH ht @ 0 deg F, sgl pkg, 12 ton coolin <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	16,317.40 1,855.34	410.97
1655	Single Package Heat Pump, 12.5Ton Air To Air Type w/Electric Heat <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	11,883.64 1,130.33	60.80
1657	Single Package Heat Pump, 15 Ton Air To Air Type w/Electric Heat <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	13,350.14 1,262.31	57.00
1658	Single Package Heat Pump, 20 Ton Air To Air Type w/Electric Heat <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	21,495.64 1,995.41	57.00
1660	Single Package Heat Pump, 25 Ton Air To Air Type w/Electric Heat <i>0100 For Low Ambient Protection, 0 Deg F., Add</i>	EA	25,617.44 2,366.37	57.00
15714 2100 Outdoor Section Packaged Unit				
2102	Split Heat Pump, 2-1/2 Tn Outdoor Packaged Unit, Air Cooled	EA	2,203.27	
2104	Split Heat Pump, 3-1/2 Tn Outdoor Packaged Unit, Air Cooled	EA	2,868.69	
2106	Split Heat Pump, 10Ton Outdr Sect Packaged Unit, Air Cooled	EA	6,142.68	
2108	Split Heat Pump, 15Ton Outdr Sect Packaged Unit, Air Cooled	EA	8,147.39	
2110	Split Heat Pump, 20Ton Outdr Sect Packaged Unit, Air Cooled	EA	11,359.03	
15714 2200 Indoor Section, Horizontal - Upflow WElectric Heat				
2202	Split Heat Pump, 2-1/2 Tn Indoor Pkgd Un, Horz Upflow w/Elec Heat	EA	705.69	50.53
2204	Split Heat Pump, 3-1/2 Tn Indoor Pkgd Un, Horz Upflow w/Elec Heat	EA	992.57	71.51
2206	Split Heat Pump, 5 Tn Indoor Sect Pkgd Un, Horz Upflow w/Elec Hea	EA	1,101.28	91.61
2208	Split Heat Pump, 10 Ton Indoor Se Pkgd Un, Horz Upflow w/Elec Hea	EA	3,638.15	
2209	Split Heat Pump, 15 Ton Indoor Se Pkgd Un, Horz Upflow w/Elec Hea	EA	5,221.74	
2211	Split Heat Pump, 20 Ton Indoor Se Pkgd Un, Horz Upflow w/Elec Hea	EA	5,847.77	
15714 2400 Removal & Reinstallation of Thru Wall A/C Unit				
Note: Includes Storage And Cleaning.				
2401	Remove & Reinstall Thru Wall A/C Unit		70.63	
15716 0010 Packaged terminal air conditioner				
0200	Packaged term AC, 8800 BTU ht, cab, w slv, lvr, 6000 BTUH cool	EA	1,063.44	
0220	Packaged term AC, 13900 BTU ht, cab, w slv, lvr, 9000 BTUH cool	EA	1,103.88	
15717 0010 Roof top air conditioners				
Note: Manual Outside Air Damper, Roof Curbs And Electric Heat Approximately One-Half Cooling Capacity. Units Are Shipped Fully Factory Assembled In One Piece, Prewired, Prepiped, Charged With Refrigerant, And Include Start-Up. Installation Is Based On Unit Being Placed On Roof By Crane.				
15717 1000 Single zone				
15717 1000 Electric cool, gas heat				
Note: Gas Heat With Electric Cooling, Roof Top Installed.				
1090	Roof top AC, curb, 2 ton, 55 MBH, econ, sgl zone, elec cool,	EA	4,731.27	48.68
1100	Roof top AC, curb, 3 ton, 60 MBH, econ, sgl zone, elec cool,	EA	4,934.53	52.40
1140	Roof top AC, curb, 5 ton, 112 MBH, econ, sgl zone, elec cool,	EA	6,009.87	101.37
1150	7.5Ton Cooling & 150 MBH Heating	EA	5,802.55	27.94
1160	10 Ton Cooling & 200 MBH Heating	EA	8,113.86	22.35
1170	15 Ton Cooling & 300 MBH Heating	EA	10,438.32	27.94
1180	20 Ton Cooling & 300 MBH Heating	EA	16,730.64	24.44
15717 1300 Electric cool, electric heat				
Note: Manual Outside Air Damper, Roof Curbs And Electric Heat Approximately One-Half Cooling Capacity. Units Are Shipped Fully Factory Assembled In One Piece, Prewired, Prepiped, Charged With Refrigerant, And Include Start-Up. Installation Is Based On Unit Being Placed On Roof By Crane.				
1304	Roof top Pkgd HVAC Units, 2 Ton Elec Heat Approx 1/2 Cooling Cap	EA	2,032.61	20.63
1306	Roof top Pkgd HVAC Units, 3 Ton Elec Heat Approx 1/2 Cooling Cap	EA	2,393.36	23.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1308	Rooftop Pkgd HVAC Units, 4 Ton Elec Heat Approx 1/2 Cooling Cap	EA	3,074.46	24.19
1310	Roof top AC, curb, electric heat, 5 ton, econ, sgl zone,	EA	2,294.14	84.05
1312	Rooftop Pkgd HVAC Unit, 7-1/2 Ton Elec Heat Approx 1/2 Cooling Ca	EA	5,485.25	17.41
1314	Roof top AC, curb, electric heat, 10 ton, econ, sgl zone,	EA	4,909.55	94.96
1318	Roof top AC, curb, electric heat, 15 ton, econ, sgl zone,	EA	7,043.72	137.10
1319	Rooftop Pkgd HVAC Unit, 12-1/2Ton Elec Heat Approx 1/2 Cooling Ca	EA	8,607.63	22.04
1322	Roof top AC, curb, electric heat, 20 ton, econ, sgl zone,	EA	9,618.14	190.22
1326	Roof top AC, curb, electric heat, 25 ton, econ, sgl zone,	EA	11,612.68	203.91
1330	Roof top AC, curb, electric heat, 30 ton, econ, sgl zone,	EA	13,724.36	257.41
1334	Roof top AC, curb, electric heat, 40 ton, econ, sgl zone,	EA	18,043.56	324.54
1338	Roof top AC, curb, electric heat, 50 ton, econ, sgl zone,	EA	22,405.36	365.31
1342	Roof top AC, curb, electric heat, 60 ton, econ, sgl zone,	EA	27,448.72	402.87
1346	Roof top AC, curb, electric heat, 75 ton, econ, sgl zone,	EA	33,608.04	488.08

15720 0010 Water chillers

Note: Units Are Factory Assembled Package Type Designed For Outdoor Installation. Price Includes Direct Expansion Cooler, Air Cooled Condenser, Condenser fans, Starters For Compressors And Fan Mtors, Operating And Safety Controls, Insulation, Internal Wiring, Refrigerant Charge, Vibration Eliminators And Start-Up. Costs Do Not Include Piping Or Power Wiring.

15720 0110 Air, Cooled Centrifugal Chillers

Note: AC 460V, Ambient Operation With Starter, With Insulated Evaporator

15720 0110 Air cooled, insulated evaporator

Note: Ambient Operation With Starter Inc With Insulated Evaporator

0120	Water chiller, w/std cntrl, air cool, 130 ton, cntfgl liquid	EA	65,177.73	634.65
0124	Water chiller, w/std cntrl, air cool, 160 ton, cntfgl liquid	EA	79,671.91	753.63
0128	Water chiller, w/std cntrl, air cool, 180 ton, cntfgl liquid	EA	89,252.27	789.23
0132	Water chiller, w/std cntrl, air cool, 210 ton, cntfgl liquid	EA	104,718.01	855.14
0136	Water chiller, w/std cntrl, air cool, 270 ton, cntfgl liquid	EA	132,580.28	922.62
0140	Water chiller, w/std cntrl, air cool, 320 ton, cntfgl liquid	EA	156,598.35	1,020.70

15720 0200 Packaged unit, tower not included

Note: Includes H-Xs, Controls, 460 V Mtor, And All Accessories (Water Temperature Controller With PE Switches, Flow Switch, Etc.) And Also Includes Start-Up. Price Includes Closed Transition Starter. (Rated By Cooling Capacity In Tons). Units Are Factory Assembled package Type Consisting Of Compressor, Mtor, Cooler, Condenser, Internal Piping And Wiring, Mtor Starters, Insulation, Purge Unit, Controls, Gauges, Lubrication System Refrigerant Charge, Oil And Start-Up. Costs Do Not Include Piping Or Power Wiring.

0210	Water ch, cntfgl, 80 ton, wtr cld, no tower, hermetic, pkg	EA	34,219.50	615.13
0220	Water ch, cntfgl, 100 ton, wtr cld, no tower, hermetic, pkg	EA	42,778.32	833.61
0230	Water ch, cntfgl, 150 ton, wtr cld, no tower, hermetic, pkg	EA	64,227.13	1,079.26
0240	Water ch, cntfgl, 200 ton, wtr cld, no tower, hermetic, pkg	EA	102,575.48	1,382.15
0250	Water ch, cntfgl, 250 ton, wtr cld, no tower, hermetic, pkg	EA	106,945.79	1,242.54
0260	Water ch, cntfgl, 300 ton, wtr cld, no tower, hermetic, pkg	EA	128,454.26	1,350.39
0270	Water ch, cntfgl, 350 ton, wtr cld, no tower, hermetic, pkg	EA	149,621.04	1,556.97
0281	Water ch, cntfgl, 400 ton, wtr cld, no tower, hermetic, pkg	EA	171,034.59	1,773.32
0282	Water ch, cntfgl, 450 ton, wtr cld, no tower, hermetic, pkg	EA	192,546.92	4,749.54
0290	Water ch, cntfgl, 500 ton, wtr cld, no tower, hermetic, pkg	EA	213,891.59	2,025.76
0292	Water ch, cntfgl, 550 ton, wtr cld, no tower, hermetic, pkg	EA	235,280.75	7,464.77
0300	Water ch, cntfgl, 600 ton, wtr cld, no tower, hermetic, pkg	EA	256,551.90	1,974.18
0302	Water ch, cntfgl, 650 ton, wtr cld, no tower, hermetic, pkg	EA	278,317.57	5,404.86
0304	Water ch, cntfgl, 700 ton, wtr cld, no tower, hermetic, pkg	EA	299,726.61	4,802.72
0306	Water ch, cntfgl, 750 ton, wtr cld, no tower, hermetic, pkg	EA	321,591.35	4,595.89
0310	Water ch, cntfgl, 800 ton, wtr cld, no tower, hermetic, pkg	EA	342,705.53	2,430.06
0312	Water ch, cntfgl, 850 ton, wtr cld, no tower, hermetic, pkg	EA	364,124.62	4,038.38
0316	Water ch, cntfgl, 900 ton, wtr cld, no tower, hermetic, pkg	EA	384,304.40	5,132.45
0318	Water ch, cntfgl, 950 ton, wtr cld, no tower, hermetic, pkg	EA	404,584.50	4,342.06
0321	Water ch, cntfgl, 1000 ton, wtr cld, no tower, hermetic, pkg	EA	424,975.31	2,528.66
0324	Water ch, cntfgl, 1100 ton, wtr cld, no tower, hermetic, pkg	EA	464,163.57	4,654.29
0330	Water ch, cntfgl, 1200 ton, wtr cld, no tower, hermetic, pkg	EA	507,911.27	4,329.37
0341	Water ch, cntfgl, 1300 ton, wtr cld, no tower, hermetic, pkg	EA	553,403.86	4,639.33
0350	Water ch, cntfgl, 1400 ton, wtr cld, no tower, hermetic, pkg	EA	593,984.90	4,904.49
0361	Water ch, cntfgl, 1500 ton, wtr cld, no tower, hermetic, pkg	EA	634,889.09	4,636.90
0370	Water ch, cntfgl, 1600 ton, wtr cld, no tower, hermetic, pkg	EA	676,167.41	2,767.93
0380	Water ch, cntfgl, 1700 ton, wtr cld, no tower, hermetic, pkg	EA	722,760.84	2,107.79
0390	Water ch, cntfgl, 1800 ton, wtr cld, no tower, hermetic, pkg	EA	765,599.03	1,866.06
0400	Water ch, cntfgl, 1900 ton, wtr cld, no tower, hermetic, pkg	EA	809,169.01	1,990.45
0430	Water ch, cntfgl, 2000 ton, wtr cld, no tower, hermetic, pkg	EA	846,518.79	2,218.56
0440	Water ch, cntfgl, 2500 ton, wtr cld, no tower, hermetic, pkg	EA	1,058,148.48	2,601.36

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15720 0488	Reciprocating Heat Exchanger. Rated By Cooling Capacity, Tons. (Electric)			
	Note: Units Are Factory Assembled Package Type And Include Hermetic Compressor, Mtor, Cooler, Condenser, Internal Piping, Oil, Discharge/Suction gauges, Lead Lag Switch, Compressor Unloaders, Removable Core Filter Drier With 3 Valve By-Pass, Sight Glass, Internal Wiring, Mtor Starters, Insulation, Fan Cycling Controls, Standard Oil HI/LOW Safety Control Switches, Operation And Safety Controls, Refrigerant Charge, Vibration Eliminators And Start-Up. Costs Do Not Include Piping Or Power Wiring.			
15720 0489	Air cooled Heat Exchanger. Rated By Cooling Capacity, Tons. (Electric)			
	Note: Units Are Factory Assembled Package Type And Include Hermetic Compressor, Mtor, Cooler, Condenser, Internal Piping, Oil, Discharge/Suction gauges, Lead Lag Switch, Compressor Unloaders, Removable Core Filter Drier With 3 Valve By-Pass, Sight Glass, Internal Wiring, Mtor Starters, Insulation, Fan Cycling Controls, Standard Oil HI/LOW Safety Control Switches, Operation And Safety Controls, Refrigerant Charge, Vibration Eliminators And Start-Up. Costs Do Not Include Piping Or Power Wiring.			
0490	Water chillers, reciprocating, air cooled, 15 ton cooling	EA	16,293.97	286.90
0500	Water chillers, reciprocating, air cooled, 20 ton cooling	EA	19,953.83	295.20
0515	Water chillers, reciprocating, air cooled, 30 ton cooling	EA	24,298.57	348.08
0520	Water chillers, reciprocating, air cooled, 40 ton cooling	EA	31,456.33	430.88
0538	Water chillers, reciprocating, air cooled, 60 ton cooling	EA	45,245.35	722.76
0540	Water chillers, reciprocating, air cooled, 65 ton cooling	EA	49,842.99	825.64
0546	Water chillers, reciprocating, air cooled, 70 ton cooling	EA	52,545.97	943.35
0552	Water chillers, reciprocating, air cooled, 80 ton cooling	EA	57,236.28	1,069.58
0554	Water chillers, reciprocating, air cooled, 90 ton cooling	EA	61,228.80	1,152.20
0600	Water chillers, reciprocating, air cooled, 100 ton cooling	EA	68,200.75	1,298.88
0620	Water chillers, reciprocating, air cooled, 110 ton cooling	EA	74,766.99	1,460.04
0622	Water chillers, reciprocating, air cooled, 120 ton cooling	EA	77,310.29	229.90
0630	Water chillers, reciprocating, air cooled, 130 ton cooling	EA	84,667.39	1,791.42
0640	Water chillers, reciprocating, air cooled, 150 ton cooling	EA	97,920.87	2,059.09
0650	Water chillers, reciprocating, air cooled, 175 ton cooling	EA	105,949.58	2,388.52
0654	Water chillers, reciprocating, air cooled, 190 ton cooling	EA	117,530.77	2,388.52
0660	Water chillers, reciprocating, air cooled, 210 ton cooling	EA	130,873.94	2,843.50
15720 0680	Water cooled, single compressor			
0700	Water ch, recip,2-5 ton cool, semi-hermetic,wtr cld,sgl cprsr,	EA	7,524.20	258.01
0760	Water ch, recip,10 ton cool, semi-hermetic,wtr cld, sgl	EA	13,480.79	476.42
15720 0980	Water cooled, multiple compressor Integral Heat Exchanger. Rated By Cooling Capacity In Tons. (Electric)			
	Note: Units Are Factory Assembled Package Type And Include Hermetic Compressor, Mtor, Cooler, Condenser, Internal Piping, Oil, Discharge/Suction gauges, Lead Lag Switch, Compressor Unloaders, Removable Core Filter Drier With 3 Valve By-Pass, Sight Glass, Internal Wiring, Mtor Starters, Insulation, Fan Cycling Controls, Standard Oil HI/LOW Safety Control Switches, Operation And Safety Controls, Refrigerant Charge, Vibration Eliminators And Start-Up. Costs Do Not Include Piping Or Power Wiring.			
1000	Water ch, recip,15 ton cool, semi-hermetic,wtr cld,mult	EA	19,921.51	540.78
1020	Water ch, recip,20 ton cool, semi-hermetic,wtr cld,mult	EA	21,890.28	542.54
1060	Water ch, recip,30 ton cool, semi-hermetic,wtr cld,mult	EA	25,657.87	591.06
1080	Water ch, recip,40 ton cool, semi-hermetic,wtr cld,mult	EA	28,084.65	790.47
1120	Water ch, recip,60 ton cool, semi-hermetic,wtr cld,mult	EA	34,706.01	999.55
1140	Water ch, recip,80 ton cool, semi-hermetic,wtr cld,mult	EA	48,915.26	1,460.19
1160	Water ch, recip,100 ton cool, semi-hermetic,wtr cld,mult	EA	61,902.47	1,910.74
1180	Water ch, recip,120 ton cool, semi-hermetic,wtr cld,mult	EA	67,161.17	1,680.91
1210	Water ch, recip,160 ton cool, semi-hermetic,wtr cld,mult	EA	84,770.84	2,200.01
1212	Water ch, recip,180 ton cool, semi-hermetic,wtr cld,mult	EA	91,453.61	2,218.37
1214	Water ch, recip,200 ton cool, semi-hermetic,wtr cld,mult	EA	101,734.48	2,640.92
15720 1450	Water cooled, dual compressors			
1640	Water ch, recip, 225 ton cool, wtr cld, dual cprsr, direct dr,	EA	132,607.96	3,554.47
1660	Water ch, recip, 250 ton cool, wtr cld, dual cprsr, direct dr,	EA	145,348.15	4,478.55
15720 7000	Packaged Water-Cooled Screw Chiller			
	Note: Unit Is Factory Assembled And Includes Unit Mounted Combination Starter, Microprocessor Controls w/Control Trasformer, Control Interface Module, Bearing Temperature Sensors, Under/Over Voltage Protection, Insulation, Refrigerant Charge, Vibration Isolators, And Start-Up. Evaporator Tubes Are 0.028" Internally Enhanced Copper. Condensor Tubes 0.028" Smooth Bore Copper. Includes Crane To Unload And Set Unit In Place. Minimum Efficiency Shall Be 0.70 kW/Ton, Except 70 Ton Model Shall Be 0.78kW/Ton And 100 Ton Model Shall Be 0.77 kW/Ton. Efficiencies Are Based On 45/55 Deg. F CHWS/CHWR And 85/95 Deg. F CWS/CWR. Maximum Pressure Drop Thru The Condensor Or Evaporator Shall Not Exceed 20Ft H2O.			
7001	70 Ton, Screw Chiller, Trane Model RTWA Or Approved Equal	EA	33,248.41	700.51
7002	100 Ton, Screw Chiller, Trane Model RTWA Or Approved Equal	EA	38,284.64	840.68
7003	150 Ton, Screw Chiller, Trane Model RTHB Or Approved Equal	EA	58,448.51	980.67
7004	200 Ton, Screw Chiller, Trane Model RTHB Or Approved Equal	EA	65,221.61	1,050.67
7005	300 Ton, Screw Chiller, Trane Model RTHB Or Approved Equal	EA	71,782.75	1,307.85
7006	400 Ton, Screw Chiller, Trane Model RTHB Or Approved Equal	EA	99,584.18	1,548.45
15720 8000	Direct expansion, shell and tube type			
	Note: Built-Up Systems. Chilled Water Temp Rise Is 12 Deg F. Rated By Cooling Capacity In Tons.			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8020	Water chillers, shell & tube type 1 ton, w/std cntrl, dir	EA	5,079.32	174.60
8030	Water chillers, shell & tube type 5 ton, w/std cntrl, dir	EA	8,259.31	103.85
8040	Water chillers, shell & tube type 10 ton, w/std cntrl, dir	EA	10,203.33	70.64
8042	Water chillers, shell & tube type 15 ton, w/std cntrl, dir	EA	10,771.57	59.61
8050	Water chillers, shell & tube type 20 ton, w/std cntrl, dir	EA	11,458.88	79.62
8052	Water chillers, shell & tube type 25 ton, w/std cntrl, dir	EA	12,804.31	94.98
8060	Water chillers, shell & tube type 30 ton, w/std cntrl, dir	EA	14,307.87	122.26
8070	Water chillers, shell & tube type 50 ton, w/std cntrl, dir	EA	22,085.38	183.86
8072	Water chillers, shell & tube type 75 ton, w/std cntrl, dir	EA	31,325.70	210.31
8074	Water chillers, shell & tube type 80 ton, w/std cntrl, dir	EA	33,040.54	210.31
8080	Water chillers, shell & tube type 100 ton, w/std cntrl, dir	EA	40,580.33	280.43

15722 System Components

15723 0010 Coils, flanged 16 Gauge Galvanized Steel Casing

15723 0100 Basic water, DX, or condenser coils

Note: Handling Units - 2 Row Coils - The Following Coils Are Sized By Air Handling Unit Capacity

15723 0259 3/8" Dia. Tube, 2 Row

0260	Coils, flgd, 12"Hx12"L, 3/8"x.016 cu tube, 2 row, 8 fpi,	EA	468.40	21.71
0261	Coils, flgd, 12"Hx12"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	468.40	
0270	Coils, flgd, 12"Hx24"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	544.28	20.58
0374	Coils, flgd, 24"Hx30"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	919.25	40.20
0380	Coils, flgd, 24"Hx48"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	1,135.25	58.19
0410	Coils, flgd, 30"Hx48"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	1,321.65	71.31
0414	Coils, flgd, 30"Hx60"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	1,479.11	85.93
0420	Coils, flgd, 30"Hx72"L, 3/8"x.016 cu tube, 2 row, wtr/DX/cond	EA	1,675.57	98.03

15723 0709 3/8" Dia. Tube, 4 Row

0710	Coils, flgd, 12"Hx12"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	616.34	25.15
0714	Coils, flgd, 12"Hx24"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	721.83	49.78
0718	Coils, flgd, 24"Hx30"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	1,232.86	102.43
0722	Coils, flgd, 24"Hx48"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	1,533.79	152.88
0726	Coils, flgd, 30"Hx48"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	1,787.25	188.22
0730	Coils, flgd, 30"Hx60"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	2,013.83	216.92
0734	Coils, flgd, 30"Hx72"L, 3/8"x.016 cu tube, 4 row, wtr/DX/cond	EA	2,293.00	264.57

15723 0759 3/8" Dia. Tube, 6 Row

0760	Coils, flgd, 12"Hx12"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	763.63	53.11
0764	Coils, flgd, 12"Hx24"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	899.24	77.91
0768	Coils, flgd, 24"Hx30"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	1,546.48	165.19
0772	Coils, flgd, 24"Hx48"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	1,929.93	225.30
0776	Coils, flgd, 30"Hx48"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	2,256.56	250.24
0780	Coils, flgd, 30"Hx60"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	2,543.97	303.57
0784	Coils, flgd, 30"Hx72"L, 3/8"x.016 cu tube, 6 row, wtr/DX/cond	EA	2,895.93	350.04

15723 0809 3/8" Dia. Tube, 8 Row

0810	Coils, flgd, 12"Hx12"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	867.95	58.12
0814	Coils, flgd, 12"Hx24"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	1,029.38	85.47
0818	Coils, flgd, 24"Hx30"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	1,787.10	174.88
0822	Coils, flgd, 24"Hx48"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	2,242.13	251.27
0826	Coils, flgd, 30"Hx48"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	2,627.33	305.59
0830	Coils, flgd, 30"Hx60"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	2,999.45	358.06
0834	Coils, flgd, 30"Hx72"L, 3/8"x.016 cu tube, 8 row, wtr/DX/cond	EA	3,471.23	399.15

15723 1129 1/2" Dia. Tube, 2 Row

1130	Coils, flgd, 5"H x 20"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	382.35	7.59
1150	Coils, flgd, 5"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	676.33	34.06
1170	Coils, flgd, 7.5"H x 20"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	417.83	11.42
1190	Coils, flgd, 7.5"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	783.62	42.54
1210	Coils, flgd, 12.5"Hx20"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	487.08	12.28
1230	Coils, flgd, 12.5"Hx90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	1,005.72	54.92
1250	Coils, flgd, 15"H x 30"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	598.40	22.14
1270	Coils, flgd, 15"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	1,111.30	64.32
1280	Coils, flgd, 20"H x 20"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	609.05	16.71
1300	Coils, flgd, 20"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	1,352.63	75.08
1330	Coils, flgd, 25"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	1,595.55	72.95
1360	Coils, flgd, 30"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	1,821.99	89.34
1390	Coils, flgd, 35"H x 90"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	2,033.53	97.11
1410	Coils, flgd, 42.5"Hx75"L, 1/2"x .017 cu tube, 2 row, wtr/DX/cond	EA	2,159.35	92.82

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1420	Coils, flgd, 42.5"Hx105"L, 1/2"x .017 cu tube, 2 row, wtr/DX/con	EA	2,758.43	117.23
15723 2069	5/8" Dia. Tube, 2 Row			
2070	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	432.33	3.90
2080	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	509.65	29.87
2144	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	834.36	55.07
2150	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	1,048.66	81.60
2180	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	1,278.36	104.45
2184	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	1,416.86	124.36
2186	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 2 row, wtr/DX/con	EA	1,610.77	142.56
15723 2609	5/8" Dia. Tube, 4 Row			
2610	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	609.13	25.15
2614	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	720.68	49.71
2618	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	1,187.03	98.49
2622	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	1,497.71	149.16
2626	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	1,823.32	192.16
2630	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	2,030.24	218.73
2634	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 4 row, wtr/DX/con	EA	2,316.28	267.38
15723 2659	5/8" Dia. Tube, 6 Row			
2660	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	785.28	53.15
2664	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	931.56	80.79
2668	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	1,539.69	154.69
2672	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	1,944.36	227.07
2676	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	2,372.00	263.58
2680	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	2,639.04	315.42
2684	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 6 row, wtr/DX/con	EA	3,007.30	364.13
15723 2709	5/8" Dia. Tube, 8 Row			
2710	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	922.08	60.42
2714	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	1,098.65	91.36
2718	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	1,827.85	179.00
2722	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	2,315.73	259.82
2726	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	2,826.47	329.72
2730	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	3,179.41	380.56
2734	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 8 row, wtr/DX/con	EA	3,677.16	424.09
15723 3000	Hbt water booster coils			
3850	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	202.36	9.12
3860	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	253.20	26.72
3920	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	388.36	45.70
3934	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	439.13	60.96
3964	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	589.25	85.90
3966	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	654.27	102.04
3968	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 1 row, wtr/DX/con	EA	713.93	110.13
4210	Coils, flgd, 12"Hx12"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	268.10	17.74
4214	Coils, flgd, 12"Hx24"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	339.23	38.99
4218	Coils, flgd, 24"Hx30"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	530.08	66.95
4222	Coils, flgd, 24"Hx48"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	603.74	89.76
4226	Coils, flgd, 30"Hx48"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	804.76	127.66
4230	Coils, flgd, 30"Hx60"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/c	EA	908.14	164.55
4234	Coils, flgd, 30"Hx72"L, 5/8"x .020" cu tube, 2 rows, wtr/DX/co	EA	995.79	186.38
15723 4400	Steam and hot water heating coils			
4510	Coils, flgd, 12"Hx12"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	400.06	18.27
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		124.70	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		190.66	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		304.12	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		82.35	
4520	Coils, flgd, 12"Hx24"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	450.90	36.51
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		144.64	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		206.71	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		328.87	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		94.86	
4624	Coils, flgd, 24"Hx30"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	680.73	85.26
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		226.05	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		296.70	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		470.35	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		147.06	
4630	Coils, flgd, 24"Hx48"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	843.98	118.90

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		290.67	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		347.04	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		547.77	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		187.53	
4654	Coils, flgd, 30"Hx48"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	908.74	136.92
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		316.29	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		367.03	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		578.52	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		203.58	
4656	Coils, flgd, 30"Hx60"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	1,175.77	196.66
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		406.80	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		479.76	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		756.80	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		262.19	
4658	Coils, flgd, 30"Hx72"L, 5/8" cu tube, 175PSIG, 1 row, st & HW	EA	1,560.37	264.43
4930	Coils, flgd, st&hw htg, 5/8" tbg, for 2 row, add		531.19	
4940	Coils, flgd, st&hw htg, 5/8" tbg, for 3 row, add		654.03	
4950	Coils, flgd, st&hw htg, 5/8" tbg, for 4 row, add		1,033.84	
4960	Coils, flgd, st&hw htg, 5/8" tbg, for 230 PSIG hvy dty, add		343.61	
15726 0010 Compressors				
Note: Package Includes V-Belt Drive, Mtor And Receiver. Package Does Not Include Piping, Prv Station, Or Air Dryer (See CSI 15727/1700 For Compressed Air Dryers)				
15726 1000 Compressor, Air Medical				
1001	100 SCFM Duplex	EA	15,801.98	
1002	160 SCFM Duplex	EA	21,349.70	
1003	Vacuum Air Compressor	EA	12,694.30	
15726 5250 Air, reciprocating air cooled And 125 Psig Wörking Pressure				
15726 5300 1 stage, 1 phase				
5303	Compressor, air, 30 gal tank, recip, 1stg, 1ph, 140psi, 1/2 HP	EA	1,190.78	47.46
5305	Compressor, air, 30 gal tank, recip, 1stg, 1ph, 140psi, 3/4 HP	EA	1,231.77	54.76
5307	Compressor, air, 30 gal tank, recip, 1stg, 1ph, 140psi, 1 HP	EA	1,553.43	64.71
5309	Compressor, air, 30 gal tank, recip, 1stg, 1ph, 140psi, 2 HP	EA	1,955.08	66.70
5314	Compressor, air, 60 gal tank, recip, 1stg, 1ph, 140psi, 3 HP	EA	3,075.47	76.21
5330	Compressor, air, 80 gal tank, recip, 1stg, 1ph, 140psi, 5 HP	EA	3,331.70	88.88
5340	Compressor, air, 80 gal tank, recip, 1stg, 1ph, 140psi, 7.5 HP	EA	5,596.71	102.57
15726 5600 2 stage, 3 phase				
5650	Compressor, air, 6 CFM @ 125 PSI, 1-1/2 HP, 60 gal tk, recip,	EA	2,533.23	113.47
5660	Compressor, air, 6 CFM @ 125 PSI, 2 HP, 60 gal tk, recip,	EA	2,762.51	153.27
5666	Compressor, air, 6 CFM @ 125 PSI, 3 HP, 60 gal tk, recip,	EA	2,929.17	170.27
5670	Compressor, air, 10.9 CFM @ 125 PSI, 3 HP, 80 gal tk, recip, 2stg,	EA	3,210.04	181.73
5674	Compressor, air, 10.9 CFM @ 125 PSI, 5 HP, 80 gal tk, recip,	EA	3,521.03	232.29
5676	Compressor, air, 10.9 CFM @ 125 PSI, 10 HP, 80 gal tk, recip,	EA	5,995.80	340.64
5684	Compressor, air, 10.9 CFM @ 125 PSI, 15 HP, 120 gal tk, recip,	EA	7,447.06	381.77
5686	Compressor, air, 10.9 CFM @ 125 PSI, 20 HP, 120 gal tk, recip,	EA	9,315.55	385.70
15726 6000 2 stage, 3 phase, pressure lubricated @ 175 PSIG				
6054	Compressor, air, 5CFM 1-1/2HP, 80gal, recip, 2stg, press lube,	EA	2,409.09	121.55
6056	Compressor, air, 6.4CFM 2HP, 80gal, recip, 2stg, press lube,	EA	2,666.42	153.27
6058	Compressor, air, 8.1CFM 3HP, 80gal, recip, 2stg, press lube,	EA	2,820.41	159.62
6059	Compressor, air, 14.8CFM 5HP, 80gal, recip, 2stg, press lube,	EA	3,514.58	306.55
6063	Compressor, air, 13CFM 6HP, 80gal, recip, 2stg, press lube,	EA	4,818.46	309.03
6066	Compressor, air, 19.8CFM 7.5HP, 80gal, recip, 2stg, press lube,	EA	5,007.09	340.61
6070	Compressor, air, 25.8CFM 7.5HP, 120gal, recip, 2stg, press lube	EA	6,911.53	333.51
6080	Compressor, air, 34.8CFM 10HP, 120gal, recip, 2stg, press lube,	EA	7,929.04	435.27
6090	Compressor, air, 53.7CFM 15HP, 120gal, recip, 2stg, press lube,	EA	8,892.42	456.88
6104	Compressor, air, 76.7CFM 20HP, 240gal, recip, 2stg, press lube,	EA	10,055.83	511.84
6110	Compressor, air, 90.1CFM 25HP, 120gal, recip, 2stg, press lube,	EA	11,782.79	524.57
6120	Compressor, air, 101CFM 30HP, 120gal, recip, 2stg, press lube,	EA	12,341.52	534.69
6130	Compressor, air, 101CFM 30HP, 250gal, recip, 2stg, press lube,	EA	13,087.60	552.20
15726 6200 Compressed Air Drop Station				
6210	1/2" Air Drop Station, Incl Ball Valve, Fil, Reg, Quick Connect	EA	258.77	
15727 0010 Compressor accessories				
15727 1700 Refrigerated air dryers w/ambient air filters				
1710	Compressor accessories, 10 CFM refrd air dryer w/ambient air	EA	678.74	15.79
1720	Compressor accessories, 25 CFM refrd air dryer w/ambient air	EA	1,127.28	20.15

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1730	Compressor accessories, 50 CFM refrd air dryer w/ambient air	EA	1,970.37	42.58
1740	Compressor accessories, 75 CFM refrd air dryer w/ambient air	EA	2,452.05	40.66
1750	Compressor accessories, 100 CFM refrd air dryer w/ambient air	EA	2,619.65	46.66
15727 4000	Couplers			
4160	Compressor accessories, 1/2", air line coupler, male & female	EA	39.24	10.89
4170	Compressor accessories, 3/4", air line coupler, male & female	EA	45.00	13.50
15727 4300	Oil and water filter for air compressor			
Note: Aluminum Housing With Pressure Rating Of 250 Psig At 70 F. 1/2 In Npt Inlet And Outlet. Includes Manual Drain Valve And Box Of Ten Filters				
4320	Compressor accessories, rated 250PSIG, 1/2"NP, oil/water	EA	327.20	2.57
15728 0010	Condensers			
15728 0080	Air cooled, belt drive, propeller fan			
Note: Units Include A Compressor, Condenser, Fan, Mtors, Discharge/Suction Gauges, Sight Glass, Fan Cycling Controls, Standard Oil HI/Low Safety Control Switches. Costs Do Not Include Piping Or Valves.				
0240	Condensers, 30F TD rate, prop fan, 50 ton, R-22, air cool,	EA	11,845.83	573.31
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		501.64	
0400	Condensers, 30F TD rate, prop fan, 101 ton, R-22, air cool,	EA	23,569.31	887.81
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		981.67	
0500	Condensers, 30F TD rate, prop fan, 159 ton, R-22, air cool,	EA	35,181.24	1,463.79
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		1,463.86	
0600	Condensers, 30F TD rate, prop fan, 228 ton, R-22, air cool,	EA	52,163.86	2,094.81
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		2,116.19	
0650	Condensers, 30F TD rate, prop fan, 250 ton, R-22, air cool,	EA	61,061.26	1,902.71
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		2,518.28	
0700	Condensers, 30F TD rate, prop fan, 314 ton, R-22, air cool,	EA	76,952.70	2,685.84
1510	Condensers, 30F TD rate, prop fan, belt dr, for liquid receiver, add		3,194.54	
15728 1550	Air cooled, direct drive, propeller fan			
Note: Incl. Coml & Std Controls.				
1620	Condensers, 30F TD rate, prop fan, 2 ton, R-22, air cool,	EA	850.83	51.98
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		33.67	
1622	3 Ton Air Cooled Condenser Belt/ Direct Driven Prop, Vert Cu Coil	EA	1,243.84	87.79
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		53.72	
1624	4 Ton Air Cooled Condenser Belt/ Direct Driven Prop, Vert Cu Coil	EA	1,528.06	104.46
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		66.31	
1640	Condensers, 30F TD rate, prop fan, 5 ton, R-22, air cool,	EA	1,656.95	126.45
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		68.66	
1642	6 Ton Air Cooled Condenser Belt/ Direct Driven Prop, Vert Cu Coil	EA	1,597.26	141.49
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		66.31	
1644	7-1/2 Ton Air Cooled Condenser B/D Driven Prop w/Vert Cu Coils	EA	1,632.24	160.33
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		66.31	
1660	Condensers, 30F TD rate, prop fan, 10 ton, R-22, air cool,	EA	2,525.06	198.65
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		105.98	
1662	12-1/2 Ton AC Condenser Belt/ Direct Driven Prop, Vert Cu Coils	EA	2,246.42	215.84
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		91.70	
1690	Condensers, 30F TD rate, prop fan, 16 ton, R-22, air cool,	EA	3,499.43	254.18
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		149.17	
1692	25 Ton AC Condenser Belt/Direct Driven Prop w/Vert Cu Coils	EA	5,360.59	305.59
1990	Condenser, 30F TD rate, prop fan, direct dr, for liquid receiver, add		238.38	
15728 3400	Evaporative, copper coil, pump, fan motor			
Note: Including Relief Device, Liquid Line Shut-Off Valve And Angle Valve With Pressure Connection For Water Regulating Valve				
3460	Condensers, 30F TD rate, fan motor, 15 ton, R-22, evap, cu	EA	6,002.15	181.94
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		194.67	
3480	Condensers, 30F TD rate, fan motor, 20 ton, R-22, evap, cu	EA	6,271.66	196.49
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		202.59	
3482	25 Ton Water Cooled Condenser	EA	5,500.99	172.84
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		206.49	
3520	Condensers, 30F TD rate, fan motor, 30 ton, R-22, evap, cu	EA	7,123.86	247.72
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		230.89	
3540	Condensers, 30F TD rate, fan motor, 40 ton, R-22, evap, cu	EA	9,417.18	349.66
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		305.59	
3560	Condensers, 30F TD rate, fan motor, 50 ton, R-22, evap, cu	EA	11,797.49	431.06
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		382.55	
3580	Condensers, 30F TD rate, fan motor, 65 ton, R-22, evap, cu	EA	13,099.97	448.83
3870	Cond, 30F TD rate, fan mt, evap, cu coil, pump, for saddle legs, add		424.43	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3600	Condensers, 30F TD rate, fan motor, 80 ton, R-22, evap, cu	EA	14,285.90	462.28
3870	<i>Cond, 30F TD rate, fan mot, evap, cu coil, pump, for saddle legs, add</i>		466.08	
3640	Condensers, 30F TD rate, fan motor, 100 ton, R-22, evap, cu	EA	17,088.10	648.63
3870	<i>Cond, 30F TD rate, fan mot, evap, cu coil, pump, for saddle legs, add</i>		552.32	
3720	Condensers, 30F TD rate, fan motor, 150 ton, R-22, evap, cu	EA	24,296.00	756.71
3870	<i>Cond, 30F TD rate, fan mot, evap, cu coil, pump, for saddle legs, add</i>		783.21	
15728 4000 Refrigerant, Recovery, Reclaim And Recycling				
15728 4010 Refrigerant				
4020	Refrigerant R-22, 50# Cyl Mnochlorodifluoromethane	LB	2.87	
4030	Refrigerant R-502, 50# Cyl	LB	6.44	
4050	Refrigerant R-13, 30# Cyl Mnochlorotrifluoromethane	LB	41.87	
4060	Refrigerant R-113, 200# Drum Trichlorotrifluoroethane	LB	64.27	
4070	Refrigerant R-114, 150# Drum Dichlorotetrafluoroethane	LB	8.00	
4080	Refrigerant R-500, 30# Drum Refrigerants R-12/152A	LB	6.75	
4090	Refrigerant R-134A	LB	20.91	
4100	Refrigerant R-123	LB	10.57	
15728 5010 Refrigerant Recovery, Reclaim And Recycling				
5020	Recovery Of Refrigerant	LB	2.98	
5030	Reclaim Refrigerant	LB	3.58	
5040	Recycling Of Refrigerant, Includes Recovery & Charging	LB	5.58	
15728 5100 Special Chemicals/Component				
15728 5110 Special Chemicals/Component				
5120	Special Chemical, Inhibited Propylene Glycol	GAL	17.57	
15729 0010 Condensing units				
Note: Units Include A Compressor, condenser, Fan, Motors, Discharge/ Suction Gauges, Sight Glass, Fan Cycling Controls, Standard Oil Hi/Low Safety Control Swithes. Costs Do Not Include Piping Or Valves.				
15729 0030 Air cooled, compressor, standard controls				
Note: Motors, Discharge/Suction Gauges, Sight Glass, Fan Cycling Controls, Standard Oil HI/LOW Safety Control Switches. Costs Do Not Include Piping Or Valves.				
0050	Condensing units, 1.5 ton, air cooled, compressor, std controls	EA	1,079.43	137.52
1204	<i>For Crank Case Heater, Add</i>		42.62	
1224	<i>For Winter Start Control, Add</i>		31.23	
0100	Condensing units, 2 ton, air cooled, compressor, std controls	EA	1,168.57	155.44
1204	<i>For Crank Case Heater, Add</i>		44.91	
1224	<i>For Winter Start Control, Add</i>		36.01	
0200	Condensing units, 2.5 ton, air cooled, compressor, std controls	EA	1,514.13	194.36
1204	<i>For Crank Case Heater, Add</i>		59.01	
1224	<i>For Winter Start Control, Add</i>		45.20	
0300	Condensing units, 3 ton, air cooled, compressor, std controls	EA	1,813.57	234.99
1204	<i>For Crank Case Heater, Add</i>		68.84	
1224	<i>For Winter Start Control, Add</i>		57.44	
0350	Condensing units, 3.5 ton, air cooled, compressor, std controls	EA	2,102.78	244.03
1204	<i>For Crank Case Heater, Add</i>		79.34	
1224	<i>For Winter Start Control, Add</i>		67.47	
0400	Condensing units, 4 ton, air cooled, compressor, std controls	EA	2,453.51	225.51
1204	<i>For Crank Case Heater, Add</i>		91.14	
1224	<i>For Winter Start Control, Add</i>		81.30	
0500	Condensing units, 5 ton, air cooled, compressor, std controls	EA	3,170.14	348.45
1204	<i>For Crank Case Heater, Add</i>		111.20	
1224	<i>For Winter Start Control, Add</i>		116.85	
0550	Condensing units, 7.5 ton, air cooled, compressor, std controls	EA	5,109.63	381.62
1204	<i>For Crank Case Heater, Add</i>		203.91	
1224	<i>For Winter Start Control, Add</i>		143.92	
0600	Condensing units, 10 ton, air cooled, compressor, std controls	EA	5,843.03	456.02
1204	<i>For Crank Case Heater, Add</i>		235.38	
1224	<i>For Winter Start Control, Add</i>		160.61	
0650	Condensing units, 15 ton, air cooled, compressor, std controls	EA	8,172.54	525.10
1204	<i>For Crank Case Heater, Add</i>		337.67	
1224	<i>For Winter Start Control, Add</i>		209.45	
0700	Condensing units, 20 ton, air cooled, compressor, std controls	EA	11,682.73	595.46
1204	<i>For Crank Case Heater, Add</i>		475.36	
1224	<i>For Winter Start Control, Add</i>		312.63	
0710	25Ton Air Cooled Condensing Unit w/Compressor, Condenser, Fan&Moto	EA	8,358.79	416.79
1204	<i>For Crank Case Heater, Add</i>		379.09	
1224	<i>For Winter Start Control, Add</i>		153.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	Condensing units, 40 ton, air cooled, compressor, std controls	EA	22,775.39	1,303.22
1204	For Crank Case Heater, Add		921.21	
1224	For Winter Start Control, Add		619.36	
0840	Condensing units, 50 ton, air cooled, compressor, std controls	EA	27,586.17	1,711.07
1204	For Crank Case Heater, Add		1,137.58	
1224	For Winter Start Control, Add		710.98	
0900	Condensing units, 75 ton, air cooled, compressor, std controls	EA	51,194.49	2,943.41
1204	For Crank Case Heater, Add		2,248.92	
1224	For Winter Start Control, Add		1,071.38	
0910	90Ton Air Cooled Condensing Unit W/Compressor, Condensor, Fan&Mto	EA	28,658.51	638.60
1204	For Crank Case Heater, Add		1,346.63	
1224	For Winter Start Control, Add		441.92	
0920	100Tn Air Cooled Condensing Unit w/Compressor, Condenser, Fan&Mto	EA	31,641.63	678.35
1204	For Crank Case Heater, Add		1,490.41	
1224	For Winter Start Control, Add		481.43	
0930	120Tn Air Cooled Condensing Unit w/Compressor, Condenser, Fan&Mto	EA	41,263.70	701.40
1204	For Crank Case Heater, Add		1,968.41	
1224	For Winter Start Control, Add		583.24	
0940	130Tn Air Cooled Condensing Unit w/Compressor, Condenser, Fan&Mto	EA	43,947.13	685.97
1204	For Crank Case Heater, Add		2,099.25	
1224	For Winter Start Control, Add		616.06	
15729 1500 Removal & Reinstallation Of AC Condensing Unit Includes Storage And Cleaning				
1505	Remove & Reinstall AC Cond Unit Up To 5 Tons	EA	3,170.14	
1510	Remove & Reinstall AC Cond Unit 7.5 To 15 Tons	EA	441.44	
1520	Remove & Reinstall AC Cond Unit 20 To 40 Tons	EA	759.41	
15729 2000 Water cooled, compressor, heat exchanger				
2100	Condensing units, controls, 5 ton, water cooled, cprsr, heat	EA	5,217.03	520.53
2110	Condensing units, controls, 10 ton, water cooled, cprsr, heat	EA	7,171.09	690.51
2112	15Ton H2O Cooled Condensing Unit w/Compressor, Condenser & Mtor	EA	3,624.18	327.32
2300	Condensing units, controls, 20 ton, water cooled, cprsr, heat	EA	12,272.82	1,070.29
2310	Condensing units, controls, 30 ton, water cooled, cprsr, heat	EA	16,929.60	1,611.00
2410	Condensing units, controls, 60 ton, water cooled, cprsr, heat	EA	30,572.06	2,072.80
2420	Condensing units, controls, 80 ton, water cooled, cprsr, heat	EA	39,757.23	2,621.20
2510	Condensing units, controls, 120 ton, water cooled, cprsr, heat	EA	76,156.10	3,984.18
15729 3000 Reciprocating Open Type Compressors				
Note: Including Manual Reversible Oil Pump And Automatic Pressure Regulator Prices Do Not Include Muffler, Vibration Isolators, Crank Case Oil Heaters, Couplings And Flywheel				
15729 3200 With Refrigerant R-22				
3210	5 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	1,017.27	299.39
3220	10 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	1,756.10	371.97
3230	15 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	2,424.60	427.70
3240	20 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	3,040.24	511.53
3250	25 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	3,274.61	549.92
3260	30 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	3,496.41	580.75
3270	50 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	6,902.62	635.68
3280	100 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	9,480.38	572.75
3290	150 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	12,593.73	879.12
3300	200 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	14,294.84	926.14
3310	250 Ton Refrigerant Compressor Recip Open Type w/R-22 Refrig	EA	17,679.75	1,039.78
15729 3400 Reciprocating Hermetic Type Compressors				
15729 3401 With Refrigerant R-22				
3410	5 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	728.58	148.27
3420	10 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	1,319.23	180.36
3430	15 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	2,144.74	216.24
3440	20 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	2,712.66	247.89
3450	25 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	2,997.09	275.57
3460	30 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	3,326.15	310.10
3470	35 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	4,268.25	352.86
3480	50 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	6,671.74	408.12
3490	100 Ton Refrigerant Compressor Recip Hermetic Type w/R-22 Ref	EA	9,212.26	525.69

15730 0010 Cooling towers

15730 0070 Galvanized steel

Note: Axial Flow Packaged Cooling Tower Including Pumps, Piping, And Mtor. Does Not Include Mtor Starters. (Rated By Cooling Capacity In Tons) Based On Design Water Temperature 95 Deg F In, 85 Deg F Out, 78 Deg F Wb. 3 Gpm/Ton.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15730 0080 Draw thru, single flow				
0310	Cooling tower, galv stl, 10 ton, packaged, draw thru	EA	859.89	37.57
0314	Cooling tower, galv stl, 20 ton, packaged, draw thru	EA	1,623.09	75.10
0318	Cooling tower, galv stl, 30 ton, packaged, draw thru	EA	2,434.64	127.67
0322	Cooling tower, galv stl, 40 ton, packaged, draw thru	EA	3,246.11	180.17
0326	Cooling tower, galv stl, 50 ton, packaged, draw thru	EA	4,057.73	231.45
0334	Cooling tower, galv stl, 75 ton, packaged, draw thru	EA	6,086.59	288.63
0338	Cooling tower, galv stl, 100 ton, packaged, draw thru	EA	8,018.76	421.74
0342	Cooling tower, galv stl, 120 ton, packaged, draw thru	EA	9,363.16	524.14
0346	Cooling tower, galv stl, 150 ton, packaged, draw thru	EA	11,274.10	435.12
0350	Cooling tower, galv stl, 300 ton, packaged, draw thru	EA	22,548.21	870.24
15730 1500 Induced air, double flow				
Note: Tower Including Pumps, Piping, And Mtor. Note Mtor Starter Not Included.				
2310	Cooling tower pkg, 100 ton, packaged, galv stl, ind air, dbl	EA	10,122.05	420.62
2312	150 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	23,223.17	886.92
2320	Cooling tower pkg, 200 ton, packaged, galv stl, ind air, dbl	EA	20,243.23	598.94
2322	250 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	34,372.64	697.24
2330	Cooling tower pkg, 300 ton, packaged, galv stl, ind air, dbl	EA	21,301.03	570.34
2332	350 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	44,430.34	643.71
2340	Cooling tower pkg, 400 ton, packaged, galv stl, ind air, dbl	EA	28,430.71	729.70
2342	450 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	56,323.19	638.21
2350	Cooling tower pkg, 500 ton, packaged, galv stl, ind air, dbl	EA	33,542.02	748.55
2352	550 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	68,438.96	685.11
2354	600 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	73,615.32	681.70
2360	Cooling tower pkg, 700 ton, packaged, galv stl, ind air, dbl	EA	46,916.80	891.38
2362	800 Ton Prop Type Cooling Tower Double Flow w/Pump, 20' Pipe&Mtor	EA	92,653.63	606.53
2370	Cooling tower pkg, 900 ton, packaged, galv stl, ind air, dbl	EA	49,087.03	839.06
15730 2500 Centrifugal type				
Note: Including Mtor, Pumps, And Piping. Mtor Starters Not Included. Rated By Cooling Capacity In Tons. Design Temperature 95 F In, 85 F Out.				
2510	Cooling tower pkg, 50 ton, galv stl, centrifugal, packaged	EA	7,172.55	455.06
2520	Cooling tower pkg, 75 ton, galv stl, centrifugal, packaged	EA	9,344.07	512.43
2524	Cooling tower pkg, 100 ton, galv stl, centrifugal, packaged	EA	11,075.04	573.74
2528	Cooling tower pkg, 125 ton, galv stl, centrifugal, packaged	EA	13,022.32	443.11
2532	Cooling tower pkg, 200 ton, galv stl, centrifugal, packaged	EA	17,308.94	661.18
2536	Cooling tower pkg, 250 ton, galv stl, centrifugal, packaged	EA	20,739.73	1,001.92
2540	Cooling tower pkg, 300 ton, galv stl, centrifugal, packaged	EA	23,942.41	726.61
2544	Cooling tower pkg, 350 ton, galv stl, centrifugal, packaged	EA	27,099.16	1,207.00
2548	Cooling tower pkg, 400 ton, galv stl, centrifugal, packaged	EA	28,494.66	780.61
2552	Cooling tower pkg, 450 ton, galv stl, centrifugal, packaged	EA	34,073.48	1,419.70
2556	Cooling tower pkg, 500 ton, galv stl, centrifugal, packaged	EA	36,481.48	1,249.41
2560	Cooling tower pkg, 550 ton, galv stl, centrifugal, packaged	EA	39,336.38	1,370.48
2564	Cooling tower pkg, 600 ton, galv stl, centrifugal, packaged	EA	41,400.97	841.30
2568	Cooling tower pkg, 650 ton, galv stl, centrifugal, packaged	EA	45,952.23	1,487.36
2572	Cooling tower pkg, 700 ton, galv stl, centrifugal, packaged	EA	53,458.41	1,593.65
2576	Cooling tower pkg, 750 ton, galv stl, centrifugal, packaged	EA	57,325.37	1,668.03
2580	Cooling tower pkg, 800 ton, galv stl, centrifugal, packaged	EA	61,835.74	1,346.89
2584	Cooling tower pkg, 850 ton, galv stl, centrifugal, packaged	EA	65,500.77	1,639.19
2588	Cooling tower pkg, 900 ton, galv stl, centrifugal, packaged	EA	69,199.00	1,880.32
2592	Cooling tower pkg, 950 ton, galv stl, centrifugal, packaged	EA	73,016.24	1,897.15
2596	Cooling tower pkg, 1000 ton, galv stl, centrifugal, packaged	EA	74,663.65	1,414.21
15730 3000 Fiberglass Packaged Cooling Tower				
Note: Including Pumps, Piping, And Mtor. Note: Does Not Include Mtor Starter. (Rated By Cooling Capacity In Tons) Based On Design Water Temperature 95 Deg F In, 85 Deg F Out 78 Deg F Wb. 3 Gpm/Ton				
3001	10 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	6,275.75	
3002	20 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	7,620.13	
3003	30 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	9,326.89	
3004	40 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	10,418.69	
3005	50 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	12,533.36	
3006	75 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	16,739.17	
3007	100 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	20,722.54	
3008	120 Ton Prop Type Cooling Tower Fiberglass w/Pump, 20' Pipe&Mtor	EA	22,615.33	
15731 0010 Ductwork				
Note: Ductwork Poundage Should Include All Straps, Hangers And Supports. Fastners Are Included.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15731 0020 Fabricated rectangular				
15731 0099 Aluminum				
0100	Duct, fab rect, under 1000 LB, incl ftg, al, alloy 3003-h14	LB	15.32	5.11
0160	Duct, fab rect, over 1000 LB, incl ftngs, al, alloy 3003-h14	LB	7.63	1.81
15731 0499 Galvanized steel				
0500	Duct, fab rect, under 1000 lb, incl ftg, jt, sprt, galv stl	LB	6.45	1.60
0560	Duct, fab rect, Over 1000 LB, incl ftg, galv stl	LB	3.78	0.96
0581	Duct, fab rect, incl ftg, galv, mdm pressure	LB	4.00	0.89
0582	Duct, fab rect, incl ftg, galv, high pressure	LB	5.46	1.35
15731 0999 Stainless steel, type 304				
1000	Duct, fab rect, under 1000 LB, incl ftg, sst, type 304	LB	9.59	2.38
1060	Duct, fab rect, over 1000 LB, incl ftngs, sst, type 304	LB	5.68	1.07
15731 1070 Stainless steel				
1074	Duct, sst material, 16 ga	SF	22.08	3.58
1075	Duct, sst material, 14 ga	SF	24.98	4.33
1076	Duct, sst material, 12 ga	SF	30.66	5.22
1078	Duct, sst material, 10 ga	SF	36.38	6.07
15731 1300 Flexible, duct coated fiberglass fabric				
15731 1899 Insulated, 1" thick with 3/4 lb, PE jacket				
1900	Duct, flex, polthn jkt, 3" dia, ctd fbgl fabric, insul, 1"thk,	LF	2.97	0.38
1910	Duct, flex, polthn jkt, 4" dia, ctd fbgl fabric, insul, 1"thk,	LF	3.15	0.38
1920	Duct, flex, polthn jkt, 5" dia, ctd fbgl fabric, insul, 1"thk,	LF	3.62	0.76
1940	Duct, flex, polthn jkt, 6" dia, ctd fbgl fabric, insul, 1"thk,	LF	4.09	0.76
1960	Duct, flex, polthn jkt, 7" dia, ctd fbgl fabric, insul, 1"thk,	LF	4.90	0.79
1980	Duct, flex, polthn jkt, 8" dia, ctd fbgl fabric, insul, 1"thk,	LF	5.51	1.17
1990	Duct, flex, polthn jkt, 9" dia, ctd fbgl fabric, insul, 1"thk,	LF	5.86	1.04
2020	Duct, flex, polthn jkt, 10"dia, ctd fbgl fabric, insul, 1"thk,	LF	7.13	1.21
2040	Duct, flex, polthn jkt, 12"dia, ctd fbgl fabric, insul, 1"thk,	LF	9.23	1.80
2060	Duct, flex, polthn jkt, 14"dia, ctd fbgl fabric, insul, 1"thk,	LF	11.39	1.66
2070	Duct, flex, polthn jkt, 16"dia, ctd fbgl fabric, insul, 1"thk,	LF	12.84	1.90
2100	Duct, flex, polthn jkt, 18"dia, ctd fbgl fabric, insul, 1"thk,	LF	19.01	3.00
15731 5400 Spiral preformed, steel, galvanized Slip Joint				
15731 5400 Straight lengths				
5410	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 4" dia	LF	2.64	0.62
5420	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 6" dia	LF	3.57	0.90
5425	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 7" dia	LF	4.17	1.10
5430	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 8" dia	LF	4.85	1.28
5435	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 9"dia.	LF	4.88	1.11
5440	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 10" dia	LF	6.04	1.52
5450	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 12" dia	LF	7.80	2.01
5460	Duct, spiral preformed, 26 ga, stl, galv, straight lgs, 14" dia	LF	10.60	0.83
5480	Duct, spiral preformed, 24 ga, stl, galv, straight lgs, 16" dia	LF	14.69	0.93
5490	Duct, spiral preformed, 24 ga, stl, galv, straight lgs, 18" dia	LF	17.13	1.24
5500	Duct, spiral preformed, 24 ga, stl, galv, straight lgs, 20" dia	LF	19.88	1.31
5510	Duct, spiral preformed, 24 ga, stl, galv, straight lgs, 22" dia	LF	20.97	1.56
5520	Duct, spiral preformed, 24 ga, stl, galv, straight lgs, 24" dia	LF	23.66	1.95
15731 5799 Connector				
5800	Duct, spiral preformed, stl, galv, connector, 4" dia	EA	7.58	1.35
5820	Duct, spiral preformed, stl, galv, connector, 6" dia	EA	8.63	1.59
5840	Duct, spiral preformed, stl, galv, connector, 8" dia	EA	10.13	1.97
5850	Duct, spiral preformed, stl, galv, connector, 9" dia	EA	10.07	1.73
5860	Duct, spiral preformed, stl, galv, connector, 10" dia	EA	12.70	2.59
5880	Duct, spiral preformed, stl, galv, connector, 12" dia	EA	16.82	3.59
5900	Duct, spiral preformed, stl, galv, connector, 14" dia	EA	19.28	4.15
5920	Duct, spiral preformed, stl, galv, connector, 16" dia	EA	21.36	4.63
5930	Duct, spiral preformed, stl, galv, connector, 18" dia	EA	23.38	5.22
5940	Duct, spiral preformed, stl, galv, connector, 20" dia	EA	25.38	5.77
5950	Duct, spiral preformed, stl, galv, connector, 22" dia	EA	26.95	12.37
5960	Duct, spiral preformed, stl, galv, connector, 24" dia	EA	30.45	14.10
15731 6299 Elbow, 45_				
6300	Duct, spiral preformed, stl, galv, elbow, 45 deg, 4" dia	EA	11.52	1.24
6320	Duct, spiral preformed, stl, galv, elbow, 45 deg, 6" dia	EA	15.80	1.93
6340	Duct, spiral preformed, stl, galv, elbow, 45 deg, 8" dia	EA	24.02	2.87

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6350	Duct, spiral preformed, stl, galv, elbow, 45 deg, 9" dia	EA	26.08	3.11
6360	Duct, spiral preformed, stl, galv, elbow, 45 deg, 10" dia	EA	37.21	4.49
6380	Duct, spiral preformed, stl, galv, elbow, 45 deg, 12" dia	EA	50.96	6.49
6400	Duct, spiral preformed, stl, galv, elbow, 45 deg, 14" dia	EA	66.04	8.33
6420	Duct, spiral preformed, stl, galv, elbow, 45 deg, 16" dia	EA	81.19	10.60
6430	Duct, spiral preformed, stl, galv, elbow, 45 deg, 18" dia	EA	95.38	12.95
6440	Duct, spiral preformed, stl, galv, elbow, 45 deg, 20" dia	EA	101.00	14.06
6450	Duct, spiral preformed, stl, galv, elbow, 45 deg, 22" dia	EA	105.68	14.84
6460	Duct, spiral preformed, stl, galv, elbow, 45 deg, 24" dia	EA	124.91	18.42
15731 6599 Elbow, 90_				
6600	Duct, spiral preformed, stl, galv, elbow, 90 deg, 4" dia	EA	13.16	2.52
6610	Duct, spiral preformed, stl, galv, elbow, 90 deg, 5" dia	EA	15.18	2.90
6620	Duct, spiral preformed, stl, galv, elbow, 90 deg, 6" dia	EA	17.76	2.83
6625	Duct, spiral preformed, stl, galv, elbow, 90 deg, 7" dia	EA	21.14	3.21
6630	Duct, spiral preformed, stl, galv, elbow, 90 deg, 8" dia	EA	26.11	4.01
6635	Duct, spiral preformed, stl, galv, elbow, 90 deg, 9" dia.	EA	28.43	3.94
6640	Duct, spiral preformed, stl, galv, elbow, 90 deg, 10" dia	EA	39.82	5.22
6650	Duct, spiral preformed, stl, galv, elbow, 90 deg, 12" dia	EA	54.57	6.39
6660	Duct, spiral preformed, stl, galv, elbow, 90 deg, 14" dia	EA	72.82	7.05
6670	Duct, spiral preformed, stl, galv, elbow, 90 deg, 16" dia	EA	90.88	8.57
6676	Duct, spiral preformed, stl, galv, elbow, 90 deg, 18" dia	EA	104.14	10.40
6680	Duct, spiral preformed, stl, galv, elbow, 90 deg, 20" dia	EA	122.70	12.53
6684	Duct, spiral preformed, stl, galv, elbow, 90 deg, 22" dia	EA	127.38	13.10
6690	Duct, spiral preformed, stl, galv, elbow, 90 deg, 24" dia	EA	178.83	17.85
15731 6720 End cap				
6722	Duct, spiral preformed, stl, galv, end cap, 4"	EA	9.54	1.28
6723	Duct, spiral preformed, stl, galv, end cap, 6"	EA	12.15	1.45
6724	Duct, spiral preformed, stl, galv, end cap, 8"	EA	14.55	1.55
6725	Duct, spiral preformed, stl, galv, end cap, 9"	EA	15.27	1.38
6726	Duct, spiral preformed, stl, galv, end cap, 10"	EA	18.39	1.80
6727	Duct, spiral preformed, stl, galv, end cap, 12"	EA	21.45	1.97
6728	Duct, spiral preformed, stl, galv, end cap, 14"	EA	29.11	2.76
6729	Duct, spiral preformed, stl, galv, end cap, 16"	EA	37.64	3.11
6730	Duct, spiral preformed, stl, galv, end cap, 18"	EA	43.91	3.46
6731	Duct, spiral preformed, stl, galv, end cap, 20"	EA	50.05	3.70
6732	Duct, spiral preformed, stl, galv, end cap, 22"	EA	56.38	5.08
6733	Duct, spiral preformed, stl, galv, end cap, 24"	EA	63.58	4.56
15731 6799 Reducing coupling				
6800	Duct, spiral preformed, stl, galv, reducing cplg, 6" x 4"	EA	17.91	3.01
6820	Duct, spiral preformed, stl, galv, reducing cplg, 8" x 6"	EA	21.04	3.35
6840	Duct, spiral preformed, stl, galv, reducing cplg, 10" x 8"	EA	26.42	4.42
6860	Duct, spiral preformed, stl, galv, reducing cplg, 12" x 10"	EA	36.09	6.46
6880	Duct, spiral preformed, stl, galv, reducing cplg, 14" x 12"	EA	49.20	8.88
6900	Duct, spiral preformed, stl, galv, reducing cplg, 16" x 14"	EA	62.08	9.74
6920	Duct, spiral preformed, stl, galv, reducing cplg, 18" x 16"	EA	73.47	12.26
6940	Duct, spiral preformed, stl, galv, reducing cplg, 20" x 18"	EA	82.92	14.59
6950	Duct, spiral preformed, stl, galv, reducing cplg, 22" x 20"	EA	84.46	15.19
6960	Duct, spiral preformed, stl, galv, reducing cplg, 24" x 22"	EA	102.26	19.17
15731 9650 Lateral 45_, reducing				
9654	Duct, spiral preformed, 6"x6"x4", stl, galv, lateral 45	EA	37.23	3.80
9658	Duct, spiral preformed, 8"x8"x4", stl, galv, lateral 45	EA	52.93	6.91
9662	Duct, spiral preformed, 10"x10"x4", stl, galv, lateral 45	EA	77.42	10.85
9666	Duct, spiral preformed, 12"x12"x4", stl, galv, lateral 45	EA	97.78	14.75
9670	Duct, spiral preformed, 14"x14"x4", stl, galv, lateral 45	EA	139.15	22.59
9674	Duct, spiral preformed, 16"x16"x4", stl, galv, lateral 45	EA	157.73	26.29
9678	Duct, spiral preformed, 18"x18"x4", stl, galv, lateral 45	EA	209.83	36.76
9682	Duct, spiral preformed, 20"x20"x4", stl, galv, lateral 45	EA	248.45	45.12
9686	Duct, spiral preformed, 22"x22"x4", stl, galv, lateral 45	EA	276.26	48.77
9690	Duct, spiral preformed, 24"x24"x4", stl, galv, lateral 45	EA	305.05	54.77
15733 0010 Fans				
15733 0500 Axial flow, constant speed				
15733 0505 Direct drive				
0510	Fan, axial flow, 1060 CFM 1/6 HP, 1/8" st pr, 12", const sp,	EA	541.63	81.36
0514	Fan, axial flow, 2095 CFM 1/2 HP, 1/8" st pr, 12", const sp,	EA	571.05	82.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0518	Fan, axial flow, 2490 CFM 1/3 HP, 1/8" st pr, 16", const sp,	EA	612.49	79.91
0522	Fan, axial flow, 4130 CFM 3/4 HP, 1/8" st pr, 20", const sp,	EA	747.02	90.29
0526	Fan, axial flow, 4700 CFM 3/4 HP, 1/8" st pr, 24", const sp,	EA	799.08	99.35
0530	Fan, axial flow, 5850 CFM 1 HP, 1/8" st pr, 24", const sp, dir	EA	881.08	102.97
0534	Fan, axial flow, 7925 CFM 1-1/2 HP, 1/8" st pr, 24", const sp,	EA	898.30	109.22
0538	Fan, axial flow, 10604 CFM 1 HP, 1/8" st pr, 30", const sp,	EA	1,422.61	159.22
0540	30"Dir Dr Axial Flow Fan, 2-1/2HP 14765 CFM Constant Speed, 1/8" S	EA	1,564.51	182.58
0548	36" Dir Dr Axial Flow Fan, 2 HP 16780 CFM Constant Speed, 1/8" SP	EA	1,771.27	194.16
0550	Fan, axial flow, 22920 CFM 5 HP, 1/8" st pr, 36", const sp,	EA	1,940.97	208.47
15733 0560 Belt drive				
0562	Fan, axial flow, 2800 CFM 1/3 HP, 1/8" st pr, 15", const sp,	EA	730.89	84.98
0564	Fan, axial flow, 3400 CFM 1/2 HP, 1/8" st pr, 15", const sp,	EA	781.57	87.89
0568	Fan, axial flow, 3280 CFM 1/3 HP, 1/8" st pr, 18", const sp,	EA	807.73	90.71
0572	Fan, axial flow, 3900 CFM 1/2 HP, 1/8" st pr, 18", const sp,	EA	839.42	91.68
0576	Fan, axial flow, 5250 CFM 1 HP, 1/8" st pr, 18", const sp, belt	EA	904.64	88.94
0582	24"Belt Dr Axial Flow Fan, 1/2 HP 4800 CFM Constant Speed, 1/8" SP	EA	1,140.40	111.39
0584	Fan, axial flow, 6430 CFM 1 HP, 1/8" st pr, 24", const sp, belt	EA	1,079.71	94.98
0588	Fan, axial flow, 8860 CFM 2 HP, 1/8" st pr, 24", const sp, belt	EA	1,148.43	86.78
0592	Fan, axial flow, 9250 CFM 1 HP, 1/8" st pr, 30", const sp, belt	EA	1,311.13	92.13
0596	Fan, axial flow, 16900 CFM 5 HP, 1/8" st pr, 30", const sp,	EA	1,430.98	103.14
0602	36"Belt Dr Axial Flow Fan, 3/4 HP 8090 CFM Constant Speed, 1/8" SP	EA	2,042.32	159.31
0604	Fan, axial flow, 14475 CFM 2 HP, 1/8" st pr, 36", const sp,	EA	1,446.24	115.02
0608	Fan, axial flow, 20080 CFM 5 HP, 1/8" st pr, 36", const sp,	EA	1,604.82	104.15
0612	Fan, axial flow, 14475 CFM 7.5HP, 1/8" st pr, 36", const	EA	1,735.67	115.29
0616	Fan, axial flow, 29000 CFM 7.5HP, 1/8" st pr, 42", const	EA	2,133.83	133.98
15733 1000 Return air fan				
1010	Fan, return air, in-line booster, 9200 CFM	EA	3,619.90	
1020	Fan, return air, in-line booster, 13200 CFM	EA	5,016.23	
1030	Fan, return air, in-line booster, 16500 CFM	EA	6,181.26	
1040	Fan, return air, in-line booster, 19500 CFM	EA	7,315.64	
15733 3000 Ceiling fan - paddle blade air circulator				
3312	Fan, paddle blade circ, 5500CFM 3 sp switch, indl, rvsbl, 4	EA	252.09	69.46
3314	Fan, paddle blade circ, 7600CFM 3 sp switch, indl, rvsbl, 4	EA	262.33	69.46
3316	Fan, paddle blade circ, 21015CFM 3 sp switch, indl,	EA	331.81	86.82
3322	Fan, paddle blade circ, 21000 CFM 3 sp switch, waterproof, 3	EA	350.77	86.82
3340	Fan, paddle blade, for adj speed control, single fan	EA	44.79	12.85
15733 3620 Backward inclined, V-belt driven				
15733 3622 12-1/4" diameter wheel				
3626	Fan, cntfagl, back incln, 1/4 HP, 1430 CFM belt dr, 1/2" press,	EA	769.38	54.73
3628	Fan, cntfagl, back incln, 1/3 HP, 1630 CFM belt dr, 1/2" press,	EA	792.53	48.62
3630	Fan, cntfagl, back incln, 1/2 HP, 1793 CFM belt dr, 1/2" press,	EA	851.60	61.33
3632	Fan, cntfagl, back incln, 3/4 HP, 2300 CFM belt dr, 1/2" press,	EA	921.91	68.69
3634	Fan, cntfagl, back incln, 1 HP, 2600 CFM belt dr, 1/2" press, 12.25"	EA	1,073.89	80.18
3636	Fan, cntfagl, back incln, 1.5 HP, 3050 CFM belt dr, 1/2" press,	EA	1,172.60	90.39
15733 3640 15" diameter wheel				
3644	1/3HP Centrifugal Fan, 15" Wheel 1258-4146 CFM @ 1/8"Static Press	EA	1,068.55	74.73
3646	Fan, cntfagl, back incln, 1/2 HP, 2450 CFM belt dr, 1/2" press, 15"	EA	985.15	68.80
3648	Fan, cntfagl, back incln, 3/4 HP, 3070 CFM belt dr, 1/2" press, 15"	EA	1,054.90	76.71
3650	Fan, cntfagl, back incln, 1 HP, 3550 CFM belt dr, 1/2" press, 15" dia	EA	1,206.88	88.73
3652	Fan, cntfagl, back incln, 1.5 HP, 4100 CFM belt dr, 1/2" press, 15"	EA	1,299.93	98.66
3654	Fan, cntfagl, back incln, 2 HP, 4600 CFM belt dr, 1/2" press, 15" dia	EA	1,398.15	108.38
15733 3660 18-1/4" diameter wheel				
3666	Fan, cntfagl, back incln, 1/2 HP, 3040 CFM belt dr, 1/2" press,	EA	1,081.92	70.60
3668	Fan, cntfagl, back incln, 3/4 HP, 3780 CFM belt dr, 1/2" press,	EA	1,157.90	79.52
3670	Fan, cntfagl, back incln, 1 HP, 4250 CFM belt dr, 1/2" press, 18.25"	EA	1,303.65	90.81
3672	Fan, cntfagl, back incln, 1.5 HP, 4940 CFM belt dr, 1/2" press,	EA	1,402.92	101.47
3674	Fan, cntfagl, back incln, 2 HP, 5650 CFM belt dr, 1/2" press, 18.25"	EA	1,476.81	110.33
3676	Fan, cntfagl, back incln, 3 HP, 6500 CFM belt dr, 1/2" press, 18.25"	EA	1,519.37	139.43
3677	1/4HP Centrifugal Fan, 18-1/4"Whl 2193-6498 CFM @ 1/8"Static Pres	EA	1,248.30	77.62
3678	1/3HP Centrifugal Fan, 18-1/4"Whl 2193-6498 CFM @ 1/8"Static Pres	EA	1,273.36	82.78
15733 3680 22-1/4" diameter wheel				
3688	Fan, cntfagl, back incln, 3/4 HP, 4700 CFM belt dr, 1/2" press,	EA	1,382.00	89.25
3690	Fan, cntfagl, back incln, 1 HP, 5380 CFM belt dr, 1/2" press, 22.25"	EA	1,522.09	99.84

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3692	Fan, cntfagl, back incln, 1.5 HP, 6500 CFM belt dr, 1/2" press,	EA	1,620.79	116.30
3694	Fan, cntfagl, back incln, 2 HP, 7350 CFM belt dr, 1/2" press, 22.25"	EA	1,694.69	127.52
3696	Fan, cntfagl, back incln, 3 HP, 8600 CFM belt dr, 1/2" press, 22.25"	EA	1,773.46	145.16
3697	1/4HP Centrifugal Fan, 22-1/4"Whl 2265-8483 CFM @ 1/8"Static Pres	EA	1,526.72	86.45
3698	1/3HP Centrifugal Fan, 22-1/4"Whl 2265-8483 CFM @ 1/8"Static Pres	EA	1,548.38	93.06
3699	1/2HP Centrifugal Fan, 22-1/4"Whl 2265-8483 CFM @ 1/8"Static Pres	EA	1,583.92	97.93
15733 3700 27" diameter wheel				
3708	Fan, cntfagl, back incln, 1 HP, 6280 CFM belt dr, 1/2" press, 27" dia	EA	2,163.83	128.39
3710	Fan, cntfagl, back incln, 1.5 HP, 7600 CFM belt dr, 1/2" press, 27"	EA	2,262.53	146.41
3712	Fan, cntfagl, back incln, 2 HP, 8500 CFM belt dr, 1/2" press, 27" dia	EA	2,336.99	160.51
3714	Fan, cntfagl, back incln, 3 HP, 10100 CFM belt dr, 1/2" press, 27" dia	EA	2,373.32	176.52
3716	Fan, cntfagl, back incln, 5 HP, 12500 CFM belt dr, 1/2" press, 27" dia	EA	2,417.59	201.03
15733 3720 30" diameter wheel				
3722	1/2HP Centrifugal Fan, 30" Wheel 4926-17456CFM @ 1/8"Static Press	EA	2,904.45	123.25
3724	3/4HP Centrifugal Fan, 30" Wheel 4926-17456CFM @ 1/8"Static Press	EA	2,949.37	132.08
3726	Fan, cntfagl, back incln, 1 HP, 7100 CFM belt dr, 1/2" press, 30" dia	EA	2,436.03	117.90
3728	Fan, cntfagl, back incln, 1.5 HP, 8350 CFM belt dr, 1/2" press, 30"	EA	2,529.07	130.23
3730	Fan, cntfagl, back incln, 2 HP, 9700 CFM belt dr, 1/2" press, 30" dia	EA	2,597.31	149.99
3732	Fan, cntfagl, back incln, 3 HP, 11400 CFM belt dr, 1/2" press, 30" dia	EA	2,633.64	165.37
3734	Fan, cntfagl, back incln, 5 HP, 14000 CFM belt dr, 1/2" press, 30" dia	EA	2,677.91	196.10
3736	Fan, cntfagl, back incln, 7.5 HP, 16600 CFM belt dr, 1/2" press, 30"	EA	2,819.21	231.80
15733 3740 33" diameter wheel				
3742	1/2HP Centrifugal Fan, 33" Wheel 5734-19799CFM @ 1/8"Static Press	EA	3,424.57	131.76
3744	3/4HP Centrifugal Fan, 33" Wheel 5734-19799CFM @ 1/8"Static Press	EA	3,515.84	147.90
3746	1 HP Centrifugal Fan, 33" Wheel 5734-19799CFM @ 1/8"Static Press	EA	3,601.42	160.93
3748	Fan, cntfagl, back incln, 1.5 HP, 9400 CFM belt dr, 1/2" press, 33"	EA	2,952.94	145.26
3750	Fan, cntfagl, back incln, 2 HP, 10650 CFM belt dr, 1/2" press, 33" dia	EA	3,045.51	162.11
3752	Fan, cntfagl, back incln, 3 HP, 12800 CFM belt dr, 1/2" press, 33" dia	EA	3,129.94	193.95
3754	Fan, cntfagl, back incln, 5 HP, 15700 CFM belt dr, 1/2" press, 33" dia	EA	3,168.55	218.09
3756	Fan, cntfagl, back incln, 7.5 HP, 18700 CFM belt dr, 1/2" press, 33"	EA	3,309.85	285.98
15733 3760 36" diameter wheel				
3762	1/2HP Centrifugal Fan, 36-1/2"Whl 5388-22500CFM @ 1/8"Static Pres	EA	2,782.23	148.53
3764	3/4HP Centrifugal Fan, 36-1/2"Whl 5388-22500CFM @ 1/8"Static Pres	EA	2,806.80	161.71
3766	1 HP Centrifugal Fan, 36-1/2"Whl 5388-22500CFM @ 1/8"Static Press	EA	2,852.86	186.50
3768	1-1/2HP Centrifugal Fan, 36-1/2"D 5388-22500CFM @ 1/8"Static Press	EA	2,904.40	207.58
3770	2 HP Centrifugal Fan, 36-1/2"Whl 5388-22500CFM @ 1/8"Static Press	EA	3,282.38	249.64
3772	3 HP Centrifugal Fan, 36-1/2"Whl 5388-22500CFM @ 1/8"Static Press	EA	3,406.65	288.91
3774	Fan, cntfagl, back incln, 5 HP, 17025 CFM belt dr, 1/2" press, 36.5" di	EA	4,423.16	284.03
3776	Fan, cntfagl, back incln, 7.5 HP, 19825 CFM belt dr, 1/2" press,	EA	4,602.38	306.82
15733 3800 20 In Dia. Wheel 2412 To 7364 Cfm At 1/8 In Static Pressure				
3802	1/4HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,272.22	83.98
3804	1/3HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,310.50	88.01
3806	1/2HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,353.81	94.68
3808	3/4HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,394.07	99.62
3810	1-1/2HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Pres	EA	1,588.63	114.88
3812	1 HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,471.96	108.31
3814	2 HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,660.49	126.53
3816	3 HP Centrifugal Fan, 20" Wheel 2412-7364 CFM @ 1/8"Static Press	EA	1,739.28	135.54
15733 3820 24-1/2 In Dia. Wheel 3055 To 11380 Cfm At 1/8 In Static Pressure				
3822	1/4HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Pres	EA	1,878.39	94.05
3824	1/2HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Pres	EA	1,924.26	107.64
3826	3/4HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Pres	EA	1,979.86	114.28
3828	1 HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Press	EA	2,032.25	125.90
3830	1-1/2HP Centrifugal Fan, 24-1/2"D 3055-11380CFM @ 1/8"Static Pres	EA	2,080.05	134.90
3832	2 HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Press	EA	2,110.32	151.61
3834	3 HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Press	EA	2,165.87	165.06
3836	5 HP Centrifugal Fan, 24-1/2"Whl 3055-11380CFM @ 1/8"Static Press	EA	2,304.86	190.21
15733 4000 13-1/2 In Dia. Wheel 734 To 3343 Cfm At 1/8 In Static Pressure				
4002	1/4HP Centrifugal Fan, 13-1/2"Whl 734-3343 CFM @ 1/8" Static Pres	EA	1,057.81	68.76
4004	1/3HP Centrifugal Fan, 13-1/2"Whl 734-3343 CFM @ 1/8" Static Pres	EA	1,075.04	71.37
4006	1/2HP Centrifugal Fan, 13-1/2"Whl 734-3343 CFM @ 1/8" Static Pres	EA	1,107.82	75.72
4008	3/4HP Centrifugal Fan, 13-1/2"Whl 734-3343 CFM @ 1/8" Static Pres	EA	1,126.10	78.93
4010	1 HP Centrifugal Fan, 13-1/2"Whl 734-3343 CFM @ 1/8" Static Press	EA	1,160.70	84.16
4012	1-1/2HP Centrifugal Fan, 13-1/2"D 734-3343 CFM @ 1/8" Static Pres	EA	1,196.91	88.22

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4014	1/4HP Centrifugal Fan, 15" Wheel 1258-4146 CFM @ 1/8" Static Press	EA	1,048.35	70.38
15733 4050	16-1/2 In Dia. Wheel 977 To 4711 Cfm At 1/8 In Static Pressure			
4052	1/4HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,225.54	75.54
4054	1/3HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,269.09	78.72
4056	1/2HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,314.84	83.91
4058	3/4HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,337.30	87.97
4060	1 HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,364.79	94.68
4062	1-1/2HP Centrifugal Fan, 16-1/2" D 977-4711 CFM @ 1/8" Static Press	EA	1,389.24	99.62
4064	2 HP Centrifugal Fan, 16-1/2" Whl 977-4711 CFM @ 1/8" Static Press	EA	1,546.31	108.17
15733 4500	Corrosive fume resistant, plastic			
5020	Fan, motor, cntfagl, V belt, 1200CFM 1/4HP, crsv fume res	EA	2,465.94	
5021	Fan, ep motor, cntfagl, V belt, 1200CFM 1/4HP, crsv fume res	EA	2,818.47	
5100	Fan, motor, cntfagl, V belt, 6500CFM 1 HP, crsv fume res	EA	3,578.77	
5101	Fan, ep motor, cntfagl, V belt, 6500CFM 1 HP, crsv fume res	EA	4,063.49	
15733 5300	Fume exhauster			
5310	Fume exhauster w/o hose & intake nozzle, 630 CFM 1-1/2 HP	EA	1,010.51	
5320	Fume exhauster, hose extension kit 5'	EA	75.19	
15733 6000	Propeller exhaust, wall shutter			
15733 6020	Direct drive, two speed			
6178	16" Prop Exhaust Fan, Direct Drive 2353 CFM 1/3 HP, w/Wall Shutte	EA	446.70	49.20
6180	Fan, prop exhaust, 3275 CFM 1/2HP, wall shtr, 1/4" st pr,	EA	529.49	51.92
6182	21" Prop Exhaust Fan, Direct Drive 4740 CFM 3/4 HP, w/Wall Shutte	EA	622.72	58.48
15733 6300	V-belt drive, 3 phase			
6302	Fan, prop exhaust, 1/2HP, 24", wall shtr, 1/4" st pr, V-belt	EA	723.43	49.14
6304	Fan, prop exhaust, 3/4HP, 30", wall shtr, 1/4" st pr, V-belt	EA	917.05	63.76
6306	Fan, prop exhaust, 1HP, 36", wall shtr, 1/4" st pr, V-belt	EA	1,083.08	80.70
6308	Fan, prop exhaust, 1.5HP, 42", wall shtr, 1/4" st pr, V-belt	EA	1,278.79	83.62
6310	Fan, prop exhaust, 1.5HP, 48", wall shtr, 1/4" st pr, V-belt	EA	1,460.29	108.97
6312	Fan, prop exhaust, 2HP, 54", wall shtr, 1/4" st pr, V-belt	EA	2,051.14	168.43
6314	Fan, prop exhaust, 3HP, 60", wall shtr, 1/4" st pr, V-belt	EA	2,524.68	223.75
15733 6650	Residential			
15733 6650	Bath exhaust			
6660	Fan, resi, bath exhaust, grille, back draft damper, 50 CFM	EA	44.92	12.22
6672	Fan, resi, bath exhaust, grille, back draft damper, 180 CFM	EA	131.67	15.25
6673	Fan, resi, bath exhaust, grille, back draft damper, 210 CFM	EA	166.03	15.25
6674	Fan, resi, bath exhaust, grille, back draft damper, 260 CFM	EA	185.45	15.25
6675	Fan, resi, bath exhaust, grille, back draft damper, 300 CFM	EA	234.75	15.25
6680	Fan, resi, 70 CFM bath exhaust, lt comb, squirrel cage, 100 watt	EA	97.92	13.82
6710	Fan, resi, 1450 watt, lt/heater comb, clg mtd, 70 CFM bath	EA	114.11	13.82
6840	Fan, resi, 170CFM grille, draft damper, wall mount, bath exhaus	EA	178.71	15.25
6846	Fan, resi, ceiling mount, 180CFM grille, draft damper, bath	EA	167.39	15.25
6848	Bathroom Exh Fan Timer Switch	EA	68.75	8.48
15733 6850	Removal & Reinstallation Of Ceiling Exhaust Fan			
	Note: Includes Storage And Cleaning			
15733 6850	5 Blade Ceiling Fan			
6851	Remove & Reinstall Ceiling Exhaust Fan	EA	26.49	
15733 6899	Kitchen exhaust			
6900	Fan, resi, kitchen exhaust, grille, complete, 160 CFM	EA	101.46	15.80
6910	Fan, resi, kitchen exhaust, grille, complete, 180 CFM	EA	95.85	15.00
6930	Fan, resi, kitchen exhaust, grille, complete, 350 CFM	EA	126.94	13.89
15733 6940	Residential roof jacks and wall caps			
6946	Fan, resi wall cap w/back draft damp, 3 & 4" dia duct	EA	41.57	13.73
6960	Fan, w/bird screen & back draft damp, 3" & 4" dia duct, resi	EA	41.02	10.02
15733 7000	Roof exhauster, centrifugal, aluminum housing			
15733 7099	Direct drive			
7100	Fan, roof exhauster, 320 CFM curb, bird scr, dnpr, cntfagl, al	EA	383.20	54.11
7360	Fan, roof exhauster, cntfagl, al housing, for belt dr, top disch, add		42.60	
7120	Fan, roof exhauster, 600 CFM curb, bird scr, dnpr, cntfagl, al	EA	427.89	37.37
7360	Fan, roof exhauster, cntfagl, al housing, for belt dr, top disch, add		46.82	
7140	Fan, roof exhauster, 815 CFM curb, bird scr, dnpr, cntfagl, al	EA	585.69	46.88
7360	Fan, roof exhauster, cntfagl, al housing, for belt dr, top disch, add		67.02	
7160	Fan, roof exhauster, 1450 CFM curb, bird scr, dnpr, cntfagl, al	EA	624.39	55.84

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		68.85	
7180	Fan, roof exhauster, 2050 CFM curb, bird scr, dmpr, cntfgl, al	EA	687.74	128.70
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		77.12	
15733 7199 V-belt drive				
7200	Fan, roof exhauster, 1650 CFM curb, bird scr, dmpr, cntfgl, al	EA	931.80	86.58
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		122.41	
7220	Fan, roof exhauster, 2750 CFM curb, bird scr, dmpr, cntfgl, al	EA	1,182.44	110.64
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		156.53	
7240	Fan, roof exhauster, 4910 CFM curb, bird scr, dmpr, cntfgl, al	EA	1,572.56	136.20
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		209.84	
7260	Fan, roof exhauster, 8525 CFM curb, bird scr, dmpr, cntfgl, al	EA	1,754.93	122.41
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		228.51	
7280	Fan, roof exhauster, 13760 CFM curb, bird scr, dmpr, cntfgl, al	EA	2,670.31	141.23
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		348.46	
7300	Fan, roof exhauster, 20558 CFM curb, bird scr, dmpr, cntfgl, al	EA	4,146.56	216.63
7360	Fan, roof exhauster, cntfgl, al housing, for belt dr, top disch, add		517.80	
15733 7400 Roof mounted kitchen exhaust, al, centrifugal -Wheel Aluminum Housing And Wheel				
15733 7410 Direct drive				
7412	Roof mtd kitchen exh, 1/12HP, 9.75", ddr, 2 sp, to 200f, al,	EA	466.29	41.81
7414	Roof mtd kitchen exh, 1/3HP, 12-5/8", ddr, 2 sp, to 200F, al,	EA	566.09	39.17
7416	Roof mtd kitchen exh, 1/2HP, 12.5", ddr, 2 sp, to 200F, al,	EA	631.19	29.00
7418	Roof mtd kitchen exh, 3/4HP, 15", ddr, 2 sp, to 200F, al, cntfgl	EA	875.45	42.40
15733 7424 Belt drive				
7426	Roof mtd kitchen exh, 3/4HP, 20", belt drive, to 200F, al, cntfgl	EA	1,759.89	78.87
7428	Roof mtd kitchen exh, 1-1/2HP, 24.5", belt drive, to 200F, al,	EA	1,966.43	95.43
7430	Roof mtd kitchen exh, 1-1/2HP, 30", belt drive, to 200F, al,	EA	2,541.62	115.33
15733 7460 Power roof vent, centrifugal, aluminum				
7470	Fan, power roof vent, cntfgl, al, bird scr, dmpr, 931 CFM	EA	617.31	88.97
15733 8000 Package Ventilation, Commercial				
15733 8002 Combined Supply/Exhaust Air Volume W Ambient Supply				
8004	3 To 7 MCFM	MF3	953.46	
8006	12 To 22 MCFM	MF3	447.29	
15733 8010 Combined Supply/Exhaust Air Volume W Tempered Supply				
8012	3 To 7 MCFM	MF3	1,527.32	
8014	12 To 22 MCFM	MF3	716.66	
15733 8020 Exhaust Hoods, Commercial				
15733 8022 Centrifugal Grease Extraction				
8024	Water Wash Type	LF	1,349.09	
8026	Non-Water Wash Type	LF	807.26	
15733 8030 Island Style Ventilator				
8032	Water Wash Type	LF	2,057.64	
8034	Non-Water Wash Type	LF	1,006.35	
15733 8500 Wall exhausters, centrifugal, auto damper Backdraft Damper 1/4 In Static Pressure				
15733 8519 Direct drive				
8520	Fan, wall exhers, 1/20 HP, 610 CFM cntfgl, auto dmpr, direct	EA	262.62	40.11
8540	Fan, wall exhers, 1/12 HP, 796 CFM cntfgl, auto dmpr, direct	EA	274.13	40.56
8560	Fan, wall exhers, 1/6 HP, 822 CFM cntfgl, auto dmpr, direct	EA	405.35	44.07
8580	Fan, wall exhers, 1/4 HP, 1320 CFM cntfgl, auto dmpr, direct	EA	409.02	44.07
8640	Fan, wall exhers, 1/2 HP, 2900 CFM cntfgl, auto dmpr, direct	EA	670.24	53.97
8670	Fan, wall exhers, 1 HP, 5940 CFM cntfgl, auto dmpr, direct	EA	863.19	60.60
15734 Accessories				
15734 4000 Trap Primer And Accessories				
15734 4100 Trap Primer				
4101	1/2" Trap Primer, Flow Through Type	EA	47.46	
4102	1/2" Trap Primer, Flow Through Type With Sediment Strainer	EA	53.32	
15734 4200 Trap Primer Distribution Unit				
4201	Two Opening Distribution Unit	EA	51.70	
4202	Three Opening Distribution Unit	EA	56.29	
4203	Four Opening Distribution Unit	EA	61.73	
15734 4300 Trap Primer Manifold				
4301	Two Outlet Manifold	EA	58.66	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4302	Four Outlet Manifold	EA	84.09	
4303	Six Outlet Manifold	EA	101.96	
4304	Eight Outlet Manifold	EA	125.82	
15740 Air filters				
Note: Labor Cost Included In The Installation Cost Of The Unit Containing The Filter				
15740 0049 Activated charcoal type, full flow				
0050	Air filters, activated charcoal type, full flow	CFM	0.68	
15740 2000 Electronic air cleaner, duct mounted				
2150	Air filters, electronic air cleaner, 400 - 1000 CFM duct	EA	592.40	
2250	Air filters, electronic air cleaner, 1400 - 2000 CFM duct	EA	782.52	
2260	Air filters, electronic air cleaner, 2000-2500 CFM	EA	856.98	
15740 2950 Mechanical media filtration units				
15740 3000 Filter, Bag Type, 90-95% Efficiency				
3000	Air fltr, mech media filtration, non-supported, hi efficiency, w/f	CFM	0.05	
3001	.75-1.25 MCFM 24 X 12 X 29 Filter, Bag Type	EA	199.32	
3002	1.5-2.5 MCFM 24 X 24 X 29 Filter, Bag Type	EA	236.17	
15740 3100 Filter, Bag Type, 80-85% Efficiency				
3101	.75-1.25 MCFM 24 X 12 X 29 Filter, Bag Type	EA	195.21	
3102	1.5-2.5 MCFM 24 X 24 X 29 Filter, Bag Type	EA	226.92	
4000	Air fltr, mech media filtration, extended surf, mdm efficiency	CFM	0.01	
4500	Air fltr, mech media filtration, permanent washable	CFM	0.06	
15740 5000 Valve Lock Shields				
5000	Air fltr, mech media filtration, renewable disposable roll	CFM	0.19	
5001	Valve Lock Cover	EA	62.86	
5500	Air fltr, mech media filtration, throwaway gl/paper media type	EA	4.64	
5610	Air fltr, mech media filtration, .15 st pr washable, 37570 CFM	EA	3,097.46	
5620	Air fltr, mech media filtration, .15 st pr washable, 46650 CFM	EA	3,301.18	
15740 5800 Filter, bag type				
5820	Air filters, bag type, .75-1.25 MCFM 90-95% eff, 24"x12"x29"	EA	192.16	
5830	Air filters, bag type, 1.5-2.5 MCFM 90-95% eff, 24"x24"x29"	EA	230.25	
5860	Air filters, bag type, .75-1.25 MCFM 80-85% eff, 24"x12"x29"	EA	188.71	
5870	Air filters, bag type, 1.5-2.5 MCFM 80-85% eff, 24"x24"x29"	EA	212.65	
15740 6000 HEPA filter complete				
15740 6020 95% DOP efficiency				
6030	Air filters, HEPA complete, 12"x12"x6", 150 CFM 95% DOP	EA	110.17	20.38
6034	Air filters, HEPA complete, 24"x12"x6", 375 CFM 95% DOP	EA	188.31	35.45
6038	Air filters, HEPA complete, 24"x18"x6", 450 CFM 95% DOP	EA	197.08	34.93
6042	Air filters, HEPA complete, 24"x24"x6", 700 CFM 95% DOP	EA	199.35	33.36
6046	Air filters, HEPA complete, 12"x12"x12", 250 CFM 95% DOP	EA	119.85	22.36
6050	Air filters, HEPA complete, 24"x12"x12", 500 CFM 95% DOP	EA	198.05	37.51
6054	Air filters, HEPA complete, 24"x18"x12", 875 CFM 95% DOP	EA	217.46	38.97
6058	Air filters, HEPA complete, 24"x24"x12", 1000 CFM 95% DOP	EA	220.74	37.36
15740 6100 99% DOP efficiency				
6110	Air filters, HEPA complete, 12"x12"x6", 150 CFM 99% DOP,	EA	129.98	23.34
6114	Air filters, HEPA complete, 24"x12"x6", 325 CFM 99% DOP,	EA	213.72	39.68
6118	Air filters, HEPA complete, 24"x18"x6", 550 CFM 99% DOP,	EA	233.30	41.33
6122	Air filters, HEPA complete, 24"x24"x6", 775 CFM 99% DOP,	EA	235.57	39.49
6126	Air filters, HEPA complete, 12"x12"x12", 250 CFM 99% DOP,	EA	138.74	16.31
6130	Air filters, HEPA complete, 24"x12"x12", 500 CFM 99% DOP,	EA	224.87	36.31
6134	Air filters, HEPA complete, 24"x18"x12", 775 CFM 99% DOP,	EA	264.99	37.92
6138	Air filters, HEPA complete, 24"x24"x12", 1100 CFM 99% DOP,	EA	269.52	38.04
15740 6500 HEPA filter housing Nominal Sizes				
6510	Air filters, 12"x12"x6", housing, 14 ga galv sh metal, HEPA	EA	528.26	38.67
6710	Housing Stainless Steel Add		817.16	
6514	Air filters, 24"x12"x6", housing, 14 ga galv sh metal, HEPA	EA	611.38	50.12
6710	Housing Stainless Steel Add		923.56	
6518	Air filters, 12"x12"x12", housing, 14 ga galv sh metal,	EA	533.25	34.22
6710	Housing Stainless Steel Add		817.16	
6522	Air filters, 14"x12"x12", housing, 14 ga galv sh metal,	EA	538.67	38.93
6710	Housing Stainless Steel Add		817.16	
6526	Air filters, 24"x18"x6", housing, 14 ga galv sh metal,	EA	673.58	53.82
6710	Housing Stainless Steel Add		1,032.22	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6530	Air filters, 24"x24"x6", housing, 14 ga galv sh metal,	EA	682.33	53.48
6710	<i>Housing Stainless Steel Add</i>		1,032.22	
6534	Air filters, 24"x48x6", housing, 14 ga galv sh metal, HEPA	EA	853.96	59.84
6710	<i>Housing Stainless Steel Add</i>		1,355.92	
6538	Air filters, 24"x72"x6", housing, 14 ga galv sh metal,	EA	1,063.02	65.71
6710	<i>Housing Stainless Steel Add</i>		1,752.04	
6542	Air filters, 24"x18"x12", housing, 14 ga galv sh metal,	EA	682.33	47.95
6710	<i>Housing Stainless Steel Add</i>		1,032.22	
6546	Air filters, 24"x24"x12", housing, 14 ga galv sh metal,	EA	692.11	47.61
6710	<i>Housing Stainless Steel Add</i>		1,032.22	
6550	Air filters, 24"x48"x12", housing, 14 ga galv sh metal,	EA	864.96	53.00
6710	<i>Housing Stainless Steel Add</i>		1,355.92	
6554	Air filters, 24"x72"x12", housing, 14 ga galv sh metal,	EA	1,075.49	57.45
6710	<i>Housing Stainless Steel Add</i>		1,752.04	
6558	Air filters, 48"x48x6", housing, 14 ga galv sh metal, HEPA	EA	1,288.46	113.30
6710	<i>Housing Stainless Steel Add</i>		2,182.14	
6562	Air filters, 48"x72"x6", housing, 14 ga galv sh metal,	EA	1,586.60	115.72
6710	<i>Housing Stainless Steel Add</i>		2,748.04	
6566	Air filters, 48"x96"x6", housing, 14 ga galv sh metal,	EA	1,760.50	105.36
6710	<i>Housing Stainless Steel Add</i>		3,060.42	
6570	Air filters, 48"x48"x12", housing, 14 ga galv sh metal,	EA	882.67	65.57
6710	<i>Housing Stainless Steel Add</i>		1,355.92	
6574	Air filters, 48"x72"x12", housing, 14 ga galv sh metal,	EA	1,097.10	66.95
6710	<i>Housing Stainless Steel Add</i>		1,752.04	
6578	Air filters, 48"x96"x12", housing, 14 ga galv sh metal,	EA	1,770.52	88.61
6710	<i>Housing Stainless Steel Add</i>		3,060.42	
6582	Air filters, 114"x72"x12", housing, 14 ga galv sh metal,	EA	2,328.32	96.72
6710	<i>Housing Stainless Steel Add</i>		4,103.94	

15747 Distribution Devices

15747 0010 Diffusers

15747 0010 Aluminum opposed blade damper

Note: Dimensions Given Are Throat Sizes.

15747 0100 Ceiling, linear

Note: Ceiling 1/2 In 3/4 In Or 1 In Slot Spacing 1 1/8 In Border

0120	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 2" W	LF	34.70	4.23
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-6.34	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-3.80	
0140	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 3" W	LF	38.89	4.67
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-7.23	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-4.34	
0160	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 4" W	LF	45.39	4.56
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-8.47	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-5.08	
0180	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 6" W	LF	54.40	4.15
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-10.48	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-6.29	
0200	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 8" W	LF	62.55	4.34
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-12.24	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-7.34	
0220	Diffusers, al, OB dnpr, clg, lin, also for sidewall, 10" W	LF	70.65	5.24
0250	<i>Diffusers, linear, al, OB dnpr, clg, for 3/4" border, deduct</i>		-13.92	
0260	<i>Diffusers, linear, al, OB dnpr, clg, for floor/sill applictn, deduct</i>		-8.35	
15747 0499 Ceiling, perforated Aluminum Construction With Damper				
0500	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 6"x6"	EA	90.91	8.56
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-7.22	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-28.88	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-21.66	
0520	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 8"x8"	EA	94.65	8.01
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-7.47	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-29.88	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-22.41	
0530	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 8"x9"	EA	95.79	7.67
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-7.44	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-29.77	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-22.33	
0540	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 10"x10"	EA	92.67	8.64

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-7.13	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-28.52	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-21.39	
0560	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 12"x12"	EA	103.36	8.79
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-7.84	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-31.37	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-23.53	
0590	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 16"x16"	EA	123.40	10.14
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-9.62	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-38.48	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-28.86	
0600	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 18"x18"	EA	134.57	11.37
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-10.47	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-41.86	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-31.40	
0610	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 20"x20"	EA	138.69	5.12
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-10.88	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-43.51	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-32.63	
0620	Diffusers, al, OB dnpr, clg, perf, 24"x24", lay-in pnl 24"x24"	EA	149.82	5.68
0700	<i>Diffusers, perf, lay-in clg pnl, OB dnpr, for steel, deduct</i>		-11.66	
0710	<i>Diffusers, perf, al, OB dnpr, for surface mount, deduct</i>		-46.63	
0730	<i>Diffusers, perf, lay-in clg pnl, al, OB dnpr, for no damper, deduct</i>		-34.97	
15747 0999	Ceiling, rectangular			
1000	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 6"throat	EA	61.03	6.36
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-4.23	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		6.35	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		12.70	
1010	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 8"throat	EA	65.45	6.47
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-4.55	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		6.83	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		13.65	
1014	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 9"throat	EA	69.18	5.99
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-4.92	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		7.38	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		14.77	
1016	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 10"throat	EA	70.88	6.25
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-5.09	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		7.64	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		15.28	
1060	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 12"throat	EA	99.63	7.74
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-7.47	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		11.21	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		22.41	
1074	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 14"throat	EA	107.55	6.24
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-8.26	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		12.39	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		24.79	
1150	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 18"throat	EA	161.70	8.79
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-12.85	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		19.27	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		38.54	
1160	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 21"throat	EA	209.21	11.97
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-17.18	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		25.77	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		51.54	
1170	Diffusers, al, OB dnpr, clg, rect, 1 to 4 way blow, 24"throat	EA	156.29	10.10
1300	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for stl constr, deduct</i>		-12.64	
1310	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for flush mount, add</i>		18.96	
1320	<i>Diffusers, 1-4 way, surf mtd, clg, al, OB dnpr, for lay-in mount, add</i>		37.91	
15747 1499	Ceiling, round, butterfly damper Surface Mount Aluminum Construction			
1500	Diffusers, al, butterfly damper, clg, round, 6" dia	EA	32.61	2.32
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-1.60	
1520	Diffusers, al, butterfly damper, clg, round, 8" dia	EA	35.67	2.47
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-1.70	
1540	Diffusers, al, butterfly damper, clg, round, 10" dia	EA	42.40	3.22
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-2.10	
1560	Diffusers, al, butterfly damper, clg, round, 12" dia	EA	52.72	3.48

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-2.78	
1580	Diffusers, al, butterfly damper, clg, round, 14" dia	EA	64.68	3.55
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-3.48	
1600	Diffusers, al, butterfly damper, clg, round, 18" dia	EA	101.05	5.65
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-6.78	
1610	Diffusers, al, butterfly damper, clg, round, 20" dia	EA	113.15	4.64
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-7.99	
1630	Diffusers, al, butterfly damper, clg, round, 24" dia	EA	141.84	4.82
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-10.44	
1640	Diffusers, al, butterfly damper, clg, round, 28" dia	EA	164.92	3.89
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-12.22	
1650	Diffusers, al, butterfly damper, clg, round, 32" dia	EA	195.19	4.68
1800	<i>Diffusers, round, clg, al, butterfl dnpr, for steel constr, deduct</i>		-14.53	
15747 1700 Ceiling, round, annular segmented damper				
1704	Diffusers, 6" dia, stl, adjust core, annul seg dnpr, clg, round	EA	86.79	6.13
1708	Diffusers, 8" dia, stl, adjust core, annul seg dnpr, clg, round	EA	103.59	6.43
1712	Diffusers, 10" dia, stl, adjust core, annul seg dnpr, clg, round	EA	122.10	7.89
1716	Diffusers, 12" dia, stl, adjust core, annul seg dnpr, clg, round	EA	149.43	8.11
1720	Diffusers, 14" dia, stl, adjust core, annul seg dnpr, clg, round	EA	181.58	8.90
1724	Diffusers, 18" dia, stl, adjust core, annul seg dnpr, clg, round	EA	247.15	10.84
1728	Diffusers, 20" dia, stl, adjust core, annul seg dnpr, clg, round	EA	286.77	11.11
1732	Diffusers, 24" dia, stl, adjust core, annul seg dnpr, clg, round	EA	422.22	12.83
1736	Diffusers, 30" dia, stl, adjust core, annul seg dnpr, clg, round	EA	467.17	9.76
1740	Diffusers, 36" dia, stl, adjust core, annul seg dnpr, clg, round	EA	581.82	12.38
4510	Diffusers, w/OB al, linear bar wall, sill or ceiling, 2"W	LF	31.99	1.50
4580	<i>Diffusers, linear bar, al, OB dnpr, for floor appl, add</i>		3.40	
15749 0010 Grilles				
15749 0710 Air supply, double deflecting, adjustable Wall Supply Grille Aluminum Construction				
0720	Grilles, aluminum adjustable, 12"x6", air supply, double	EA	36.06	2.96
0730	Grilles, aluminum adjustable, 14"x6", air supply, double	EA	36.88	2.62
0740	Grilles, aluminum adjustable, 18"x18", air supply, double	EA	46.68	3.07
0750	Grilles, aluminum adjustable, 24"x8", air supply, double	EA	60.66	3.37
0760	Grilles, aluminum adjustable, 36"x20", air supply, double	EA	150.31	4.38
15749 3949 Eggcrate, framed Egg Crate Design Aluminum Construction				
3950	Grilles, aluminum eggcrate, framed, 6" x 6" opening	EA	27.07	4.64
3954	Grilles, aluminum eggcrate, framed, 8" x 8" opening	EA	29.50	4.98
3970	Grilles, aluminum eggcrate, framed, 12" x 12" opening	EA	36.01	5.42
3980	Grilles, aluminum eggcrate, framed, 14" x 14" opening	EA	42.86	5.39
3984	Grilles, aluminum eggcrate, framed, 16" x 16" opening	EA	49.96	7.37
3990	Grilles, aluminum eggcrate, framed, 18" x 18" opening	EA	52.17	7.89
4040	Grilles, aluminum eggcrate, framed, 24" x 24" opening	EA	90.91	9.20
4044	Grilles, aluminum eggcrate, framed, 28" x 28" opening	EA	110.22	9.65
4048	Grilles, aluminum eggcrate, framed, 36" x 36" opening	EA	185.65	11.26
15749 6010 Transfer grill, vision proof, painted steel Section Painted Steel Louvers And Frame				
6020	Grilles, transfer grill, 12"x6", vision proof, painted steel	EA	35.52	4.45
6030	Grilles, transfer grill, 12"x12", vision proof, painted	EA	38.82	4.68
6040	Grilles, transfer grill, 18"x18", vision proof, painted	EA	49.90	4.75
6050	Grilles, transfer grill, 24"x24", vision proof, painted	EA	102.16	6.62
6060	Grilles, transfer grill, 30"x24", vision proof, painted	EA	131.26	9.54
15750 0010 Registers				
15750 0980 Air supply, ceiling/wall				
15750 1000 Two way deflection, adj curved face bars Deflection Radiused Frame Aluminum Construction				
1014	Registers, 6"x6", clg/wall, OB dnpr, al, air sply, adj curved face	EA	27.75	2.21
1490	<i>Register, air sply, adj curved face bars, OB dnpr, for stl, deduct</i>		-1.53	
1494	<i>Register, air sply, adj curved face bars, al, for no damper, deduct</i>		-5.04	
1040	Registers, 8"x8", clg/wall, OB dnpr, al, air sply, adj curved face	EA	35.29	2.21
1490	<i>Register, air sply, adj curved face bars, OB dnpr, for stl, deduct</i>		-2.28	
1494	<i>Register, air sply, adj curved face bars, al, for no damper, deduct</i>		-7.53	
1080	Registers, 10"x10", clg/wall, OB dnpr, al, air sply, adj curved face	EA	44.00	2.92
1490	<i>Register, air sply, adj curved face bars, OB dnpr, for stl, deduct</i>		-2.83	
1494	<i>Register, air sply, adj curved face bars, al, for no damper, deduct</i>		-9.32	
1100	Registers, 12"x6", clg/wall, OB dnpr, al, air sply, adj curved face	EA	36.94	2.47
1490	<i>Register, air sply, adj curved face bars, OB dnpr, for stl, deduct</i>		-2.12	
1494	<i>Register, air sply, adj curved face bars, al, for no damper, deduct</i>		-6.99	
1120	Registers, 12"x12", clg/wall, OB dnpr, al, air sply, adj curved face	EA	50.00	3.07

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1490	Register, air sply, adj curved face bars, OB dnpr, for stl, deduct		-3.34	
1494	Register, air sply, adj curved face bars, al, for no damper, deduct		-11.02	
1160	Registers, 14"x14", clg/wall, OB dnpr, al, air sply, adj curved face	EA	55.57	2.95
1490	Register, air sply, adj curved face bars, OB dnpr, for stl, deduct		-3.90	
1494	Register, air sply, adj curved face bars, al, for no damper, deduct		-12.85	
5021	For Units 16500 Cfm Or Less Add		7.79	
1170	Registers, 16"x16", clg/wall, OB dnpr, al, air sply, adj curved face	EA	63.21	2.77
1490	Register, air sply, adj curved face bars, OB dnpr, for stl, deduct		-4.56	
1494	Register, air sply, adj curved face bars, al, for no damper, deduct		-15.05	
5021	For Units 16500 Cfm Or Less Add		9.12	
1200	Registers, 18"x18", clg/wall, OB dnpr, al, air sply, adj curved face	EA	76.88	3.78
1490	Register, air sply, adj curved face bars, OB dnpr, for stl, deduct		-5.93	
1494	Register, air sply, adj curved face bars, al, for no damper, deduct		-19.56	
5021	For Units 16500 Cfm Or Less Add		11.86	
1280	Registers, 20"x20", clg/wall, OB dnpr, al, air sply, adj curved face	EA	89.75	3.48
1490	Register, air sply, adj curved face bars, OB dnpr, for stl, deduct		-7.22	
1494	Register, air sply, adj curved face bars, al, for no damper, deduct		-23.81	
15750 1504	Four way deflection, adjustable curved face bars Aluminum Construction Four Way Pattern Flush Frame			
1510	Registers, air sply, 6"x6", clg/wall, OB dnpr, al, 4 way	EA	29.85	2.81
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-1.83	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-1.83	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-6.05	
1514	Registers, air sply, 8"x8", clg/wall, OB dnpr, al, 4 way	EA	39.85	3.63
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-2.74	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-2.74	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-9.04	
1518	Registers, air sply, 10"x10", clg/wall, OB dnpr, al, 4 way	EA	49.65	4.64
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-3.39	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-3.39	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-11.19	
1522	Registers, air sply, 12"x6", clg/wall, OB dnpr, al, 4 way	EA	41.17	4.75
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-2.54	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-2.54	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-8.39	
1526	Registers, air sply, 12"x12", clg/wall, OB dnpr, al, 4 way	EA	56.67	5.76
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-4.01	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-4.01	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-13.22	
1530	Registers, air sply, 14"x14", clg/wall, OB dnpr, al, 4 way	EA	63.35	6.06
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-4.67	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-4.67	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-15.42	
1534	Registers, air sply, 16"x16", clg/wall, OB dnpr, al, 4 way	EA	72.33	6.92
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-5.47	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-5.47	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-18.06	
1538	Registers, air sply, 18"x18", clg/wall, OB dnpr, al, 4 way	EA	88.75	9.24
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-7.12	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-7.12	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-23.48	
1542	Registers, air sply, 22"x22", clg/wall, OB dnpr, al, 4 way	EA	116.90	9.57
1560	Register, air sply, 4-way defl, OB dnpr, al, for steel constr, deduct		-9.82	
1562	Register, air sply, 4-way defl, OB dnpr, al, for lay-in frame, deduct		-9.82	
1566	Registers, air sply, 4-way defl, OB dnpr, al, for no damper, deduct		-32.41	
15750 1980	One way deflection, adjustable face bars			
1990	Registers, air sply, 6"x6", clg/wall, OB dnpr, al, 1 way, adj	EA	27.13	1.35
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-1.56	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-1.56	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-5.15	
2020	Registers, air sply, 8"x8", clg/wall, OB dnpr, al, 1 way, adj	EA	34.88	1.50
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-2.24	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-2.24	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-7.40	
2060	Registers, air sply, 10"x10", clg/wall, OB dnpr, al, 1 way, adj	EA	42.13	2.06
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-2.64	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-2.64	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-8.71	
2080	Registers, air sply, 12"x6", clg/wall, OB dnpr, al, 1 way, adj	EA	40.14	2.24
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-2.44	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-2.44	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-8.05	
2100	Registers, air sply, 12"x12", clg/wall, OB dnpr, al, 1 way, adj	EA	48.42	2.54
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-3.18	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-3.18	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-10.49	
2160	Registers, air sply, 14"x14", clg/wall, OB dnpr, al, 1 way, adj	EA	56.08	2.54
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-3.95	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-3.95	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-13.02	
2220	Registers, air sply, 16"x16", clg/wall, OB dnpr, al, 1 way, adj	EA	66.42	2.73
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-4.88	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-4.88	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-16.11	
2280	Registers, air sply, 18"x18", clg/wall, OB dnpr, al, 1 way, adj	EA	78.66	3.29
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-6.00	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-6.00	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-19.79	
2340	Registers, air sply, 20"x20", clg/wall, OB dnpr, al, 1 way, adj	EA	92.09	2.92
2361	Registers, air sply, adj face bars, 1-way, OB dnpr, for stl, deduct		-7.34	
2362	Registers, air sply, adj face bars, OBdnpr, al, for lay-in frm deduct		-7.34	
2363	Registers, air sply, adj face bars, 1-way, al, for no dnpr, deduct		-24.22	
15750 4980 Air return, ceiling/wall				
Note: Deflection W Opposed Blade Damper Aluminum Construction Wall Or Ceiling Munt				
15750 5010 45 degree fixed blade damper				
Note: W Opposed Blade Damper Aluminum Construction Wall Or Ceiling Munt				
5020	Registers, air rtn, 4"x8", clg or w, fxd 45 deg blades, OB	EA	31.43	2.21
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-1.99	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-6.57	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		1.99	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-13.94	
5040	Registers, air rtn, 6"x8", clg or w, fxd 45 deg blades, OB	EA	32.39	1.95
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-1.99	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-6.57	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		1.99	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-13.94	
5060	Registers, air rtn, 6"x10", clg or w, fxd 45 deg blades, OB	EA	38.16	2.32
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-2.24	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-7.40	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		2.24	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-15.69	
5070	Registers, air rtn, 6"x12", clg or w, fxd 45 deg blades, OB	EA	40.03	2.73
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-2.43	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-8.01	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		2.43	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-17.00	
5140	Registers, air rtn, 10"x10", clg or w, fxd 45 deg blades, OB	EA	43.39	2.80
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-2.68	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-8.83	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		2.68	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-18.74	
5160	Registers, air rtn, 10"x16", clg or w, fxd 45 deg blades, OB	EA	49.97	2.95
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-3.24	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-10.68	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		3.24	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-22.66	
5170	Registers, air rtn, 12"x12", clg or w, fxd 45 deg blades, OB	EA	49.61	3.44
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-3.30	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-10.89	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		3.30	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-23.09	
5180	Registers, air rtn, 12"x18", clg or w, fxd 45 deg blades, OB	EA	63.31	2.62
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-4.67	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-15.41	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		4.67	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-32.68	
5184	Registers, air rtn, 12"x24", clg or w, fxd 45 deg blades, OB	EA	76.77	3.44
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-5.54	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-18.28	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		5.54	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-38.78	
5200	Registers, air rtn, 12"x30", clg or w, fxd 45 deg blades, OB	EA	93.40	3.70
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-6.85	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-22.60	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		6.85	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-47.93	
5210	Registers, air rtn, 12"x36", clg or w, fxd 45 deg blades, OB	EA	115.82	4.11
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-8.59	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-28.35	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		8.59	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-60.13	
5220	Registers, air rtn, 16"x16", clg or w, fxd 45 deg blades, OB	EA	66.15	3.29
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-4.86	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-16.02	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		4.86	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-33.99	
5240	Registers, air rtn, 18"x18", clg or w, fxd 45 deg blades, OB	EA	75.97	5.01
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-5.73	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-18.90	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		5.73	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-40.09	
5250	Registers, air rtn, 18"x24", clg or w, fxd 45 deg blades, OB	EA	96.47	5.84
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-7.35	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-24.24	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		7.35	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-51.42	
5254	Registers, air rtn, 18"x30", clg or w, fxd 45 deg blades, OB	EA	118.08	7.52
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-9.09	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-29.99	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		9.09	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-63.62	
5260	Registers, air rtn, 18"x36", clg or w, fxd 45 deg blades, OB	EA	145.08	9.28
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-11.52	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-38.00	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		11.52	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-80.61	
5270	Registers, air rtn, 20"x20", clg or w, fxd 45 deg blades, OB	EA	98.39	5.27
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-6.85	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-22.60	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		6.85	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-47.93	
5274	Registers, air rtn, 20"x24", clg or w, fxd 45 deg blades, OB	EA	105.85	4.52
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-8.09	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-26.70	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		8.09	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-56.64	
5280	Registers, air rtn, 24"x24", clg or w, fxd 45 deg blades, OB	EA	122.44	6.06
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-9.52	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-31.43	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		9.52	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-66.67	
5290	Registers, air rtn, 24"x30", clg or w, fxd 45 deg blades, OB	EA	151.31	8.12
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-12.14	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-40.06	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		12.14	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-84.97	
5300	Registers, air rtn, 24"x36", clg or w, fxd 45 deg blades, OB	EA	185.55	7.37
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-14.82	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-48.89	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		14.82	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-103.71	
5320	Registers, air rtn, 24"x48", clg or w, fxd 45 deg blades, OB	EA	260.27	8.94
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-21.04	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-69.43	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		21.04	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-147.28	
5340	Registers, air rtn, 30"x30", clg or w, fxd 45 deg blades, OB	EA	200.10	8.15
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-15.41	

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6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-50.84	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		15.41	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-107.85	
5344	Registers, air rtn, 30"x120", clg or w, fxd 45 deg blades, OB	EA	769.09	13.85
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-67.70	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-223.40	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		67.70	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-473.88	
5360	Registers, air rtn, 36"x36", clg or w, fxd 45 deg blades, OB	EA	293.58	7.63
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-24.37	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-80.42	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		24.37	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-170.60	
5370	Registers, air rtn, 40"x32", clg or w, fxd 45 deg blades, OB	EA	290.50	9.46
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-24.06	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-79.41	
6020	Registers, air rtn, fxd blades, OB dnpr, al, for removable core, add		24.06	
6030	Registers, air rtn, , OB dnpr, al, for cube core, lay-in/frame, deduct		-168.44	
15750 5408 Removable-reverse Core Air Damper				
15750 5409 Removable-reverse core opposed blade damper				
5410	Register, 8"x4", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	42.07	3.25
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-3.06	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-10.08	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-3.06	
5414	Register, 8"x6", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	50.95	3.97
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-3.85	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-12.70	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-3.85	
5418	Register, 10"x6", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	55.36	3.89
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-3.96	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-13.07	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-3.96	
5422	Register, 10"x10", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	75.47	5.72
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-5.89	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-19.42	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-5.89	
5426	Register, 12"x6", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	58.76	4.08
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-4.30	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-14.19	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-4.30	
5430	Register, 12"x12", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	89.06	6.25
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-7.24	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-23.91	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-7.24	
5434	Register, 16"x16", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	127.35	6.66
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-10.87	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-35.85	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-10.87	
5438	Register, 18"x18", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	147.76	7.22
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-13.02	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-42.95	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-13.02	
5442	Register, 20"x20", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	169.23	8.12
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-15.05	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-49.67	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-15.05	
5446	Register, 24"x12", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	117.29	6.85
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-9.73	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-32.12	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-9.73	
5450	Register, 24"x18", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	172.42	7.71
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-14.94	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-49.30	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-14.94	
5454	Register, 24"x24", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	268.28	11.22
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-24.11	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-79.56	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-24.11	
5458	Register, 30"x12", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	144.12	8.34

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6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-12.11	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-39.96	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-12.11	
5462	Register, 30"x18", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	201.63	9.43
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-17.77	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-58.64	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-17.77	
5466	Register, 30"x24", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	260.35	12.00
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-23.32	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-76.94	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-23.32	
5470	Register, 30"x30", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	375.05	14.96
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-34.18	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-112.80	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-34.18	
5474	Register, 36"x12", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	172.07	11.03
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-14.49	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-47.81	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-14.49	
5478	Register, 36"x18", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	232.23	10.74
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-20.37	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-67.23	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-20.37	
5482	Register, 36"x24", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	287.97	12.83
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-25.81	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-85.16	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-25.81	
5486	Register, 36"x30", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	482.57	19.82
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-44.93	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-148.28	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-44.93	
5490	Register, 36"x36", air rtn, clg or w, remov-reverse core, OB dnpr, al	EA	553.51	21.47
6000	Registers, air rtn, fxd blades, OB dnpr, al, for steel, deduct		-51.61	
6010	Registers, air rtn, fxd blades, OB dnpr, al, for no damper, deduct		-170.32	
6031	Registers, air rtn, OB dnpr, al, for cube core, lay-in/frame, deduct		-51.61	
15751 0010 Duct accessories				
15751 0350 Duct collar, spin-in type				
0356	Duct accessories, round, 4", duct collar, w/o damper, spin-in	EA	11.13	1.68
0357	Duct accessories, round, 5", duct collar, w/o damper, spin-in	EA	11.75	1.87
0358	Duct accessories, round, 6", duct collar, w/o damper, spin-in	EA	12.65	1.76
0359	Duct accessories, round, 7", duct collar, w/o damper, spin-in	EA	13.63	2.09
0360	Duct accessories, round, 8", duct collar, w/o damper, spin-in	EA	14.71	2.32
0361	Duct accessories, round, 9", duct collar, w/o damper, spin-in	LF	16.12	2.54
0362	Duct accessories, round, 10", duct collar, w/o damper, spin-in	EA	17.57	2.77
0363	Duct accessories, round, 12", duct collar, w/o damper, spin-in	EA	20.66	3.18
0364	Duct accessories, round, 14", duct collar, w/o damper, spin-in	EA	31.93	3.56
0365	Duct accessories, round, 16", du ct collar, w/o damper, spin-in	EA	35.40	3.98
0366	Duct accessories, round, 18", du ct collar, w/o damper, spin-in	EA	38.79	4.31
0367	Duct accessories, round, 20", du ct collar, w/o damper, spin-in	EA	42.07	5.48
0368	Duct accessories, round, 22", du ct collar, w/o damper, spin-in	EA	45.99	5.14
0369	Duct accessories, round, 24", du ct collar, w/o damper, spin-in	EA	50.45	5.59
15751 0999 Duct access door, insulated				
1000	Duct accessories, duct access door, insulated, 6" x 6"	EA	35.10	
1040	Duct accessories, duct access door, insulated, 12" x 12"	EA	47.97	6.43
1050	Duct accessories, duct access door, insulated, 12" x 18"	EA	58.76	7.52
1070	Duct accessories, duct access door, insulated, 18" x 18"	EA	67.45	9.50
1074	Duct accessories, duct access door, insulated, 24" x 18"	EA	69.60	9.95
1080	Duct accessories, duct access door, insulated, 24" x 24"	EA	77.21	12.23
15751 1999 Fabrics for flexible connections, w/ metal edge				
2000	Duct accessories, w/metal edge, fabrics for flexible connections	LF	4.63	0.93
2010	Flex Connector, Rubber Vinyl	LF	4.96	1.24
15751 2990 Fire Dampers				
15751 2999 Fire damper, curtain type, vertical				
Note: In Air Stream Galvanized Steel Construction With Fusable Link 160 F Spring Actuated For Horizontal Munt Gravity Actuated For Vertical Munt 1 1/2 Hr Fire Rating				
3000	Duct accessories, 6"x6", fire damper, curtain, vert, 1-1/2 hr	EA	31.34	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3021	Duct accessories, 8"x8", fire damper, curtain, vert, 1-1/2 hr	EA	32.47	
3030	Duct accessories, 10"x10", fire damper, curtain, vert, 1-1/2 hr	EA	32.47	
3044	Duct accessories, 12"x12", fire damper, curtain, vert, 1-1/2 hr	EA	33.63	
3200	Duct accessories, 24"x12", fire damper, curtain, vert, 1-1/2 hr	EA	52.90	
3238	Duct accessories, 14"x14", fire damper, curtain, vert, 1-1/2 hr	EA	38.93	
3280	Duct accessories, 30"x14", fire damper, curtain, vert, 1-1/2 hr	EA	70.13	
3298	Duct accessories, 16"x16", fire damper, curtain, vert, 1-1/2 hr	EA	45.25	
3300	Duct accessories, 18"x16", fire damper, curtain, vert, 1-1/2 hr	EA	50.13	
3340	Duct accessories, 36"x16", fire damper, curtain, vert, 1-1/2 hr	EA	76.77	
3356	Duct accessories, 18"x18", fire damper, curtain, vert, 1-1/2 hr	EA	48.95	
3398	Duct accessories, 20"x20", fire damper, curtain, vert, 1-1/2 hr	EA	63.53	
3478	Duct accessories, 24"x24", fire damper, curtain, vert, 1-1/2 hr	EA	75.99	
3484	Duct accessories, 32"x24", fire damper, curtain, vert, 1-1/2 hr	EA	89.83	
3590	Duct accessories, 32"x40", fire damper, curtain, vert, 1-1/2 hr	EA	120.01	
3620	Duct accessories, 48"x48", fire damper, curtain, vert, 1-1/2 hr	EA	184.25	
3632	Duct accessories, 18"x22", fire damper, curtain, vert, 2 hr	EA	61.61	
3634	Duct accessories, 42"x30", fire damper, curtain, vert, 2 hr	EA	114.76	
3636	Duct accessories, 96"x24", fire damper, curtain, vert, 2 hr	EA	296.09	
3638	Duct accessories, 96"x42", fire damper, curtain, vert, 2 hr	EA	369.85	
3652	Duct accessories, 10"x10", fire damper, curtain, vert, 4 hr	EA	50.47	
3654	Duct accessories, 42"x30", fire damper, curtain, vert, 4 hr	EA	200.78	
3656	Duct accessories, 44"x24", fire damper, curtain, vert, 4 hr	EA	161.17	
15751 4210 Fire damper, round				
4214	Duct accessories, fire damper, round type A, 4" dia, 2 hr	EA	57.91	
4216	Duct accessories, fire damper, round type A, 5" dia, 2 hr	EA	57.92	
4218	Duct accessories, fire damper, round type A, 6" dia, 2 hr	EA	60.14	
4220	Duct accessories, fire damper, round type A, 7" dia, 2 hr	EA	61.72	
4222	Duct accessories, fire damper, round type A, 8" dia, 2 hr	EA	65.47	
4224	Duct accessories, fire damper, round type A, 9" dia, 2 hr	EA	70.65	
4226	Duct accessories, fire damper, round type A, 10" dia, 2 hr	EA	74.12	
4228	Duct accessories, fire damper, round type A, 12" dia, 2 hr	EA	80.67	
4230	Duct accessories, fire damper, round type A, 14" dia, 2 hr	EA	97.49	
4262	Duct accessories, fire damper, round, 4 Hr, 4" dia	EA	55.71	
4263	Duct accessories, fire damper, round, 4 Hr, 5" dia	EA	59.45	
4264	Duct accessories, fire damper, round, 4 Hr, 6" dia	EA	61.67	
4265	Duct accessories, fire damper, round, 4 Hr, 7" dia	EA	68.90	
4266	Duct accessories, fire damper, round, 4 Hr, 8" dia	EA	72.65	
4267	Duct accessories, fire damper, round, 4 Hr, 9" dia	EA	82.03	
4268	Duct accessories, fire damper, round, 4 Hr, 10" dia	EA	84.25	
4269	Duct accessories, fire damper, round, 4 Hr, 12" dia	EA	85.82	
4270	Duct accessories, fire damper, round, 4 Hr, 14" dia	EA	112.32	
15751 4500 Fire/smoke combination damper, louver				
Note: Steel Construction With Fusable Link 160 F Spring Actuated 1 1/2 Hr Fire Rating				
4506	Duct accessories, 6" x 6", fire/smoke comb damper, louver	EA	69.06	
4510	Duct accessories, 8" x 8", fire/smoke comb damper, louver	EA	123.78	
4580	Duct accessories, 10" x 10", fire/smoke comb damper, louver	EA	138.13	
4640	Duct accessories, 12" x 12", fire/smoke comb damper, louver	EA	144.44	
4720	Duct accessories, 14" x 14", fire/smoke comb damper, louver	EA	157.04	
4820	Duct accessories, 16" x 16", fire/smoke comb damper, louver	EA	173.08	
4840	Duct accessories, 20" x 16", fire/smoke comb damper, louver	EA	180.11	
4900	Duct accessories, 18" x 18", fire/smoke comb damper, louver	EA	174.33	
5040	Duct accessories, 20" x 20", fire/smoke comb damper, louver	EA	193.58	
5060	Duct accessories, 24" x 20", fire/smoke comb damper, louver	EA	211.70	
5120	Duct accessories, 24" x 24", fire/smoke comb damper, louver	EA	225.39	
5130	Duct accessories, 30" x 24", fire/smoke comb damper, louver	EA	218.20	
5141	Duct accessories, 36" x 30", fire/smoke comb damper, louver	EA	272.58	
5142	Duct accessories, 40" x 36", fire/smoke comb damper, louver	EA	455.04	
5143	Duct accessories, 48" x 48", fire/smoke comb damper, louver	EA	890.16	
5150	Duct accessories, 24 or 120 V, fire/smoke comb damper opn motor	EA	208.56	
15751 5190 Variable Air & Constant Volume Boxes				
15751 5199 Mxing box				
5200	Duct mixing box, 150-270 CFM w/ elec/pneu motor, constant vol	EA	561.03	16.89
5210	Duct mixing box, 270-600 CFM w/ elec/pneu motor, constant vol	EA	579.94	17.03
5230	Duct mixing box, 550-1000 CFM w/ elec/pneu motor, constant vol	EA	591.10	18.34

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5240	Duct mixing box, 1000-1600 CFM w/ elec/pneu motor, constant vol	EA	612.36	19.48
5250	Duct mixing box, 1300-1900 CFM w/ elec/pneu motor, constant vol	EA	646.71	22.38
5260	Duct mixing box, 550-2640 CFM w/ elec/pneu motor, constant vol	EA	709.88	21.76
5270	Duct mixing box, 650-3120 CFM w/ elec/pneu motor, constant vol	EA	757.08	34.10
5500	Mxing box VAV cool only, pneu, press indep, 300 to 600 CFM	EA	349.05	8.88
5510	Mxing box VAV cool only, 500 to 1000 CFM pneu, press indep	EA	368.92	10.19
5520	Mxing box VAV cool only, 800 to 1600 CFM pneu, press indep	EA	375.15	11.02
5530	Mxing box VAV cool only, 1100 to 2000 CFM pneu, press indep	EA	391.54	12.47
5540	Mxing box VAV cool only, 1500 to 3000 CFM pneu, press indep	EA	423.82	14.23
5550	Mxing box VAV cool only, 2000 to 4000 CFM pneu, press indep	EA	452.55	16.62
5555	Mxing box VAV cool only, 3000 to 4000 CFM pneu, press indep	EA	456.28	15.68
5610	Mxing box VAV cool/HW coils, 200CFM damper, actuator &	EA	639.02	8.46
5620	Mxing box VAV cool/HW coils, 400CFM damper, actuator &	EA	649.81	8.67
5630	Mxing box VAV cool/HW coils, 600CFM damper, actuator &	EA	649.81	9.15
5640	Mxing box VAV cool/HW coils, 800CFM damper, actuator &	EA	680.95	9.60
5650	Mxing box VAV cool/HW coils, 1000CFM damper, actuator &	EA	680.95	10.57
5660	Mxing box VAV cool/HW coils, 1250CFM damper, actuator &	EA	761.70	11.64
5670	Mxing box VAV cool/HW coils, 1500CFM damper, actuator &	EA	761.70	11.75
5680	Mxing box VAV cool/HW coils, 2000CFM damper, actuator &	EA	865.48	14.89
5684	Mxing box VAV cool/HW coils, damper, actuator & thermo,	EA	937.72	17.96
5810	Mxing box variable volume, 200CFM cool/HW coils, fan pwred	EA	1,007.69	7.19
5820	Mxing box variable volume, 400CFM cool/HW coils, fan pwred	EA	1,042.69	7.98
5840	Mxing box variable volume, 800CFM cool/HW coils, fan pwred	EA	1,117.96	10.29
5850	Mxing box variable volume, 1000CFM cool/HW coils, fan pwred	EA	1,117.96	10.29
5870	Mxing box variable volume, 1500CFM cool/HW coils, fan pwred	EA	1,293.85	14.37
5880	Mxing box variable volume, 2000CFM cool/HW coils, fan pwred	EA	1,427.81	20.52
15751 5980 Multi-blade Dampers				
15751 5989 Multi-blade dampers, opposed blade				
5990	Duct accessories, multi-blade damper, opposed blade, 8"x6"	EA	32.84	2.10
5994	Duct accessories, multi-blade damper, opposed blade, 8"x8"	EA	34.88	3.07
5996	Duct accessories, 10"x10", multi-blade damper, opposed	EA	38.24	4.49
6000	Duct accessories, 12"x12", multi-blade damper, opposed	EA	41.87	5.61
6030	Duct accessories, 14"x10", multi-blade damper, opposed	EA	41.67	2.36
6031	Duct accessories, 14"x14", multi-blade damper, opposed	EA	50.65	2.77
6032	Duct accessories, 16"x10", multi-blade damper, opposed	EA	49.67	3.55
6035	Duct accessories, 16"x16", multi-blade damper, opposed	EA	58.99	4.00
6036	Duct accessories, 18"x16", multi-blade damper, opposed	EA	64.77	4.64
6037	Duct accessories, 18"x14", multi-blade damper, opposed	EA	58.99	4.04
6038	Duct accessories, 18"x18", multi-blade damper, opposed	EA	67.49	9.69
6068	Duct accessories, multi-blade damper, opposed blade, 20"x6"	EA	42.43	4.08
6069	Duct accessories, multi-blade damper, opposed blade, 20"x8"	EA	49.03	4.79
6071	Duct accessories, 20"x18", multi-blade damper, opposed	EA	75.99	5.12
6072	Duct accessories, 20"x20", multi-blade damper, opposed	EA	80.52	6.10
6073	Duct accessories, multi-blade damper, opposed blade, 22"x6"	EA	41.67	4.49
6074	Duct accessories, 22"x18", multi-blade damper, opposed	EA	78.87	6.73
6075	Duct accessories, 22"x20", multi-blade damper, opposed	EA	87.86	7.67
6077	Duct accessories, 22"x22", multi-blade damper, opposed	EA	97.38	8.23
6078	Duct accessories, 24"x20", multi-blade damper, opposed	EA	104.86	9.76
6080	Duct accessories, 24"x24", multi-blade damper, opposed	EA	115.72	10.85
6110	Duct accessories, 26"x26", multi-blade damper, opposed	EA	143.04	18.29
6120	Duct accessories, 28"x28", multi-blade damper, opposed	EA	158.09	13.82
6133	Duct accessories, 30"x30", multi-blade damper, opposed	EA	207.33	17.58
6135	Duct accessories, 32"x32", multi-blade damper, opposed	EA	226.80	19.28
6150	Duct accessories, 34"x34", multi-blade damper, opposed	EA	250.48	20.21
6156	Duct accessories, 36"x32", multi-blade damper, opposed	EA	245.55	22.83
6157	Duct accessories, 36"x34", multi-blade damper, opposed	EA	256.75	22.14
6158	Duct accessories, 36"x36", multi-blade damper, opposed	EA	269.50	24.32
6310	Duct access, 16"x24", multi-blade damper, opposed blade, insulated	EA	87.37	9.28
6330	Duct access, 22"x22", multi-blade damper, opposed blade, insulated	EA	103.23	9.98
6340	Duct access, 24"x24", multi-blade damper, opposed blade, insulated	EA	123.91	12.79
6350	Duct access, 32"x32", multi-blade damper, opposed blade, insulated	EA	200.95	15.71
6360	Duct access, 32"x40", multi-blade damper, opposed blade, insulated	EA	236.00	16.16
6370	Duct access, 42"x44", multi-blade damper, opposed blade, insulated	EA	375.43	28.74
6380	Duct access, 54"x44", multi-blade damper, opposed blade, insulated	EA	445.51	28.88
6390	Duct access, 56"x48", multi-blade damper, opposed blade, insulated	EA	475.79	29.09

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
15751 6999	Splitter damper assembly, self-locking			
7000	Duct access, 1' rod, splitter damper assembly, self-locking	EA	28.67	3.55
15751 7500	Variable volume modulating motorized damper			
7523	Duct access, 14" x 14", variable vol modulating motorized damper	EA	177.73	23.19
7548	Duct access, 20" x 20", variable vol modulating motorized damper	EA	235.15	24.49
7550	Duct access, 22" x 22", variable vol modulating motorized damper	EA	353.20	39.54
7564	Duct access, 24" x 24", variable vol modulating motorized damper	EA	240.01	27.60
15751 8300	Relief damper, electronic bypass w/ tight seal			
8363	Relief damper, electronic bypass, w/tight seal, 24" x 24"	EA	242.70	8.98
8364	Relief damper, electronic bypass, w/tight seal, 24" x 36"	EA	262.32	9.98
8365	Relief damper, electronic bypass, w/tight seal, 24" x 48"	EA	296.15	14.92
8390	Relief damper, electronic bypass, w/tight seal, 46" x 36"	EA	447.17	22.44
8394	Relief damper, electronic bypass, w/tight seal, 48" x 48"	EA	507.18	29.96
8396	Relief damper, electronic bypass, w/tight seal, 54" x 36"	EA	516.31	44.88
15751 8400	Round volume control damper, butterfly			
8410	Round damper, butterfly, 6" dia, vol control w/lever lock rgltr	EA	41.90	4.15
8412	7"D Radial Opposed Blade Damper (18cm)Rnd,Stl Const,Manual Oper	EA	28.57	2.96
8414	Round damper, butterfly, 8" dia, vol control w/lever lock rgltr	EA	45.52	5.01
8418	Round damper, butterfly, 10" dia, vol control w/lever lock rgltr	EA	50.57	6.21
8420	Round damper, butterfly, 12" dia, vol control w/lever lock rgltr	EA	53.79	6.58
8422	14"D Radial Opposed Blade Damper (36cm)Rnd,Stl Const,Manual Oper	EA	42.76	4.61
8423	15"D Radial Opposed Blade Damper (38cm)Rnd,Stl Const,Manual Oper	EA	72.54	4.76
8424	16"D Radial Opposed Blade Damper (41cm)Rnd,Stl Const,Manual Oper	EA	48.56	5.63
8426	Round damper, butterfly, 18" dia, vol control w/lever lock rgltr	EA	78.13	9.35
8428	20"D Radial Opposed Blade Damper (51cm)Rnd,Stl Const,Manual Oper	EA	56.67	6.64
8430	Round damper, butterfly, 24" dia, vol control w/lever lock rgltr	EA	103.49	10.81
8432	Round damper, butterfly, 30" dia, vol control w/lever lock rgltr	EA	135.10	14.51
8434	Round damper, butterfly, 36" dia, vol control w/lever lock rgltr	EA	173.22	17.32
15751 8500	Barometric Dampers			
8510	6"x6" Barometric Damper	EA	149.77	4.05
8520	12"x12" Barometric Damper	EA	153.89	5.51
8530	18"x18" Barometric Damper	EA	207.23	8.78
8540	24"x24" Barometric Damper	EA	252.47	16.96
15751 9400	Turning vane components			
9410	Duct accessories, turning vane rail, turning vane components	LF	2.64	0.26
9420	Duct accessories, turning vane, double thick, fcty	LF	1.95	0.15
9428	Duct accessories, turning vane, set, 12"	LF	7.09	0.19
9432	Duct accessories, turning vane, set, 14"	LF	7.83	0.19
9434	Duct accessories, turning vane, set, 16"	LF	8.59	0.15
9436	Duct accessories, turning vane, set, 18"	LF	9.30	0.15
9438	Duct accessories, turning vane, set, 20"	LF	10.02	0.15
9440	Duct accessories, turning vane, set, 22"	LF	10.79	0.11
9442	Duct accessories, turning vane, set, 24"	LF	11.53	0.11
9444	Duct accessories, turning vane, set, 26"	LF	12.34	0.26
9446	Duct accessories, turning vane, set, 30"	LF	13.69	0.26
15751 9500	Removal & Reinstallation Of Distribution Devices			
	Note: Includes Storage And Cleaning. Price Does Not Include Ductwork.			
9510	Remove & Reinstall Variable Air Volume Terminal Unit	EA	70.33	
9520	Remove & Reinstall Fan Powered Variable Volume Terminal Unit	EA	77.57	
9530	Remove & Reinstall Lay-In Diffuser/Register/Grille	EA	11.63	
9540	Remove & Reinstall Surface Md Diffuser/Register/Grille	EA	15.75	
15752 0010	Louvers			
3204	Louvers, al, stormprf,12"x12", w/scr, mill fin, fxd blade, cont	EA	40.46	
3206	Louvers, al, stormprf,12"x18", w/scr, mill fin, fxd blade, cont	EA	56.16	
3208	Louvers, al, stormprf,12"x24", w/scr, mill fin, fxd blade, cont	EA	84.46	
15752 6000	Krueger Return And Supply Air Grills			
6001	Krueger Air Grill MDL:SHF23 Neck Size 6'X6",Face Size 24"X24'	EA	45.80	
6002	Krueger Air Grill MDL:SHF23 Neck Size 9'X9", Face Size 24"X 24"	EA	52.61	
6003	Krueger Air Grill MDL:SHF23 Neck Size 12"X12", Face Size 24"X24"	EA	70.30	
15752 6100	Krueger 1400 Series Ceiling Diffusers			
6101	Krueger Ceiling Dffsrs MDL 1400 F 23 Nck Size 6"Thru 15"Face	EA	36.75	
15752 6200	Krueger 6000 Series Perforated Diffusers			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6201	Krueger MDL 6404F23, ADJ4-Way Def 1ct Rd NK, NK/SZ 6"Thru15" F/C	EA	36.27	
6202	Krueger Rtn MDL 6290F23, SQ/NK, NK/SZ 6X6 Thru 15X15, Face Size	EA	34.91	
6203	Krueger Rtn MDL 6290F23, SQ/NK, NK/SZ 18X18 Thru 22X22 Face Size	EA	47.16	
6204	Krueger Rtn MDL 6290F23, RD/NK N K/SZ 6 Thru 15, Face Size 24X24	EA	34.91	
15752 6300	Krueger Filter Grills			
6301	Krueger 24"X12" Panel Type, MDL S 80H-FF W/Filters	EA	76.57	
6302	Krueger 24"X24" Panel Type, MDL S 80H-FF W/Filters	EA	102.02	
6303	Krueger 48"X24" Panel Type, MDL S 80H-FF W/Filters	EA	144.63	
15753 0010	Vibration absorbers			
15753 0099	Hangers			
15753 0100	Neoprene flex			
0220	Vibration absorbers, 75-550 lb capacity, hangers, neoprene flex	EA	25.99	5.13
0240	Vibration absorbers, 250-1100 lb capacity, hangers, neoprene fle	EA	40.36	6.16
15753 0600	Rubber in shear			
0610	Vibration isolators, 45-350 lb to 1/2" rod size, rubber in	EA	30.73	5.60
0620	Vibration isolators, 130-700 lb to 3/4" rod size, rubber in	EA	43.43	7.30
0630	Vibration isolators, 50-1000 lb to 3/4" rod size, rubber in	EA	50.40	9.95
15753 0999	Munts			
15753 0999	Neoprene			
1000	Vibration absorbers, mounts, neoprene, 135-380 lbcapacity	EA	8.12	
1020	Vibration absorbers, mounts, neoprene, 250-1100 lbcapacity	EA	24.30	
1040	Vibration absorbers, mounts, neoprene, 1000-4000 lbcapacity	EA	54.62	
15753 1099	Spring flex Leveling Ad- Justment, Cast Top, Base Plate And Pad.			
Note: For Use With Floor Munted Equipment Only				
1100	Vibration absorbers, mounts, spring flex, 60 lbcapacity	EA	32.82	
1120	Vibration absorbers, mounts, spring flex, 165 lbcapacity	EA	32.82	
1240	Vibration absorbers, mounts, spring flex, 1100 lbcapacity	EA	47.84	
15753 1399	Spring type, 2 piece			
Note: Equipment Support Aluminum Construction 1/2 In Adjusting And Leveling Bolt 1 In Deflection				
1410	Vibration isolator, spring type, 2 piece, 50 - 1000 lb	EA	135.03	12.67
1420	Vibration isolator, spring type, 2 piece, 1100 - 1600 lb	EA	145.37	12.67
15753 1500	Double spring			
Note: Equipment Support 1 In Deflection Neoprene Pad And 5/8 In Stud Bolt				
1510	Vibration isolator, double spring type, open, 150 - 450 lb	EA	87.14	6.85
1520	Vibration isolator, double spring type, open, 500 - 1000 lb	EA	87.14	6.85
1530	Vibration isolator, 1100 - 1600 lb, double spring type, open	EA	87.14	6.85
1540	Vibration isolator, 1700 - 2400 lb, double spring type, open	EA	95.40	6.85
1550	Vibration isolator, 2500 - 3400 lb, double spring type, open	EA	149.51	6.85
15753 2150	Laminated neoprene and cork Equipment			
2160	Vibration isolator, laminated neoprene & cork, 1" thk	SF	61.67	7.56
15754 0010	Ventilators			
15754 1280	Spinner			
1340	Ventilator, base, 6" neck, 250 CFM damper&bird scr, galv,	EA	85.49	20.76
1400	Ventilator, base, 12" neck, 770 CFM damper&bird scr, galv,	EA	134.34	27.15
1500	Ventilator, base, 24" neck, 3, 100 CFM damper&bird scr,	EA	270.87	20.17
1540	Ventilator, base, 36" neck, 5, 500 CFM damper&bird scr,	EA	708.88	26.74
15754 2000	Stationary, gravity			
2160	Ventilator, base, 6" neck, 66 CFM damper&bird scr, syph, galv, sta, g	EA	57.09	11.19
2240	Ventilator, base, 12" neck, 160 CFM damper&bird scr, syph, galv,	EA	90.59	19.41
2340	Ventilator, base, 24" neck, 900 CFM damper&bird scr, syph, galv,	EA	230.51	24.08
2380	Ventilator, base, 36" neck, 2000 CFM damper&bird scr, syph, galv,	EA	472.84	34.10
15754 4199	Stationary mushroom			
4200	Ventilator, base, 16" orifice dia, damper&bird scr, sta	EA	388.21	38.90
4220	Ventilator, base, 26" orifice dia, damper&bird scr, sta	EA	577.96	37.00
4230	Ventilator, base, 30" orifice dia, damper&bird scr, sta	EA	779.70	34.86
4240	Ventilator, base, 38" orifice dia, damper&bird scr, sta	EA	1,081.38	36.27
4250	Ventilator, base, 42" orifice dia, damper&bird scr, sta	EA	1,413.35	37.03
4260	Ventilator, base, 50" orifice dia, damper&bird scr, sta	EA	1,680.02	40.38
15754 5900	Mushroom relief/intake			
5910	Ventilator, C, 12"x12", al hsg, damper, BS, mushroom	EA	321.22	53.23

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5914	Ventilator, C, 16"x16", al hsg, damper, BS, mushroom	EA	402.77	51.68
5918	Ventilator, C, 22"x22", al hsg, damper, BS, mushroom	EA	520.87	69.19
5922	Ventilator, C, 28"x28", al hsg, damper, BS, mushroom	EA	639.97	82.91
5926	Ventilator, C, 32"x32", al hsg, damper, BS, mushroom	EA	840.04	73.82
5930	Ventilator, C, 38"x38", al hsg, damper, BS, mushroom	EA	1,155.29	86.36
5934	Ventilator, C, 46"x46", al hsg, damper, BS, mushroom	EA	1,451.07	90.23
5938	Ventilator, C, 52"x52", al hsg, damper, BS, mushroom	EA	1,767.39	99.87
5942	Ventilator, C, 60"x60", al hsg, damper, BS, mushroom	EA	2,393.18	108.29

15760 Balancing

JOC Note: New Equipment Includes Testing & Balancing. Use these Items For Testing And Balancing Of Existing Systems.

15761 0010 Balancing, air

1002	Balancing, centrifugal fans	EA	179.46	
1102	Balancing, heating & ventilating units	EA	269.26	
1202	Balancing, in-line fan	EA	269.26	
1302	Balancing, propeller & wall fan	EA	50.86	
1402	Balancing, roof exhaust fan	EA	119.68	
2502	Balancing, multi-zone AC and heating unit	EA	179.46	
2602	Balancing, cost per zone, over 1 zone for multi-zone	EA	59.84	
2702	Balancing Fan Section Exhaust	EA	75.27	
3002	Balancing, diffusers, registers, grills, avg ceiling height	EA	35.91	
3003	HVAC Duct Sys, Ceiling Hgt To 12' Supply, Return, Exh, Register&Diff	EA	35.91	
3102	Balancing, diffusers, registers, grills, high ceiling	EA	53.86	
3202	Balancing, diffusers, registers, grills, floor height	EA	29.92	
3602	Balancing, lab hood	EA	179.46	
3710	Balance Constant Volume Box	EA	26.48	
3712	Balancing, linear diffuser	EA	89.77	
3730	Balance General Hood	EA	22.56	
3740	Balance Induction Unit	EA	24.49	
3750	Balance Mbduline - Master	EA	22.55	
3760	Balance Mbduline - Slave	EA	11.28	
3770	Balance Dampers	EA	6.71	
3780	Balance Regenerators	EA	150.40	

15761 4000 Air Conditioning Equipment

4001	Balancing Central A/C Station	EA	289.18	
4002	Balancing Built-Up LP Unit	EA	253.07	
4003	Balancing Built-Up Hp Unit	EA	289.18	
4004	Balancing Package A/C Unit	EA	108.45	
4005	Balancing Rooftop Heat&Cool Unit	EA	144.59	
4006	Balancing Multi-Zone HVAC Unit	EA	180.74	
4007	Balancing Built-Up Hp Dual Duct Unit	EA	361.48	
4008	Balancing Built-Up Hp Variable Volume Unit	EA	433.85	

15762 0010 Balancing, water

0052	Water balancing, air cooled condenser	EA	105.91	
0102	Water balancing, cabinet heater	EA	36.31	
0202	Water balancing, chiller	EA	257.28	
0302	Water balancing, convactor	EA	30.26	
0402	Water balancing, water convertor	EA	151.28	
0502	Water balancing, cooling tower	EA	196.77	
0602	Water balancing, fan coil & ventilator	EA	54.46	
0702	Water balancing, fin tube & radiant panels	EA	60.51	
0802	Water balancing, main & duct re-heat coils	EA	55.98	
0902	Water balancing, main balancing valves	EA	45.38	
1002	Water balancing, pumps	EA	133.12	
1102	Water balancing, unit heater	EA	42.36	
1202	Water balancing, boiler	EA	133.12	

15763 Exhaust systems

15763 0100 Complete Overhead Exhaust System

Note: Includes Tubing storage reels, high temperature tubing, cable winch, blast gate, cone adapter and mounting hardware

0110	6 Inch Dia., 20 Foot Tube		2,914.41	
0120	8 Inch Dia., 15 Foot Tube		3,482.58	
0130	10 Inch Dia., 15 Foot Tube		4,300.88	

15763 0500 Engine exhaust, garage, in-floor system

Note: Accessories for metal tubing, (overhead systems also) Adapters, for metal tubing end.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0920	Exhaust sys, eng exh, 3" tail pipe type, in-fl, adptr, for met tubing	EA	25.47	
0930	Exhaust sys, eng exh, 4" tail pipe type, in-fl, adptr, for met tubing	EA	26.48	
0940	Exhaust sys, eng exh, 5" tail pipe type, in-fl, adptr, for met tubing	EA	27.50	
15763 1200 Tubing, galvanized, flexible				
Note: (for overhead sys, also)				
1210	Exhaust sys, eng exh, in-fl, tbg, galv, flex, 3" ID	LF	3.97	
1220	Exhaust sys, eng exh, in-fl, tbg, galv, flex, 4" ID	LF	4.95	
1230	Exhaust sys, eng exh, in-fl, tbg, galv, flex, 5" ID	LF	5.91	
15763 1500 Engine exhaust, garage, overhead capnt, neoprene				
Note: Engine exhaust, garage, ovrhd. compon., for neoprene tubing alternate metal tubing & accessories see below. Adapters for neoprene tubing end.				
1580	Exhaust sys, eng exh, hvy wl nprn, adptr, for tbg end, 4" pipe	EA	40.75	
1660	Exhaust sys, eng exh, for nprn tbg, conn, tbg, 3" int, alum	EA	10.14	
1670	Exhaust sys, eng exh, for nprn tbg, conn, tbg, 4" int, alum	EA	13.75	
1710	Exhaust sys, eng exh, for nprn tbg, conn, tbg, 5" int, nprn	EA	28.52	
15763 2200 Tubing, neoprene, 11' lengths				
2210	Exhaust sys, eng exh, 3" ID, ovrhd capnt, tbg, nprn, 11' lgs	LF	6.58	
2220	Exhaust sys, eng exh, 4" ID, ovrhd capnt, tbg, nprn, 11' lgs	LF	9.82	
2230	Exhaust sys, eng exh, 5" ID, ovrhd capnt, tbg, nprn, 11' lgs	LF	14.26	
15763 3000 Engine exhaust, tubing, flexible				
3040	Tubing, exhaust, tail pipe adptr neoprene, 3"x20', flex, w/ cplr	EA	244.50	14.77
3050	Tubing, exhaust, tail pipe adptr neoprene, 4"x15', flex, w/ cplr	EA	275.60	12.57
3060	Tubing, exhaust, tail pipe adptr neoprene, 4"x20', flex, w/ cplr	EA	329.15	21.88
3070	Tubing, exhaust, tail pipe adptr neoprene, 5"x15', flex, w/ cplr	EA	393.96	22.55
3110	Tubing, exhaust, tail pipe adptr galv, 3"x20', flex, w/ cplr	EA	181.23	18.33
3120	Tubing, exhaust, tail pipe adptr galv, 4"x17', flex, w/ cplr	EA	196.08	13.73
3130	Tubing, exhaust, tail pipe adptr galv, 4"x20', flex, w/ cplr	EA	217.33	27.00
3140	Tubing, exhaust, tail pipe adptr galv, 5"x17', flex, w/ cplr	EA	243.91	23.52
3142	5"x20' NEOP Spiral EXH Flex Hose w/Duct CPLR, Damper, Tailpipe	EA	399.27	28.18
3144	5"x20' GALV Spiral EXH Flex Hose w/Duct CPLR, Damper, Tailpipe	EA	340.75	26.31
3146	6"x15' NEOP Spiral EXH Flex Hose w/Duct CPLR, Damper, Tailpipe	EA	547.92	44.71
3148	6"x17' GALV Spiral EXH Flex Hose w/Duct CPLR, Damper, Tailpipe	EA	424.87	41.74
15763 8000 Blower, for tailpipe exhaust system				
8012	Exhaust systems, 495 CFM 1/3HP, direct drive, blower for	EA	1,242.35	53.06
8014	Exhaust systems, 1445 CFM 3/4HP, direct drive, blower for	EA	1,383.17	66.33
8016	Exhaust systems, 1840 CFM 1-1/2HP, direct drive, blower	EA	1,881.95	88.36
8032	Exhaust systems, 1400 CFM 1HP, beltdrive, blower for tailpipe	EA	1,496.35	66.33
8034	Exhaust systems, 2023 CFM 1-1/2HP, blower for tailpipe,	EA	2,221.49	88.36
8036	Exhaust systems, 2750 CFM 2HP, beltdrive, blower for tailpipe	EA	2,766.34	132.65
8038	Exhaust systems, 4400 CFM 3HP, beltdrive, blower for tailpipe	EA	4,155.22	147.40
8040	Exhaust systems, 7060 CFM 5HP, beltdrive, blower for tailpipe	EA	7,185.66	189.51
15764 Dust collection system				
Note: Hardware (Fan, Cyclone And Hopper) Sizing Based On Inlet, Hopper Capacity And Cfm				
15764 0010 Dust collection system				
5030	Dust coll sys, fan, cyclone & hopper, 4", 4.8 CF, 311CFM	EA	2,760.88	266.68
5040	Dust coll sys, fan, cyclone & hopper, 4", 7.5 CF, 440CFM	EA	2,909.54	244.96
5050	Dust coll sys, fan, cyclone & hopper, 4", 12 CF, 540CFM	EA	3,444.17	349.25
5060	Dust coll sys, fan, cyclone & hopper, 6", 4.8 CF, 860CFM	EA	3,577.76	395.11
5070	Dust coll sys, fan, cyclone & hopper, 6", 7.5 CF, 993CFM	EA	3,679.54	428.26
5080	Dust coll sys, fan, cyclone & hopper, 6", 9 CF, 1200CFM	EA	4,066.16	495.34
5090	Dust coll sys, fan, cyclone & hopper, 8", 7.5 CF, 1500CFM	EA	4,422.48	556.37
5100	Dust coll sys, fan, cyclone & hopper, 8", 8.5 CF, 2000CFM	EA	4,472.06	587.42
5110	Dust coll sys, fan, cyclone & hopper, 8", 15 CF, 2500CFM	EA	4,778.53	332.70
5120	Dust coll sys, fan, cyclone & hopper, 10", 8.5 CF, 3000CFM	EA	5,675.65	442.39
5130	Dust coll sys, fan, cyclone & hopper, 12", 8.5 CF, 4000CFM	EA	7,784.38	636.37
5140	Dust coll sys, fan, cyclone & hopper, 14", 54 CF, 6000CFM	EA	13,073.73	843.99
15770 Refrigeration specialties				
15770 0600 Accumulator				
0610	Refrigeration specialties, accumulator, 3/4"	EA	72.30	
0614	Refrigeration specialties, accumulator, 7/8"	EA	92.55	
0618	Refrigeration specialties, accumulator, 1-1/8"	EA	117.92	
0622	Refrigeration specialties, accumulator, 1-3/8"	EA	150.34	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0626	Refrigeration specialties, accumulator, 1-5/8"	EA	186.23	
0630	Refrigeration specialties, accumulator, 2-1/8"	EA	425.43	
15770 1000	Filter dryer			
15770 1010	Replaceable core type, solder			
1020	Refrigeration spec, solder 1/2", filter dryer, replaceable core	EA	116.99	3.10
1030	Refrigeration spec, solder 5/8", filter dryer, replaceable core	EA	130.17	3.33
1040	Refrigeration spec, solder 7/8", filter dryer, replaceable core	EA	150.13	3.48
1050	Refrigeration spec, solder 1-1/8", filter dryer, replaceable	EA	153.49	2.95
1060	Refrigeration spec, solder 1-3/8", filter dryer, replaceable	EA	156.40	3.33
1070	Refrigeration spec, solder 1-5/8", filter dryer, replaceable	EA	164.63	3.18
1080	Refrigeration spec, solder 2-1/8", filter dryer, replaceable	EA	231.68	2.91
1090	Refrigeration spec, solder 2-5/8", filter dryer, replaceable	EA	188.96	1.44
1100	Refrigeration spec, solder 3-1/8", filter dryer, replaceable	EA	245.05	1.66
15770 1200	Sealed in-line, solder			
1210	Refrigeration spec, solder 1/4", 3 cu in, filter dryer, sealed	EA	22.51	2.23
1220	Refrigeration spec, solder 3/8", 5 cu in, filter dryer, sealed	EA	25.72	2.04
1230	Refrigeration spec, solder 1/2", 9 cu in, filter dryer, sealed	EA	28.28	2.00
1240	Refrigeration spec, solder 1/2", 16 cu in, filter dryer, sealed	EA	32.68	1.97
1250	Refrigeration spec, solder 5/8", 16 cu in, filter dryer, sealed	EA	33.47	1.85
1260	Refrigeration spec, solder 5/8", 30 cu in, filter dryer, sealed	EA	45.87	2.12
1270	Refrigeration spec, solder 7/8", 30 cu in, filter dryer, sealed	EA	50.72	2.35
1280	Refrigeration spec, solder 7/8", 41 cu in, filter dryer, sealed	EA	56.93	2.38
1290	Refrigeration spec, solder 1-1/8", 60 cu in, filter dryer,	EA	79.96	2.84
15770 4000	P-trap, suction line, solder			
4010	Refrigeration specialties, solder 5/8", P-trap, suction	EA	29.95	4.80
4020	Refrigeration specialties, solder 3/4", P-trap, suction	EA	36.09	5.03
4030	Refrigeration specialties, solder 7/8", P-trap, suction	EA	33.41	4.80
4040	Refrigeration specialties, solder 1-1/8", P-trap, suction	EA	43.39	5.37
4050	Refrigeration specialties, solder 1-3/8", P-trap, suction	EA	58.59	4.54
4060	Refrigeration specialties, solder 1-5/8", P-trap, suction	EA	81.23	5.07
4070	Refrigeration specialties, solder 2-1/8", P-trap, suction	EA	144.35	5.90
15770 5000	Sightglass			
5020	Refrigeration spec, solder 1/4", sightglass, moisture/liquid ind	EA	24.12	5.37
5030	Refrigeration spec, solder 3/8", sightglass, moisture/liquid ind	EA	25.12	6.13
5040	Refrigeration spec, solder 1/2", sightglass, moisture/liquid ind	EA	28.77	7.11
5050	Refrigeration spec, solder 5/8", sightglass, moisture/liquid ind	EA	29.84	7.75
5060	Refrigeration spec, solder 7/8", sightglass, moisture/liquid ind	EA	35.08	9.00
5070	Refrigeration spec, solder 1-1/8", sightglass, moisture/liquid ind	EA	39.32	10.78
5080	Refrigeration spec, solder 1-3/8", sightglass, moisture/liquid ind	EA	58.29	12.40
5090	Refrigeration spec, solder 1-5/8", sightglass, moisture/liquid ind	EA	66.80	15.92
5100	Refrigeration spec, solder 2-1/8", sightglass, moisture/liquid ind	EA	82.15	19.29
15772	Absorption Chillers			
15772 1000	Absorption Chillers			
1001	100 Ton Absorption Chlr	EA	69,968.10	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-2,067.88	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-3,446.47	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-4,825.06	
1002	150 Ton Absorption Chlr	EA	90,099.67	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-2,666.84	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-4,444.74	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-6,222.63	
1003	200 Ton Absorption Chlr	EA	100,424.88	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-2,972.88	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-4,954.80	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-6,936.71	
1004	350 Ton Absorption Chlr	EA	138,063.93	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-4,087.70	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-6,812.83	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-9,537.96	
1005	750 Ton Absorption Chlr	EA	245,512.49	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-7,287.91	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-12,146.52	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-17,005.13	
1006	850 Ton Absorption Chlr	EA	263,722.04	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-7,821.29	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-13,035.49	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-18,249.68	
1016	For Low Ambient Protection, 0 Deg F., Add		34,645.34	
1007	950 Ton Absorption Chlr	EA	281,806.72	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-8,385.26	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-13,975.43	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-19,565.60	
1016	For Low Ambient Protection, 0 Deg F., Add		36,910.66	
1008	1125 Ton Absorption Chlr	EA	324,339.66	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-9,653.13	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-16,088.55	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-22,523.97	
1016	For Low Ambient Protection, 0 Deg F., Add		42,472.39	
1009	250 Ton Absorption Chlr	EA	113,013.56	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-3,344.46	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-5,574.09	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-7,803.73	
1016	For Low Ambient Protection, 0 Deg F., Add		14,875.57	
1011	420Ton Absorption Chiller	EA	198,373.19	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-5,885.20	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-9,808.66	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-13,732.13	
1016	For Low Ambient Protection, 0 Deg F., Add		26,052.51	
1012	665Ton Absorption Chiller	EA	276,412.71	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-8,221.31	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-13,702.18	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-19,183.05	
1017	For Low Ambient Protection, 0 Deg F., Add		3,332.74	
1013	1250Ton Absorption Chiller	EA	461,164.67	
1011	Quantity Discount For Heat Pump Purchases Of 35 Ea To 70 Ea		-13,657.25	
1012	Quantity Discount For Heat Pump Purchases Of 71 Ea To 100 Ea		-22,762.08	
1013	Quantity Discount For Heat Pump Purchases Over 100 Ea		-31,866.92	
1017	For Low Ambient Protection, 0 Deg F., Add		6,033.17	

15773 Ice Storage Unit

15773 1000 Ice Storage Unit, Cylindrical, W Heat Exchanger

1001	140 Tons-Hr Thermal Storage Unit	EA	12,844.49	
1002	190 Tons-Hr Thermal Storage Unit	EA	15,522.95	
1003	280 Tons-Hr Thermal Storage Unit	EA	17,616.31	
1004	590 Tons-Hr Thermal Storage Unit	EA	31,631.04	

15776 Cellular Type Evaporative Cooling Unit

15776 1000 Cellular Type Evaporative Cooling Unit Single Stage, Roof Top Unit.

15776 1100 Evaporative Cooling Unit, Residential Mbdels /Single 8" Pad

1101	4200 CFM Evap Cooling Unit, 1/2HP	EA	660.74	
1102	4800 CFM Evap Cooling Unit, 3/4HP	EA	691.30	
1103	5500 CFM Evap Cooling Unit, 3/4HP	EA	825.75	
1104	6500 CFM Evap Cooling Unit, 1 HP	EA	856.31	

15776 1200 Evaporative Cooling Unit, Commercial Mbdels /Double 8" Pad, Including Belt Pully Kit.

1201	9150 CFM Evap Cooling Unit, 3 HP	EA	1,861.99	
1202	12820CFM Evap Cooling Unit, 3 HP	EA	2,454.81	
1203	17400CFM Evap Cooling Unit, 7.5HP	EA	2,727.14	

15890 Sound Attenuators

15890 1000 Packaged Duct Sound Trap 36 In (91Cn) Long

1001	12"x12"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	229.49	12.90
1002	12"x18"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	269.36	14.78
1003	12"x24"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	309.81	16.95
1004	12"x36"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	380.05	19.09
1005	24"x18"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	392.98	19.06
1006	24"x24"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	441.30	19.92
1007	24"x30"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	495.64	21.16
1008	24"x36"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	546.42	22.36
1009	24"x48"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	661.58	25.39
1011	36"x18"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	505.34	21.12
1012	36"x36"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	715.46	25.32

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1013	36"x48"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	895.32	34.02
1014	36"x60"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	1,040.63	35.79
1015	48"x48"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	1,116.48	38.56
1016	48"x60"x36" Pkgd Duct Sound Trap (91cm) Long, Sound Attenuators	EA	1,319.97	41.86
15890 2000	Sound Trap - 60 In (152Cm) Long			
2001	12"x12"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	126.79	29.93
2002	12"x18"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	152.87	34.43
2003	12"x24"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	198.87	39.24
2004	12"x36"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	241.95	43.78
2005	24"x18"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	223.63	44.11
2006	24"x24"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	287.14	45.95
2007	24"x30"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	316.20	48.05
2008	24"x36"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	345.84	50.45
2009	24"x48"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	456.18	56.94
2011	36"x18"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	283.87	48.46
2012	36"x36"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	383.97	57.58
2013	36"x48"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	678.78	74.46
2014	36"x60"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	757.59	80.65
2015	48"x48"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	841.49	85.45
2016	48"x60"x60" Pkgd Duct Sound Trap (152cm) Long, Sound Attenuators	EA	947.09	93.82
15890 3000	Sound Trap - 84 In (214Cm) Long			
3001	6"x12"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	109.07	24.87
3002	6"x24"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	186.78	36.61
3003	6"x36"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	260.70	53.83
3004	12"x12"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	147.27	29.45
3005	12"x18"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	183.04	33.80
3006	12"x24"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	248.44	38.49
3007	12"x30"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	293.67	41.08
3008	12"x36"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	320.49	44.23
3009	12"x42"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	403.49	47.30
3011	12"x48"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	477.30	51.46
3012	24"x18"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	275.22	44.72
3013	24"x24"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	392.32	45.69
3014	24"x30"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	428.28	47.15
3015	24"x36"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	466.54	49.55
3016	24"x42"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	585.40	52.97
3017	24"x48"x84" Pkgd Duct Sound Trap (214cm) Long, Sound Attenuators	EA	635.06	56.00
15900	Controls			
15942	Controls			
15942 0010	Control components			
15942 0500	Aquastats			
0510	Control components, breaks cont, immersion, high/low limit,	EA	278.78	37.67
0514	Control components, break 2 switches, immersion, seq,	EA	231.32	22.69
0518	Control components, contact w/temp rise, immersion, circ,	EA	213.79	20.91
15942 0600	Carbon monoxide detector system			
0606	Control components, carbon monoxide detector system, panel	EA	2,678.81	
0610	Control components, carbon monoxide detector system, sensor	EA	392.31	
0850	Control components, single snap sw, controller, receiver, elec	EA	433.10	
15942 0900	Control panel readout			
0910	Control components, panel up to 12 indicators, control panel	EA	412.78	
0914	Control components, panel up to 24 indicators, control panel	EA	613.78	
0918	Control components, panel up to 48 indicators, control panel	EA	985.73	
15942 1300	Energy control/monitor			
1320	Control components, BTU computer meter, energy control/monitor	EA	1,264.60	
15942 1600	Flow meters			
1610	Control components, flow meters, gas	EA	156.28	
1620	Control components, flow meters, liquid	EA	156.28	
15942 1640	Freezestat			
1644	Control components, adjustable, freezestat, 20' sensing element	EA	132.91	
15942 2000	Gauges, pressure or vacuum			
15942 3010	Steel case, 0 - 300 psi			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3012	Pressure gauge, steel case, 0 - 300 PSI, 2" dia dial	EA	29.71	10.97
3300	Pressure gauge, for compound, add		1.94	
3014	Pressure gauge, steel case, 0 - 300 PSI, 4" dia dial	EA	46.08	13.58
3300	Pressure gauge, for compound, add		4.89	
15942 3020	Aluminum case, 0 - 300 psi			
3022	Pressure gauge, aluminum case, 0 - 300 PSI, 3.5" dia dial	EA	73.75	8.74
3300	Pressure gauge, for compound, add		9.87	
3024	Pressure gauge, aluminum case, 0 - 300 PSI, 4.5" dia dial	EA	89.65	10.67
3300	Pressure gauge, for compound, add		12.73	
3026	Pressure gauge, aluminum case, 0 - 300 PSI, 6" dia dial	EA	138.32	13.09
3300	Pressure gauge, for compound, add		21.49	
3028	Pressure gauge, aluminum case, 0 - 300 PSI, 8.5" dia dial	EA	322.80	13.73
3300	Pressure gauge, for compound, add		54.70	
15942 3030	Brass case, 0 - 300 psi			
3032	Pressure gauge, brass case, 0 - 300 PSI, 2" dia dial	EA	41.89	9.27
3300	Pressure gauge, for compound, add		4.14	
3034	Pressure gauge, brass case, 0 - 300 PSI, 4.5" dia dial	EA	76.10	9.46
3300	Pressure gauge, for compound, add		10.29	
15942 3040	Steel case, high pressure, 0 - 10,000 psi			
3042	Pressure gauge, 4.5" dia dial, stl case, high pressure, 0 - 10,	EA	145.11	11.12
3300	Pressure gauge, for compound, add		22.72	
3044	Pressure gauge, 6.5" dia dial, stl case, high pressure, 0 - 10,	EA	222.64	10.40
3300	Pressure gauge, for compound, add		36.67	
3046	Pressure gauge, 8.5" dia dial, stl case, high pressure, 0 - 10,	EA	415.33	9.46
3300	Pressure gauge, for compound, add		71.36	
15942 3080	Pressure gauge, differential, magnehelic			
3084	Pressure gauge, w/air filter, differential, magnehelic, 0-2"	EA	105.89	25.15
3300	Pressure gauge, for compound, add		9.98	
3361	Pressure gauge, direct acting, room humidistat, pneumatic	EA	179.27	12.67
15942 4000	Thermometers, thermowells, thermostats, timers			
15942 4670	Bi-metal, dial type, steel case brass stem			
4672	Thermometer, bi-metal, 2" dial, 4"-9"stem stl case brass stem	EA	50.53	10.67
4673	Thermometer, bi-metal, 2.5" dial, 4"-9"stem stl case brass stem	EA	53.29	8.70
4674	Thermometer, bi-metal, 3.5" dial, 4"-9"stem stl case brass stem	EA	53.29	8.70
15942 4680	Mercury filled, industrial, union connection typ			
4682	Thermometer, 7" scale, mercury, angle stem indl, union conn	EA	103.66	14.03
4683	Thermometer, 9" scale, mercury, angle stem indl, union conn	EA	103.66	14.03
4684	Thermometer, 12" scale, mercury, angle stem indl, union conn	EA	112.42	10.97
4686	Thermometer, 7" scale, mercury, str stem indl, union conn type	EA	110.18	14.22
4687	Thermometer, 9" scale, mercury, str stem indl, union conn type	EA	110.18	13.16
4688	Thermometer, 12" scale, mercury, str stem indl, union conn type	EA	125.87	11.88
15942 4690	Mercury filled, industrial, separable socket typ			
4692	Thermometer, 7" scale, mercury, angle stem indl, sep socket	EA	74.23	9.98
4693	Thermometer, 9" scale, mercury, angle stem indl, sep socket	EA	85.05	11.46
4694	Thermometer, 12" scale, mercury, angle stem indl, sep socket	EA	98.14	9.57
4696	Thermometer, 7" scale, mercury, str stem indl, sep socket type	EA	74.23	8.17
4697	Thermometer, 9" scale, mercury, str stem indl, sep socket type	EA	85.05	8.24
4698	Thermometer, 12" scale, mercury, str stem indl, sep socket type	EA	98.14	9.27
15942 4700	Thermowells			
4710	Thermowell, 4" Long, 1" NPT, 304 SS	EA	59.85	
4720	Thermowell, 8" Long, 1" NPT, 304 SS	EA	65.97	
15942 5000	Thermostats			
5210	Thermostats, room thermostat, 1 potentiometer	EA	138.36	7.16
5212	Thermostats, room thermostat, 2 potentiometer	EA	253.82	12.59
5220	Thermostats, electric, low voltage, 2 wire	EA	34.95	7.69
5230	Thermostats, electric, low voltage, 3 wire	EA	44.27	9.93
5236	Thermostats, low voltage, heating/cooling w/clock	EA	159.05	12.41
5260	Thermostats, pneumatic, direct acting for VAV fan, dual temp	EA	213.05	13.24
5262	Thermostats, pneumatic, capillary tube type, 20', -30 to +100 deg	EA	254.00	13.24
15942 5500	Timer/time clocks			
5510	Timer/time clocks, 7 Day, 12 hr battery	EA	350.09	50.07
5612	Recorders, hydrograph humidity, grad chart 8", wall mtd, al case	EA	839.89	81.80
5618	Recorders, hydrograph, wall mount, for portable unit, add		50.00	
5614	Recorders, hydrograph humidity, grad chart 10", wall mtd, al case	EA	1,241.68	99.96

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5616	Recorders, hydrograph, wall mount, for remote mount, add	EA	1,327.70	98.56
5622	Recorders, thermo-hydrograph, 5' sst probe 8", wall mtd, grad	EA	670.12	52.08
5628	<i>Recorders, thermo-hydrograph, wal mount, for portable unit, add</i>		50.00	
5624	Recorders, thermo-hydrograph, 5' sst probe 10", wall mtd, grad	EA	1,011.93	67.66
5628	<i>Recorders, thermo-hydrograph, wal mount, for portable unit, add</i>		50.00	
5626	Recorders, thermo-hydrograph, wall mount, for remote mount, add	EA	1,350.34	84.60
5632	Recorders, time of operation, wall mtd, 1 pen cap, 24 hr 6"	EA	618.06	96.93
5634	Recorders, time of operation, wall mtd, 1 pen cap, 24 hr 8"	EA	804.81	87.86
5636	10"Time of Oper Recorder, Wall Mt 1 Pen Capillary, 24Hr Clock, 110V	EA	747.95	76.70
5638	12"Time of Oper Recorder, Wall Mt 1 Pen Capillary, 24Hr Clock, 110V	EA	821.49	76.37
5644	Recorders, pressure & vacuum flush mt 1 pen 6", bourdon tube	EA	584.10	81.09
5646	Recorders, pressure & vacuum flush mt 1 pen 8", bourdon tube	EA	981.37	118.49
5648	Recorders, pressure & vacuum flush mt 1 pen 10", bourdon tube	EA	864.79	82.03
5650	Recorders, pressure & vacuum flush mt 1 pen 12", bourdon tube	EA	966.65	83.36
15942 7090 Valves, motor controlled, including actuator				
15942 7110 Three Way Mxing Globe Valves, Includes Electric Actuator.				
7112	1/2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	401.51	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		7.76	
7114	3/4" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	431.21	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		8.29	
7116	1" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	484.32	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		9.33	
7118	1-1/4" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	545.42	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		10.37	
7120	1-1/2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	845.28	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		16.37	
7122	2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	950.85	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		17.91	
7124	2-1/2" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,248.67	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		21.94	
7126	3" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,474.20	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		25.83	
7128	4" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,829.09	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		32.01	
7130	5" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	2,294.41	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		39.80	
7132	6" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	2,626.26	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		46.43	
15942 7140 Two-Way Butterfly Valve,				
Note: CI Lug Body, SST Stem EPDM Seat/0-Ring, Includes Electric Actuator				
7142	4" B-fly Valve W Pneu Actuator	EA	1,001.87	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		15.99	
7144	5" B-fly Valve W Pneu Actuator	EA	1,103.24	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		16.90	
7146	6" B-fly Valve W Pneu Actuator	EA	1,189.59	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		17.54	
7148	8" B-fly Valve W Pneu Actuator	EA	1,672.96	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		26.52	
7150	10" B-fly Valve W Pneu Actuator	EA	1,769.48	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		27.53	
7152	12" B-fly Valve W Pneu Actuator	EA	2,109.19	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		31.85	
7154	14" B-fly Valve W Pneu Actuator	EA	3,353.71	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		53.50	
7156	16" B-fly Valve W Pneu Actuator	EA	3,805.42	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		58.83	
15942 7170 Three-Way Butterfly Valve,				
Note: CI Lug Body, SST Stem EPDM Seat/0-Ring, Includes Electric Actuator				
7172	4" B-fly Valve W Pneu Actuator	EA	1,342.21	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		21.56	
7174	5" B-fly Valve W Pneu Actuator	EA	1,536.51	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		23.99	
7176	6" B-fly Valve W Pneu Actuator	EA	1,658.96	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		25.06	
7178	8" B-fly Valve W Pneu Actuator	EA	2,253.13	
8650	<i>Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add</i>		36.01	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7180	10" B-fly Valve W Pneu Actuator	EA	2,915.26	
8650	Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add		48.08	
7182	12" B-fly Valve W Pneu Actuator	EA	3,581.61	
8650	Valve, pneu, air opr, brass, 2 or 3-way, screwd, for low press st, add		58.05	
15942 7190	Temperature Sensors			
7192	Temperature Sensor For Electrically Controlled Steam	EA	439.69	
15942 7209	Electric motor actuated			
7210	Valves, elec motor actuated, 1/2" pipe, brass, 2 way, scrd	EA	219.09	
7220	Valves, elec motor actuated, 3/4" pipe, brass, 2 way, scrd	EA	245.62	
7230	Valves, elec motor actuated, 1" pipe, brass, 2 way, scrd	EA	264.34	
7240	Valves, elec motor actuated, 1.5" pipe, brass, 2 way, scrd	EA	366.25	
7250	Valves, elec motor actuated, 2" pipe, brass, 2 way, scrd	EA	489.19	
7370	Valves, elec motor actuated, 3/4" pipe, brass, 3 way, scrd	EA	267.37	
7380	Valves, elec motor actuated, 1" pipe, brass, 3 way, scrd	EA	287.48	
7384	Valves, elec motor actuated, 1.25" pipe, brass, 3 way, scrd	EA	314.36	
7390	Valves, elec motor actuated, 1.5" pipe, brass, 3 way, scrd	EA	397.69	
7400	Valves, elec motor actuated, 2" pipe, brass, 3 way, scrd	EA	527.69	
7560	Valves, elec motor actuated, 2.5" pipe, iron body, 2 way, flgd	EA	861.33	
7570	Valves, elec motor actuated, 3" pipe, iron body, 2 way, flgd	EA	1,011.17	
7580	Valves, elec motor actuated, 4" pipe, iron body, 2 way, flgd	EA	1,280.91	
7860	Valves, elec motor actuated, 2.5" pipe, iron body, 3 way, flgd	EA	979.71	
7870	Valves, elec motor actuated, 3" pipe, iron body, 3 way, flgd	EA	1,170.21	
7880	Valves, elec motor actuated, 4" pipe, iron body, 3 way, flgd	EA	1,473.38	
7888	4" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,638.51	
15942 7900	Brass, Two Way, Screwed Electric Mtor Actuated			
7902	1/2" Two Way Electric Control Valve	EA	196.47	
7904	3/4" Two Way Electric Control Valve	EA	221.78	
7906	1" Two Way Electric Control Valve	EA	249.58	
7908	1-1/2" Two Way Electric Control Valve	EA	343.80	
7910	2" Two Way Electric Control Valve	EA	514.95	
15942 7920	Brass, Three Way, Screwed Electric Mtor Actuated			
7922	1/2" Three Way Electric Control Valve	EA	246.92	
7924	3/4" Three Way Electric Control Valve	EA	289.94	
7926	1" Three Way Electric Control Valve	EA	371.04	
7928	1-1/2" Three Way Electric Control Valve	EA	380.16	
7930	2" Three Way Electric Control Valve	EA	581.69	
15942 7940	Iron Body, Two Way, Flanged Electric Mtor Actuated			
7942	2-1/2" Two Way Electric Control Valve	EA	733.77	
7944	3" Two Way Electric Control Valve	EA	905.07	
7946	4" Two Way Electric Control Valve	EA	1,294.34	
7948	6" Two Way Electric Control Valve	EA	3,122.77	
15942 7960	Iron Body, Three Way, Flanged Electric Mtor Actuated			
7962	2-1/2" Three Way Electric Control Valve	EA	1,118.31	
7964	3" Three Way Electric Control Valve	EA	1,348.64	
7966	4" Three Way Electric Control Valve	EA	1,567.55	
7968	6" Three Way Electric Control Valve	EA	3,769.15	
15942 7970	Two Way Equal Percentage Globe Valves, Includes Electric Actuator			
7972	1/2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	387.05	
7974	3/4" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	409.70	
7976	1" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	431.97	
7978	1-1/4" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	470.99	
7980	1-1/2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	819.59	
7982	2" Thrd, Brnz Body & Seat, SST Stem Normally Open	EA	890.78	
7984	2-1/2" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,175.77	
7986	3" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	1,284.66	
7990	5" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	2,089.27	
7992	6" Flgd, Brnz Body & Seat, SST Stem Normally Open	EA	2,543.24	
15942 8000	Pneumatic, air operated			
	Note: Seated, Straight- Through Construction (Two-Way Mixing Valve)			
8060	Valves, pneu, 1/2" pipe, CL 250, air opr, brass, 2 way, scrd	EA	104.21	
8070	Valves, pneu, 3/4" pipe, CL 250, air opr, brass, 2 way, scrd	EA	138.04	
8080	Valves, pneu, 1" pipe, CL 250, air opr, brass, 2 way, scrd	EA	156.06	
8090	Valves, pneu, 1.25" pipe, CL 125, air opr, brass, 2 way, scrd	EA	223.64	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8100	Valves, pneu, 1.5" pipe,CL 125, air opr, brass, 2 way, scrd	EA	255.29	
8110	Valves, pneu, 2" pipe,CL 125, air opr, brass, 2 way, scrd	EA	304.24	
8190	Valves, pneu, 1/2" pipe,CL 250, air opr, brass, 3 way, scrd	EA	160.89	
8200	Valves, pneu, 3/4" pipe,CL 250, air opr, brass, 3 way, scrd	EA	154.61	
8210	Valves, pneu, 1" pipe,CL 250, air opr, brass, 3 way, scrd	EA	167.17	
8214	Valves, pneu, 1.25" pipe,CL 250, air opr, brass, 3 way, scrd	EA	167.33	
8220	Valves, pneu, 1.5" pipe,CL 125, air opr, brass, 3 way, scrd	EA	284.26	
8230	Valves, pneu, 2" pipe,CL 125, air opr, brass, 3 way, scrd	EA	511.01	
8232	Electric To Pneumatic Transducer	EA	215.04	
8234	2-1/2" Unit Ventilator Valve, Normally Open	EA	766.47	
8236	3" Unit Ventilator Valve, Normally Open	EA	870.58	
8238	4" Unit Ventilator Valve, Normally Open	EA	1,839.41	
8240	6" Unit Ventilator Valve, Normally Open	EA	2,559.88	
8250	2-1/2" Three Way Mixing Valve	EA	1,165.91	
8252	3" Three Way Mixing Valve	EA	2,058.79	
8254	4" Three Way Mixing Valve	EA	2,280.50	
8256	6" Three Way Mixing Valve	EA	3,250.41	
15942 8300	Urethane Tubing, Fire Retardant			
8302	1/8" OD x 1/16" ID Tubing	LF	5.01	
8304	1/4" OD x 1/8" ID Tubing	LF	5.78	
8306	3/8" OD x 1/4" ID Tubing	LF	5.41	
8310	4" B-fly Valve W Pneu Actuator	EA	532.41	
8320	5" B-fly Valve W Pneu Actuator	EA	778.33	
8330	6" B-fly Valve W Pneu Actuator	EA	864.62	
8340	8" B-fly Valve W Pneu Actuator	EA	999.11	
15942 8350	Tubing Accessories, Brass			
8350	10" B-fly Valve W Pneu Actuator	EA	1,243.08	
15942 8351	Straight Coupling, BARB&BARB			
8352	1/4" x 1/4" ST Coupling	EA	3.79	
8354	3/8" x 1/4" ST Coupling	EA	3.84	
8356	3/8" x 3/8" ST Coupling	EA	3.90	
15942 8360	Elbow Coupling, BARB&BARB			
8360	12" B-fly Valve W Pneu Actuator	EA	1,586.91	
8362	1/4" x 1/4" EL Coupling	EA	4.12	
8364	3/8" x 3/8" EL Coupling	EA	4.32	
15942 8370	Tee Coupling, BARB&BARB			
8370	14" B-fly Valve W Pneu Actuator	EA	2,389.79	
8372	1/4" x 1/4" x 1/4" Tee Coupling	EA	6.24	
8374	3/8" x 3/8" x 1/4" Tee Coupling	EA	7.34	
8376	3/8" x 3/8" x 3/8" Tee Coupling	EA	7.13	
8380	16" B-fly Valve W Pneu Actuator	EA	2,841.85	
15942 8400	Three-Way Butterfly Valve,			
Note: CI Lug Body, SST Stem, EPDM Seat/O-Ring, Includes Pneumatic Actuator				
8410	4" B-fly Valve W Pneu Actuator	EA	871.16	
8420	5" B-fly Valve W Pneu Actuator	EA	1,212.05	
8430	6" B-fly Valve W Pneu Actuator	EA	1,334.12	
8440	8" B-fly Valve W Pneu Actuator	EA	1,577.05	
8450	10" B-fly Valve W Pneu Actuator	EA	2,346.42	
8460	12" B-fly Valve W Pneu Actuator	EA	3,052.65	
15942 8500	Two-way Equal Percentage Globe Valves, Includes Pneumatic Actuator			
8502	1/2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	175.06	
8504	3/4" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	202.13	
8506	1" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	228.90	
8508	1-1/4" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	267.98	
8510	1-1/2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	395.26	
8512	2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	471.36	
8514	2-1/2" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	756.89	
8516	3" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	920.32	
8518	4" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	1,178.40	
8520	5" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	1,661.82	
8522	6" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	2,108.30	
15942 8600	Three Way Mixing Globe Valve, Includes Pneumatic Actuator.			
8602	1/2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	205.12	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8604	3/4" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	253.80	
8606	1" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	321.61	
8608	1-1/4" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	378.59	
8610	1-1/2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	470.32	
8612	2" Thrd, Brnz Body & Seat, SST Stem, Normally Open	EA	581.58	
8614	2-1/2" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	806.77	
8616	3" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	1,168.32	
8618	4" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	1,521.72	
8620	5" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	1,948.14	
8622	6" Flgd, Brnz Body & Seat, SST Stem, Normally Open	EA	2,325.25	
15942 8700 Valve, pneumatic operated for water				
8710	Valves, pneumatic operated, for water, 3 pipe, 3/8"	EA	146.16	
8790	Valves, pneu operated, for water, for low pressure steam add		2.67	
8720	Valves, pneumatic operated, for water, 3 pipe, 1/2"	EA	147.30	
8790	Valves, pneu operated, for water, for low pressure steam add		2.67	
8730	Valves, pneumatic operated, for water, 3 pipe, 3/4"	EA	159.42	
8790	Valves, pneu operated, for water, for low pressure steam add		2.85	
15942 9249 Valve, proportional-only control				
9250	Pressure controller & switches, single input, prop-only control	EA	288.25	
15943 0010 Control components/DDC system				
15943 1000 Stand-alone Controllers				
Note: Including Programming Capability via Mdem And Terminal Emulator Software (eg PROCOMM); Step Down Transformer; Communications Card; Block Programming (Not Line Programming); ASHREA Cycle 2 & 3 With And Without Cooling. Barber Colman Or Equal.				
15943 1100 Stand-alone Unit Controllers				
Note: Includes Programming Capability, Local Operator Interface, Step Down Transformer, Scheduling & Battery Backup Where Applicable.				
1101	3AI, 8D0 Stand-alone Unit Controller	EA	518.94	
1102	3AI, 6D0, 2A0 Stand-alone Unit Controller	EA	518.94	
1103	6AI, 8D0, 4C0 Stand-alone Unit Controller	EA	589.64	
1104	6AI, 6D0 Stand-alone Unit Controller	EA	589.64	
1105	16Univ Pnts Cabinet, Control End Item (NW 8000 GCS)	EA	5,332.51	
15943 1199 Stand-alone Multipurpose Controllers				
Note: Includes Programming Capability, Local Operator Interface, Step Down Transformer, Scheduling & Battery Backup Where Applicable.				
15943 1200 Stand Alone Controllers Accessories				
1201	8AI, 2CI, 2C0 Stand-alone Multipurpose Controller	EA	1,048.02	
15943 1202 Stand Alone Controllers DOS Configuration				
Note: Software, Includes Disk Storage, Password Access, Point Configuration, User-Defined Programming, Scheduling, Real-Time Point Status Viewing, Point Trending, Alarm Grouping, Database Utilities.				
1202	3AI, 2A0, 2DI, 3D0. TRANE 10 Point PCM Or Equal	EA	2,567.84	
1203	6AI, 4A0, 4DI, 6D0. TRANE 20 Point PCM Or Equal	EA	2,942.58	
1204	DOS Configuration Software	EA	622.17	
1205	TRACER L Or Equal	EA	6,393.29	
1206	TRACER 1001 Or Equal	EA	9,468.99	
1207	TRACER Summit BCU Panel Or Equal	EA	10,560.62	
1208	36 Point Panel. Panel Programmed In Line Code	EA	5,119.39	
15943 1210 Handheld Operator Interface				
Note: , Allows Direct Connection To Stand-Alone Controllers, Includes Display, Keypad & 10 Ft RJ-11 Cable.				
1212	Handheld Operator Interface	EA	639.84	
15943 1220 Laptop Interface Module, Allows Direct				
Note: Connection To Stand-alone Controllers, INcludes 2 Ft DB-25 To DB-9 Cable & 25 Ft RJ-11 Cable.				
1222	Laptop Interface Module	EA	589.17	
15943 1230 DDC Control Components				
15943 1232 Electronic Temperature Sensors, Includes Platinum RTD Sensing Element.				
1234	Room Sensor W/ Cover	EA	171.63	
1236	Room Sensor W/ Cover & Digital Temp Display	EA	235.85	
1238	Duct Sensor	EA	177.53	
1240	Duct Averaging Sensor	EA	224.66	
1242	Immersion Sensor	EA	194.02	
1244	Outside Air Sensor W/Sunshield	EA	173.99	
1246	Low Temp Switch W/Manual Reset	EA	239.98	
1248	Strap-on Changeover Sensor	EA	173.99	
15943 1250 Electronic Humidity Sensors, Includes Non-Organic Resistance Sensing Element.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1252	Room Sensor W Cover	EA	427.52	
1254	Duct Sensor	EA	432.24	
15943	1260 Electronic Pressure Sensors, Includes Neoprene Diaphragm Sensing Element.			
1262	Diff Pressure Switch	EA	190.09	
1264	Air Diff Pressure Transmitter	EA	309.10	
1266	Water Diff Pressure Transmitter	EA	379.80	
1268	CFM Diff Pressure Transmitter	EA	669.67	
15943	1270 Miscellaneous Sensors			
1272	Relay W Enclosure	EA	190.43	
1274	Elec/Pneu Transducer W Filter & Enclosure	EA	311.46	
1276	Elec Smoke Detector W Ionization Det Heads	EA	518.70	
1278	Water Level Switch	EA	353.88	
1280	Water Flow Switch	EA	337.38	
15943	1290 DDC Control Enclosures, NEMA 12, Includes Locking Cover.			
1292	24" x 16" x 7", 18Ga Enclosure, NEMA 12	EA	251.40	
1294	24" x 32" x 7", 18Ga Enclosure, NEMA 12	EA	325.64	
1296	42" x 36" x 7", 16Ga Enclosure, NEMA 12	EA	536.56	
15943	2000 Status			
2140	DDC sys compnt, (incl matl&L), diff press, (water), dgtl in,	EA	780.00	
2210	DDC sys compnt, (incl matl&L), start/stop, dgtl out, status	EA	320.00	
2220	DDC sys compnt, (incl matl&L), on/off, dgtl out, status (alarm)	EA	550.00	
15944	0010 Control systems, pneumatic			
15944	0100 Heating and ventilating, split system			
0220	Control sys, pneu, pnl rdout, to 10t, air mix cntrl, econ, HVAC,	EA	4,472.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		670.80	
0242	Control sys, pneu, pnl rdout, 10-20t, air mix cntrl, econ, HVAC,	EA	4,830.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		724.50	
0262	Control sys, pneu, pnl rdout, abv 20t, air mix cntrl, econ, HVAC,	EA	5,230.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		784.50	
0320	Control sys, pneu, limit, rdout, htg coil, HW 3way v, frzstat,	EA	3,200.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		480.00	
0520	Control sys, pneu, thermo, 3 way v, cool coil, CHW room, HVAC,	EA	1,355.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		203.25	
0620	Control sys, pneu, cond, wtr rdout, cool twr, fan, dmpr cntrl,	EA	5,034.59	
0265	Control sys, for HVAC split sys, for electronic control sys, add		564.47	
15944	1000 Unit ventilator			
1100	Control sys, pneu, ASHRAE, cycle 2, day/night opn, freezestat,	EA	3,310.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		496.50	
15944	2000 Valve control, compensated hot water from boiler Control, Read Out And Reset At Panel			
2100	Control sys, pneu, to 60 GPM v cntrl, rdout&reset at pnl, HW	EA	5,910.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		886.50	
2122	Control sys, pneu, 120 GPM v cntrl, rdout&reset at pnl, HW	EA	6,324.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		948.60	
2142	Control sys, pneu, 240 GPM v cntrl, rdout&reset at pnl, HW	EA	6,620.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		993.00	
15944	2999 Boiler room combustion air, damper, controls			
3000	Control sys, pneu, controls, blr room combustion air, damper to	EA	2,675.00	
0265	Control sys, for HVAC split sys, for electronic control sys, add		401.25	
3500	Control sys, pneu, 4 pipe sys, fan coil, heating & cooling valves	EA	1,157.19	
0265	Control sys, for HVAC split sys, for electronic control sys, add		131.01	
15944	4500 Air supply			
Note: Tank Mounted Duplex Compressor, Starter, Alternator, Piping, Dryer, Prv Station And Filter				
4630	Cont sys, pneu, PRV sta&fltr, 0.5HP, tk mtd dx cprsr, start,	EA	8,535.00	
4660	Cont sys, pneu, PRV sta&fltr, 1.5HP, tk mtd dx cprsr, start,	EA	10,370.00	
4680	Cont sys, pneu, PRV sta&fltr, 3 HP, tk mtd dx cprsr, start, altntr, ai	EA	13,510.00	
4690	Cont sys, pneu, PRV sta&fltr, 5 HP, tk mtd dx cprsr, start, altntr, ai	EA	22,645.00	
15944	5000 Water Level Controls			
5010	Electric Water Feeder 2 GPM Maxi	EA	142.88	
5020	Feeder Cut-Off Combination Steam System Up to 5000 Sq. Ft.	EA	252.19	
5030	Feeder Cut-Off Combination Steam System Above 5000 Sq. Ft.	EA	252.19	
5040	Feeder Cut-Off Combination Steam & Hot Water High Pressure	EA	274.56	
5050	Feeder Cut-Off For HW Boiler 50 PSI Max 1" Top & Bottom	EA	128.71	
5060	Feeder Cut-Off For HW Boiler 50 PSI Max 2-1/2" Side Conn For	EA	101.50	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5070	Feeder Cut-Off For Low Press Steam w/Quick Hook-Up Ftgs For	EA	245.73	
5080	Pump Control Low Water Cut-Off & Alarm Switch	EA	264.67	
15944 5100	Removal & Reinstallation Of Primary Ctrl Devices			
	Note: Includes Storage And Cleaning			
5110	Remove & Reinstall Control Devices And Sensors	EA	36.49	
5120	Remove & Reinstall Room Thermostats	EA	46.92	
5130	Remove & Reinstall Zone Control Valves	EA	59.41	
15944 8000	Pneumatic/Electric Controls			
15944 8200	Control Components			
8201	controller, rcvr, pneu, pnl mou nt, single input	EA	300.13	
8202	contrlr, rcvr, pneu, pnl mt, sgl inp ut, W/cvsrn mtg brkt	EA	310.32	
8203	controller, rcvr, pneu, pnl mt, dual input, W/CPA	EA	412.85	
8204	controller, receiver, elec, sin gle snap switch	EA	382.37	
8205	controller, receiver, elec, dua l snap switches	EA	487.18	
8206	Control cmnt,enthalpy cont,blr wtr temp cont,W/timer	EA	232.52	
8207	Control components, gauges, pres sure or vacuum 2" diameter dia	EA	17.25	
8208	gauges, pressure or vacuum 2-1 /2" diameter dial	EA	19.91	
8209	gauges, pressure or vacuum 3-1 /2" diameter dial	EA	24.38	
8210	gauges, pressure or vacuum 4-1 /2" diameter dial	EA	36.27	
8211	gauges, flg iron case, bk ring, 3-1/2" dia dial	EA	74.75	
8212	gauges, flg iron case, bk ring, 4-1/2" dia dial	EA	101.35	
8213	gauges, flg iron case, black ri ng, 6" dia dial	EA	80.97	
8214	humidistat, pneumatic operation , elec operated	EA	56.18	
8215	Control components, relays, pneu matic/electric	EA	204.95	
8216	Control components, relays, pneu matic proportioning	EA	115.08	
8217	Control components, relays, pneu matic switching	EA	101.05	
8218	Control components, relays, sele ctor, 3 point	EA	76.47	
8219	Control components, relays, time delay	EA	263.91	
8220	Control components, sensor, air operated, humi dity	EA	232.12	
8221	Control components, sensor, air operated, pressure	EA	144.97	
8222	Control components, sensor, air operated, temperature	EA	112.94	
8223	Control components, sensor, elec tric operated, humi dity	EA	30.46	
8224	Control components, sensor, elec tric operated, pressure	EA	921.20	
8225	Control components, sensor, elec tric operated, temperature	EA	109.37	
8226	thermometers, dial type, 3-1/2" dia, vap type, un conn	EA	108.70	
8227	thermometers, dial type, 3-1/2" dia, liq type, un conn	EA	151.71	
8228	thermometers,stem type,6-1/2" ca se,2" stem 1/2" NPT	EA	62.30	
8229	thermometers,stem type,6-1/2" ca se,4" stem 1/2" NPT	EA	85.50	
8230	thermometers,stem type,9" case,3 -1/2" stem 3/4" NPT	EA	103.21	
8231	thermometers, stem type, 9" cas e, 6" stem 3/4" NPT	EA	110.00	
8232	thermometers, stem type, 9" cas e, 8" stem 3/4" NPT	EA	134.90	
8233	thermometers, stem type, 9" cas e, 12" stem 1" NPT	EA	148.60	
8234	Control components, thermostats, manual	EA	32.41	
8235	Control components, thermostats, 1 set back, electric, timed	EA	94.09	
8236	Control components, thermostats, 2 set back, electric, timed	EA	124.65	
8237	Control components, thermostats, locking cover	EA	15.51	
8238	Control components, thermostats, 24 hour, automatic, clock	EA	118.99	
8239	Thermostats, electric, low volta ge, 2 wire	EA	22.03	
8240	Thermostats, electric, low volta ge, 3 wire	EA	27.32	
8241	transmitter, pneu, temperature averaging element	EA	115.94	
8242	transmitter, pneumatic, pressur e differential	EA	622.24	
8243	Control components, transmitter, pneumatic, humi dity, duct	EA	211.85	
8244	Control components, transmitter, pneumatic, humi dity, room	EA	191.03	
8245	transmitter, pneu, temp, with a veraging element	EA	124.01	
8246	Control components, transmitter, electric operated, humi dity	EA	60.45	
8247	transmitter, electric operated, humi dity, DPST	EA	83.09	
8248	valves, motorized zone, sweat c onns, 1/2" C x C	EA	69.80	
8249	valves, motorized zone, sweat c onns, 3/4" C x C	EA	69.80	
8250	valves, motorized zone, sweat c onns, 1" C x C	EA	69.90	
8251	vs, mtized zone, swt conns, 1/ 2" C x C, W/end sw, 2 W	EA	88.47	
8252	vs, mtized zone, swt conns, 3/ 4" C x C, W/end sw, 2 W	EA	88.47	
8253	vs, mtized zone, swt conns, 1" C x C, W/end sw, 2 W	EA	101.59	
8254	vs, mtized zone, swt conns, 1- 1/4" cxc, W/end sw, 2 W	EA	116.83	
8255	Valves, elec motor actuated, bra ss, 2 way, scrd, 1/2" pipe	EA	219.34	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8256	Valves, elec motor actuated, bra ss, 2 way, scrd, 3/4" pipe	EA	258.23	
8257	Valves, elec motor actuated, bra ss, 2 way, scrd, 1" pipe size	EA	278.78	
8258	Valves, elec motor actuated, bra ss, 2 way, scrd, 1.5" pipe	EA	388.68	
8259	Valves, elec motor actuated, bra ss, 2 way, scrd, 2" pipe size	EA	496.92	
8260	vs, elec mot actuated, brs, 3 way, scrd, 1/2" pipe	EA	236.50	
8261	Valves, elec motor actuated, bra ss, 3 way, scrd, 3/4" pipe	EA	276.61	
8262	Valves, elec motor actuated, bra ss, 3 way, scrd, 1" pipe size	EA	290.36	
8263	Valves, elec motor actuated, bra ss, 3 way, scrd, 1.25" pipe siz	EA	310.21	
8264	Valves, elec motor actuated, bra ss, 3 way, scrd, 1.5" pipe	EA	417.42	
8265	Valves, elec motor actuated, bra ss, 3 way, scrd, 2" pipe size	EA	548.50	
8266	Valves, elec motor actuated, iron body, 2 way, flgd, 2.5" pipe	EA	403.14	
8267	elec motor actuated, iron body, 2 way, flgd, 3" pipe size	EA	533.75	
8268	elec motor actuated, iron body, 2 way, flgd, 4" pipe size	EA	761.00	
8269	Valves, elec motor actuated, iron body, 3 way, flgd, 2.5" pipe	EA	969.49	
8270	elec motor actuated, iron body, 3 way, flgd, 3" pipe size	EA	1,138.49	
8271	elec motor actuated, iron body, 3 way, flgd, 4" pipe size	EA	1,451.40	
8272	Valves, pneu, air opr, brass, 2 way, scrd, 1/2" pipe size, CL 250	EA	110.79	
8273	Valves, pneu, air opr, brass, 2 way, scrd, 3/4" pipe size, CL 250	EA	147.89	
8274	Valves, pneu, air opr, brass, 2 way, scrd, 1" pipe size, CL 250	EA	168.37	
8275	pneu, air opr, brass, 2 way, sc rd, 1.25" pipe size, CL 125	EA	244.73	
8276	Valves, pneu, air opr, brass, 2 way, scrd, 1.5" pipe size, CL 125	EA	280.20	
8277	Valves, pneu, air opr, brass, 2 way, scrd, 2" pipe size, CL 125	EA	318.08	
8278	Valves, pneu, air opr, brass, 3 way, scrd, 1/2" pipe size, CL 250	EA	169.23	
8279	Valves, pneu, air opr, brass, 3 way, scrd, 3/4" pipe size, CL 250	EA	166.21	
8280	Valves, pneu, air opr, brass, 3 way, scrd, 1" pipe size, CL 250	EA	191.24	
8281	pneu, air opr, brass, 3 way, sc rd, 1.25" pipe size, CL 250	EA	160.02	
8282	Valves, pneu, air opr, brass, 3 way, scrd, 1.5" pipe size, CL 125	EA	307.90	
8283	Valves, pneu, air opr, brass, 3 way, scrd, 2" pipe size, CL 125	EA	547.47	
8284	vs, pneu, air oper, ib, 2way flg, 2-1/2" pipe size, 250lb flg	EA	3,072.98	
8285	vs, pneu, air oper, ib, 2 way, flg, 3" pipe size, 250 LB flg	EA	3,272.95	
8286	vs, pneu, air oper, ib, 2 way, flg, 4" pipe size, 250 LB flg	EA	3,989.82	
8287	vs, pneu, air oper, ib, 3 way, flg, 2-1/2" pipe size, CL 125	EA	749.01	
8288	Control cmpnt, vs, pneu, air oper, i b, 3 way, flg, 3" pipe size, CL 125	EA	926.81	
8289	Control cmpnt, vs, pneu, air oper, i b, 3 way, flg, 4" pipe size, CL 125	EA	1,845.08	
8290	Control cmpnt, vs, pneu, air oper, i b, 3 way, flg, 6" pipe size, CL 125	EA	2,526.29	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16001 Raceways				
16010 Cable Trays				
16010 1110 Cable Tray Solid Bottom				
1111	Cable tray solid bottom galvani zed steel, tray, 6" wide	LF	8.26	
1112	Cable tray solid bottom galvani zed steel, 12" wide	LF	10.47	
1113	Cable tray solid bottom galvani zed steel, 18" wide	LF	12.99	
1114	Cable tray solid bottom galvani zed steel, 24" wide	LF	15.18	
1115	Cable tray solid bottom galvani zed steel, 30" wide	LF	18.04	
1116	Cable tray solid bottom galvani zed steel, 36" wide	LF	25.43	
1117	galv steel, elb horiz 90<, 12" radius, 6" wide	EA	65.49	
1118	galv steel, elb horiz 90<, 12" radius, 12" wide	EA	75.50	
1119	galv steel, elb horiz 90<, 12" radius, 18" wide	EA	87.50	
1120	galv steel, elb horiz 90<, 12" radius, 24" wide	EA	106.75	
1121	galv steel, elb horiz 90<, 12" radius, 30" wide	EA	126.73	
1122	galv steel, elb horiz 90<, 12" radius, 36" wide	EA	144.03	
1123	galv steel, elb horiz 90<, 24" radius, 6" wide	EA	90.21	
1124	galv steel, elb horiz 90<, 24" radius, 12" wide	EA	107.52	
1125	galv steel, elb horiz 90<, 24" radius, 18" wide	EA	125.73	
1126	galv steel, elb horiz 90<, 24" radius, 24" wide	EA	147.87	
1127	galv steel, elb horiz 90<, 24" radius, 30" wide	EA	173.08	
1128	galv steel, elb horiz 90<, 24" radius, 36" wide	EA	194.45	
1129	galv steel, elb horiz 90<, 36" radius, 6" wide	EA	128.90	
1130	galv steel, elb horiz 90<, 36" radius, 12" wide	EA	147.77	
1131	galv steel, elb horiz 90<, 36" radius, 18" wide	EA	181.58	
1132	galv steel, elb horiz 90<, 36" radius, 24" wide	EA	199.80	
1133	galv steel, elb horiz 90<, 36" radius, 30" wide	EA	239.77	
1134	galv steel, elb horiz 90<, 36" radius, 36" wide	EA	270.13	
1135	galv steel, elb vertical 90<, 1 2" rad, 6" wide	EA	78.27	
1136	galv steel, elb vertical 90<, 1 2" rad, 12" wide	EA	84.80	
1137	galv steel, elb vertical 90<, 1 2" rad, 18" wide	EA	88.66	
1138	galv steel, elb vertical 90<, 1 2" rad, 24" wide	EA	104.43	
1139	galv steel, elb vertical 90<, 1 2" rad, 30" wide	EA	112.79	
1140	galv steel, elb vertical 90<, 1 2" rad, 36" wide	EA	118.47	
1141	galv steel, elb vertical 90<, 2 4" rad, 6" wide	EA	107.64	
1142	galv steel, elb vertical 90<, 2 4" rad, 12" wide	EA	120.30	
1143	galv steel, elb vertical 90<, 2 4" rad, 18" wide	EA	132.70	
1144	galv steel, elb vertical 90<, 2 4" rad, 24" wide	EA	146.71	
1145	galv steel, elb vertical 90<, 2 4" rad, 30" wide	EA	156.81	
1146	galv steel, elb vertical 90<, 2 4" rad, 36" wide	EA	172.37	
1147	galv steel, elb vertical 90<, 3 6" rad, 6" wide	EA	144.01	
1148	galv steel, elb vertical 90<, 3 6" rad, 12" wide	EA	162.96	
1149	galv steel, elb vertical 90<, 3 6" rad, 18" wide	EA	181.58	
1150	galv steel, elb vertical 90<, 3 6" rad, 24" wide	EA	202.13	
1151	galv steel, elb vertical 90<, 3 6" rad, 30" wide	EA	222.34	
1152	galv steel, elb vertical 90<, 3 6" rad, 36" wide	EA	243.41	
1153	galv steel, tee horizontal, 12" radi us, 6" wide	EA	95.52	
1154	galv steel, tee horiz, 12" radi us, 12" wide	EA	106.04	
1155	galv steel, tee horiz, 12" radi us, 18" wide	EA	125.44	
1156	galv steel, tee horiz, 12" radi us, 24" wide	EA	142.69	
1157	galv steel, tee horiz, 12" radi us, 30" wide	EA	160.91	
1158	galv steel, tee horiz, 12" radi us, 36" wide	EA	185.62	
1159	Cable tray solid bot, galv steel , tee horiz, 24" radius, 6" wid	EA	142.07	
1160	galv steel, tee horiz, 24" radi us, 12" wide	EA	167.27	
1161	galv steel, tee horiz, 24" radi us, 18" wide	EA	187.48	
1162	galv steel, tee horiz, 24" radi us, 24" wide	EA	251.49	
1163	galv steel, tee horiz, 24" radi us, 30" wide	EA	273.93	
1164	galv steel, tee horiz, 24" radi us, 36" wide	EA	300.84	
1165	Cable tray solid bot, galv steel , tee horiz, 36" radius, 6" wid	EA	215.59	
1166	galv steel, tee horiz, 36" radi us, 12" wide	EA	244.10	
1167	galv steel, tee horiz, 36" radi us, 18" wide	EA	268.97	
1168	galv steel, tee horiz, 36" radi us, 24" wide	EA	342.48	
1169	galv steel, tee horiz, 36" radi us, 30" wide	EA	372.43	
1170	galv steel, tee horiz, 36" radi us, 36" wide	EA	392.92	
1171	galv steel, tee vertical, 12" r adius, 6" wide	EA	147.81	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1172	galv steel, tee vertical, 12" r adius, 12" wide	EA	157.17	
1173	galv steel, tee vertical, 12" r adius, 18" wide	EA	161.46	
1174	galv steel, tee vertical, 12" r adius, 24" wide	EA	176.56	
1175	galv steel, tee vertical, 12" r adius, 30" wide	EA	189.80	
1176	galv steel, tee vertical, 12" r adius, 36" wide	EA	199.25	
1177	galv steel, tee vertical, 24" r adius, 6" wide	EA	212.95	
1178	galv steel, tee vertical, 24" r adius, 12" wide	EA	226.53	
1179	galv steel, tee vertical, 24" r adius, 18" wide	EA	239.45	
1180	galv steel, tee vertical, 24" r adius, 24" wide	EA	251.39	
1181	galv steel, tee vertical, 24" r adius, 30" wide	EA	277.10	
1182	galv steel, tee vertical, 24" r adius, 36" wide	EA	293.68	
1183	galv steel, tee vertical, 36" r adius, 6" wide	EA	324.81	
1184	galv steel, tee vertical, 36" r adius, 12" wide	EA	335.89	
1185	galv steel, tee vertical, 36" r adius, 18" wide	EA	362.30	
1186	galv steel, tee vertical, 36" r adius, 24" wide	EA	375.87	
1187	galv steel, tee vertical, 36" r adius, 30" wide	EA	438.93	
1188	galv steel, tee vertical, 36" r adius, 36" wide	EA	465.39	
1189	galv steel, cross horiz, 12" ra dius, 6" wide	EA	115.34	
1190	galv steel, cross horiz, 12" ra dius, 12" wide	EA	126.60	
1191	galv steel, cross horiz, 12" ra dius, 18" wide	EA	149.66	
1192	galv steel, cross horiz, 12" ra dius, 24" wide	EA	168.99	
1193	galv steel, cross horiz, 12" ra dius, 30" wide	EA	191.16	
1194	galv steel, cross horiz, 12" ra dius, 36" wide	EA	210.21	
1195	galv steel, cross horiz, 24" ra dius, 6" wide	EA	197.48	
1196	galv steel, cross horiz, 24" ra dius, 12" wide	EA	222.34	
1197	galv steel, cross horiz, 24" ra dius, 18" wide	EA	251.49	
1198	galv steel, cross horiz, 24" ra dius, 24" wide	EA	320.14	
1199	galv steel, cross horiz, 24" ra dius, 30" wide	EA	347.32	
1200	galv steel, cross horiz, 24" ra dius, 36" wide	EA	369.68	
1201	galv steel, cross horiz, 36" ra dius, 6" wide	EA	312.65	
1202	galv steel, cross horiz, 36" ra dius, 12" wide	EA	346.82	
1203	galv steel, cross horiz, 36" ra dius, 18" wide	EA	384.05	
1204	galv steel, cross horiz, 36" ra dius, 24" wide	EA	451.90	
1205	galv steel, cross horiz, 36" ra dius, 30" wide	EA	491.69	
1206	galv steel, cross horiz, 36" ra dius, 36" wide	EA	527.07	
1207	galvanized steel, drop out or e nd plate, 6" wide	EA	14.07	
1208	galv steel, drop out or end pla te, 12" wide	EA	17.49	
1209	galv steel, drop out or end pla te, 18" wide	EA	19.02	
1210	galv steel, drop out or end pla te, 24" wide	EA	22.20	
1211	galv steel, drop out or end pla te, 30" wide	EA	24.86	
1212	galv steel, drop out or end pla te, 36" wide	EA	26.80	
1213	galvanized steel, reducer, 12" to 6" wide	EA	62.85	
1214	galvanized steel, reducer, 18" to 12" wide	EA	64.79	
1215	galvanized steel, reducer, 18" to 6" wide	EA	64.79	
1216	galvanized steel, reducer, 24" to 18" wide	EA	68.13	
1217	galvanized steel, reducer, 24" to 12" wide	EA	68.13	
1218	galvanized steel, reducer, 30" to 24" wide	EA	73.94	
1219	galvanized steel, reducer, 30" to 18" wide	EA	73.94	
1220	galvanized steel, reducer, 30" to 12" wide	EA	73.94	
1221	galvanized steel, reducer, 36" to 30" wide	EA	77.24	
1222	galvanized steel, reducer, 36" to 24" wide	EA	77.24	
1223	galvanized steel, reducer, 36" to 18" wide	EA	77.24	
1224	galvanized steel, reducer, 36" to 12" wide	EA	77.24	
1225	Cable tray solid bottom aluminu m tray, 6" wide	LF	9.71	
1226	Cable tray solid bottom aluminu m tray, 12" wide	LF	12.69	
1227	Cable tray solid bottom aluminu m tray, 18" wide	LF	15.93	
1228	Cable tray solid bottom aluminu m tray, 24" wide	LF	20.02	
1229	Cable tray solid bottom aluminu m tray, 30" wide	LF	23.68	
1230	Cable tray solid bottom aluminu m tray, 36" wide	LF	29.58	
1231	alum tray, elb horiz 90<, 12" r adius, 6" wide	EA	81.76	
1232	alum tray, elb horiz 90<, 12" r adius, 12" wide	EA	92.99	
1233	alum tray, elb horiz 90<, 12" r adius, 18" wide	EA	112.68	
1234	alum tray, elb horiz 90<, 12" r adius, 24" wide	EA	129.59	
1235	alum tray, elb horiz 90<, 12" r adius, 30" wide	EA	157.10	
1236	alum tray, elb horiz 90<, 12" r adius, 36" wide	EA	176.47	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1237	alum tray, elb horiz 90<, 24" r adius, 6" wide	EA	113.45	
1238	alum tray, elb horiz 90<, 24" r adius, 12" wide	EA	135.34	
1239	alum tray, elb horiz 90<, 24" r adius, 18" wide	EA	154.00	
1240	alum tray, elb horiz 90<, 24" r adius, 24" wide	EA	189.75	
1241	alum tray, elb horiz 90<, 24" r adius, 30" wide	EA	217.60	
1242	alum tray, elb horiz 90<, 24" r adius, 36" wide	EA	250.12	
1243	alum tray, elb horiz 90<, 36" r adius, 6" wide	EA	164.93	
1244	alum tray, elb horiz 90<, 36" r adius, 12" wide	EA	198.67	
1245	alum tray, elb horiz 90<, 36" r adius, 18" wide	EA	234.92	
1246	alum tray, elb horiz 90<, 36" r adius, 24" wide	EA	253.54	
1247	alum tray, elb horiz 90<, 36" r adius, 30" wide	EA	287.63	
1248	alum tray, elb horiz 90<, 36" r adius, 36" wide	EA	336.92	
1249	alum tray, elb vertical 90<, 12 " rad, 6" wide	EA	95.70	
1250	alum tray, elb vertical 90<, 12 " rad, 12" wide	EA	101.13	
1251	alum tray, elb vertical 90<, 12 " rad, 18" wide	EA	113.84	
1252	alum tray, elb vertical 90<, 12 " rad, 24" wide	EA	121.45	
1253	alum tray, elb vertical 90<, 12 " rad, 30" wide	EA	130.38	
1254	alum tray, elb vertical 90<, 12 " rad, 36" wide	EA	135.80	
1255	alum tray, elb vertical 90<, 24 " rad, 6" wide	EA	133.20	
1256	alum tray, elb vertical 90<, 24 " rad, 12" wide	EA	145.80	
1257	alum tray, elb vertical 90<, 24 " rad, 18" wide	EA	157.49	
1258	alum tray, elb vertical 90<, 24 " rad, 24" wide	EA	172.32	
1259	alum tray, elb vertical 90<, 24 " rad, 30" wide	EA	183.90	
1260	alum tray, elb vertical 90<, 24 " rad, 36" wide	EA	203.64	
1261	alum tray, elb vertical 90<, 36 " rad, 6" wide	EA	173.06	
1262	alum tray, elb vertical 90<, 36 " rad, 12" wide	EA	196.34	
1263	alum tray, elb vertical 90<, 36 " rad, 18" wide	EA	214.00	
1264	alum tray, elb vertical 90<, 36 " rad, 24" wide	EA	224.50	
1265	alum tray, elb vertical 90<, 36 " rad, 30" wide	EA	249.28	
1266	alum tray, elb vertical 90<, 36 " rad, 36" wide	EA	261.39	
1267	alum tray, tee horizontal, 12" radius, 6" wide	EA	129.21	
1268	alum tray, tee horizontal, 12" radius, 12" wide	EA	155.56	
1269	alum tray, tee horizontal, 12" radius, 18" wide	EA	174.60	
1270	alum tray, tee horizontal, 12" radius, 24" wide	EA	195.16	
1271	alum tray, tee horizontal, 12" radius, 30" wide	EA	225.82	
1272	alum tray, tee horizontal, 12" radius, 36" wide	EA	261.94	
1273	alum tray, tee horizontal, 24" radius, 6" wide	EA	204.82	
1274	alum tray, tee horizontal, 24" radius, 12" wide	EA	231.53	
1275	alum tray, tee horizontal, 24" radius, 18" wide	EA	261.39	
1276	alum tray, tee horizontal, 24" radius, 24" wide	EA	319.94	
1277	alum tray, tee horizontal, 24" radius, 30" wide	EA	366.52	
1278	alum tray, tee horizontal, 24" radius, 36" wide	EA	409.88	
1279	alum tray, tee horizontal, 36" radius, 6" wide	EA	324.81	
1280	alum tray, tee horizontal, 36" radius, 12" wide	EA	356.67	
1281	alum tray, tee horizontal, 36" radius, 18" wide	EA	411.42	
1282	alum tray, tee horizontal, 36" radius, 24" wide	EA	480.45	
1283	alum tray, tee horizontal, 36" radius, 30" wide	EA	535.10	
1284	alum tray, tee horizontal, 36" radius, 36" wide	EA	597.14	
1285	alum tray, tee vertical, 12" ra dius, 6" wide	EA	178.02	
1286	alum tray, tee vertical, 12" ra dius, 12" wide	EA	183.44	
1287	alum tray, tee vertical, 12" ra dius, 18" wide	EA	191.18	
1288	alum tray, tee vertical, 12" ra dius, 24" wide	EA	203.64	
1289	alum tray, tee vertical, 12" ra dius, 30" wide	EA	221.88	
1290	alum tray, tee vertical, 12" ra dius, 36" wide	EA	237.44	
1291	alum tray, tee vertical, 24" ra dius, 6" wide	EA	257.11	
1292	alum tray, tee vertical, 24" ra dius, 12" wide	EA	273.36	
1293	alum tray, tee vertical, 24" ra dius, 18" wide	EA	291.73	
1294	alum tray, tee vertical, 24" ra dius, 24" wide	EA	316.00	
1295	alum tray, tee vertical, 24" ra dius, 30" wide	EA	347.51	
1296	alum tray, tee vertical, 24" ra dius, 36" wide	EA	370.06	
1297	alum tray, tee vertical, 36" ra dius, 6" wide	EA	394.53	
1298	alum tray, tee vertical, 36" ra dius, 12" wide	EA	415.93	
1299	alum tray, tee vertical, 36" ra dius, 18" wide	EA	439.17	
1300	alum tray, tee vertical, 36" ra dius, 24" wide	EA	452.09	
1301	alum tray, tee vertical, 36" ra dius, 30" wide	EA	490.12	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1302	alum tray, tee vertical, 36" ra dius, 36" wide	EA	543.50	
1303	alum tray, cross horiz, 12" rad ius, 6" wide	EA	162.53	
1304	alum tray, cross horiz, 12" rad ius, 12" wide	EA	182.73	
1305	alum tray, cross horiz, 12" rad ius, 18" wide	EA	209.10	
1306	alum tray, cross horiz, 12" rad ius, 24" wide	EA	239.13	
1307	alum tray, cross horiz, 12" rad ius, 30" wide	EA	268.97	
1308	alum tray, cross horiz, 12" rad ius, 36" wide	EA	299.49	
1309	alum tray, cross horiz, 24" rad ius, 6" wide	EA	273.36	
1310	alum tray, cross horiz, 24" rad ius, 12" wide	EA	316.00	
1311	alum tray, cross horiz, 24" rad ius, 18" wide	EA	345.50	
1312	alum tray, cross horiz, 24" rad ius, 24" wide	EA	418.81	
1313	alum tray, cross horiz, 24" rad ius, 30" wide	EA	462.17	
1314	alum tray, cross horiz, 24" rad ius, 36" wide	EA	486.76	
1315	alum tray, cross horiz, 36" rad ius, 6" wide	EA	467.06	
1316	alum tray, cross horiz, 36" rad ius, 12" wide	EA	492.76	
1317	alum tray, cross horiz, 36" rad ius, 18" wide	EA	550.16	
1318	alum tray, cross horiz, 36" rad ius, 24" wide	EA	604.82	
1319	alum tray, cross horiz, 36" rad ius, 30" wide	EA	655.24	
1320	alum tray, cross horiz, 36" rad ius, 36" wide	EA	764.75	
1321	alum tray, dropout, or end plat e, 6" wide	EA	16.92	
1322	alum tray, dropout, or end plat e, 12" wide	EA	19.35	
1323	alum tray, dropout, or end plat e, 18" wide	EA	23.09	
1324	alum tray, dropout, or end plat e, 24" wide	EA	25.45	
1325	alum tray, dropout, or end plat e, 30" wide	EA	29.50	
1326	alum tray, dropout, or end plat e, 36" wide	EA	34.06	
1327	Cable tray solid bottom aluminu m tray, reducer, 12" to 6" wide	EA	77.11	
1328	Cable tray solid bottom aluminu m tray, reducer, 18" to 12" wid	EA	80.28	
1329	Cable tray solid bottom aluminu m tray, reducer, 18" to 6" wide	EA	80.28	
1330	Cable tray solid bottom aluminu m tray, reducer, 24" to 18" wid	EA	85.70	
1331	Cable tray solid bottom aluminu m tray, reducer, 24" to 12" wid	EA	85.70	
1332	Cable tray solid bottom aluminu m tray, reducer, 30" to 24" wid	EA	93.70	
1333	Cable tray solid bottom aluminu m tray, reducer, 30" to 18" wid	EA	93.70	
1334	Cable tray solid bottom aluminu m tray, reducer, 30" to 12" wid	EA	93.70	
1335	Cable tray solid bottom aluminu m tray, reducer, 36" to 30" wid	EA	99.50	
1336	Cable tray solid bottom aluminu m tray, reducer, 36" to 24" wid	EA	100.67	
1337	Cable tray solid bottom aluminu m tray, reducer, 36" to 18" wid	EA	100.67	
1338	Cable tray solid bottom aluminu m tray, reducer, 36" to 12" wid	EA	102.99	
1360	alum elbow horizontal 60<, 12" radius, 6" wide	EA	74.16	
1361	alum elbow horizontal 60<, 12" radius, 9" wide	EA	80.73	
1362	alum elbow horizontal 60<, 12" radius, 12" wide	EA	88.93	
1363	alum elbow horizontal 60<, 12" radius, 18" wide	EA	95.89	
1364	alum elbow horizontal 60<, 12" radius, 24" wide	EA	117.02	
1365	alum elbow horizontal 45<, 12" radius, 6" wide	EA	64.64	
1366	alum elbow horizontal 45<, 12" radius, 9" wide	EA	68.84	
1367	alum elbow horizontal 45<, 12" radius, 12" wide	EA	73.49	
1368	alum elbow horizontal 45<, 12" radius, 18" wide	EA	82.70	
1369	alum elbow horizontal 45<, 12" radius, 24" wide	EA	95.52	
1370	alum elbow horizontal, 30< 12" radius, 6" wide	EA	57.45	
1371	alum elbow horizontal, 30< 12" radius, 9" wide	EA	60.46	
1372	alum elbow horizontal, 30< 12" radius, 12' wide	EA	65.04	
1373	alum elbow horizontal, 30< 12" radius, 18" wide	EA	70.70	
1374	alum elbow horizontal, 30< 12" radius, 24" wide	EA	78.71	
1375	alum elb vert 60< in/outside, 12" rad, 6" wide	EA	89.27	
1376	alum elb vert 60< in/outside, 12" rad, 9" wide	EA	91.19	
1377	alum elb vert 60< in/outside, 12" rad, 12" wide	EA	93.58	
1378	alum elb vert 60< in/outside, 12" rad, 18" wide	EA	98.22	
1379	alum elb vert 60< in/outside, 12" rad, 24" wide	EA	104.24	
1380	alum elb vert 45< in/outside, 12" rad, 6" wide	EA	73.94	
1381	alum elb vert 45< in/outside, 12" rad, 9" wide	EA	78.14	
1382	alum elb vert 45< in/outside, 12" rad, 12" wide	EA	81.62	
1383	alum elb vert 45< in/outside, 12" rad, 18" wide	EA	85.02	
1384	alum elb vert 45< in/outside, 12" rad, 24" wide	EA	94.36	
1385	alum elb vert 30< in/outside, 12" rad, 6" wide	EA	64.42	
1386	alum elb vert 30< in/outside, 12" rad, 9" wide	EA	68.59	
1387	alum elb vert 30< in/outside, 12" rad, 12" wide	EA	70.85	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1388	alum elb vert 30< in/outside, 12" rad, 18" wide	EA	74.19	
1389	alum elb vert 30< in/outside, 12" rad, 24" wide	EA	77.55	
1390	alum reducer, left or right ha nd, 24" to 18" wide	EA	93.26	
1391	alum reducer, left or right ha nd, 24" to 12" wide	EA	93.26	
1392	alum reducer, left or right ha nd, 24" to 9" wide	EA	93.26	
1393	alum reducer, left or right ha nd, 24" to 6" wide	EA	94.43	
1394	alum reducer, left or right ha nd, 18" to 12" wide	EA	86.40	
1395	alum reducer, left or right ha nd, 18" to 9" wide	EA	86.40	
1396	alum reducer, left or right ha nd, 18" to 6" wide	EA	86.40	
1397	alum reducer, left or right ha nd, 12" to 9" wide	EA	81.75	
1398	alum reducer, left or right ha nd, 12" to 6" wide	EA	81.75	
1399	alum reducer, left or right ha nd, 9" to 6" wide	EA	79.11	
16010 2120 Cable Tray Trough				
2121	Cable tray trough, vented, galva nized steel, tray, 6" wide	LF	10.90	
2122	Cable tray trough, vented, galva nized steel, 12" wide	LF	13.21	
2123	Cable tray trough, vented, galva nized steel, 18" wide	LF	15.84	
2124	Cable tray trough, vented, galva nized steel, 24" wide	LF	18.20	
2125	Cable tray trough, vented, galva nized steel, 30" wide	LF	25.82	
2126	Cable tray trough, vented, galva nized steel, 36" wide	LF	29.08	
2127	vented, elbow horizontal 90<, 1 2" radius, 6" wide	EA	71.50	
2128	vented, elbow horizontal 90<, 1 2" radius, 12" wide	EA	86.44	
2129	vented, elbow horizontal 90<, 1 2" radius, 18" wide	EA	100.94	
2130	vented, elbow horizontal 90<, 1 2" radius, 24" wide	EA	124.28	
2131	vented, elbow horizontal 90<, 1 2" radius, 30" wide	EA	140.68	
2132	vented, elbow horizontal 90<, 1 2" radius, 36" wide	EA	162.44	
2133	vented, elbow horizontal 90<, 2 4" radius, 6" wide	EA	101.65	
2134	vented, elbow horizontal 90<, 2 4" radius, 12" wide	EA	119.38	
2135	vented, elbow horizontal 90<, 2 4" radius, 18" wide	EA	145.55	
2136	vented, elbow horizontal 90<, 2 4" radius, 24" wide	EA	166.24	
2137	vented, elbow horizontal 90<, 2 4" radius, 30" wide	EA	191.49	
2138	vented, elbow horizontal 90<, 2 4" radius, 36" wide	EA	222.44	
2139	vented, elbow horizontal 90<, 3 6" radius, 6" wide	EA	147.54	
2140	vented, elbow horizontal 90<, 3 6" radius, 12" wide	EA	171.64	
2141	vented, elbow horizontal 90<, 3 6" radius, 18" wide	EA	207.94	
2142	vented, elbow horizontal 90<, 3 6" radius, 24" wide	EA	224.03	
2143	vented, elbow horizontal 90<, 3 6" radius, 30" wide	EA	252.65	
2144	vented, elbow horizontal 90<, 3 6" radius, 36" wide	EA	284.12	
2145	vented, elbow vertical 90<, 12" radius, 6" wide	EA	89.51	
2146	vented, elbow vertical 90<, 12" radius, 12" wide	EA	102.13	
2147	vented, elbow vertical 90<, 12" radius, 18" wide	EA	106.75	
2148	vented, elbow vertical 90<, 12" radius, 24" wide	EA	123.11	
2149	vented, elbow vertical 90<, 12" radius, 30" wide	EA	127.90	
2150	vented, elbow vertical 90<, 12" radius, 36" wide	EA	136.88	
2151	vented, elbow vertical 90<, 24" radius, 6" wide	EA	124.88	
2152	vented, elbow vertical 90<, 24" radius, 12" wide	EA	135.65	
2153	vented, elbow vertical 90<, 24" radius, 18" wide	EA	152.52	
2154	vented, elbow vertical 90<, 24" radius, 24" wide	EA	161.60	
2155	vented, elbow vertical 90<, 24" radius, 30" wide	EA	182.20	
2156	vented, elbow vertical 90<, 24" radius, 36" wide	EA	193.39	
2157	vented, elbow vertical 90<, 36" radius, 6" wide	EA	166.13	
2158	vented, elbow vertical 90<, 36" radius, 12" wide	EA	179.77	
2159	vented, elbow vertical 90<, 36" radius, 18" wide	EA	203.29	
2160	vented, elbow vertical 90<, 36" radius, 24" wide	EA	221.70	
2161	vented, elbow vertical 90<, 36" radius, 30" wide	EA	230.57	
2162	vented, elbow vertical 90<, 36" radius, 36" wide	EA	258.56	
2163	Cable tray trough, vented, tee h orizontal, 12" radius, 6" wide	EA	111.85	
2164	Cable tray trough, vented, tee h orizontal, 12" radius, 12" wide	EA	126.74	
2165	Cable tray trough, vented, tee h orizontal, 12" radius, 18" wide	EA	143.85	
2166	Cable tray trough, vented, tee h orizontal, 12" radius, 24" wide	EA	166.66	
2167	Cable tray trough, vented, tee h orizontal, 12" radius, 30" wide	EA	189.11	
2168	Cable tray trough, vented, tee h orizontal, 12" radius, 36" wide	EA	207.43	
2169	Cable tray trough, vented, tee h orizontal, 24" radius, 6" wide	EA	175.40	
2170	Cable tray trough, vented, tee h orizontal, 24" radius, 12" wide	EA	194.98	
2171	Cable tray trough, vented, tee h orizontal, 24" radius, 18" wide	EA	218.95	
2172	Cable tray trough, vented, tee h orizontal, 24" radius, 24" wide	EA	281.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2173	Cable tray trough, vented, tee h orizontal, 24" radius, 30" wide	EA	306.65	
2174	Cable tray trough, vented, tee h orizontal, 24" radius, 36" wide	EA	339.47	
2175	Cable tray trough, vented, tee h orizontal, 36" radius, 6" wide	EA	245.26	
2176	Cable tray trough, vented, tee h orizontal, 36" radius, 12" wide	EA	284.02	
2177	Cable tray trough, vented, tee h orizontal, 36" radius, 18" wide	EA	313.17	
2178	Cable tray trough, vented, tee h orizontal, 36" radius, 24" wide	EA	378.98	
2179	Cable tray trough, vented, tee h orizontal, 36" radius, 30" wide	EA	405.06	
2180	Cable tray trough, vented, tee h orizontal, 36" radius, 36" wide	EA	477.41	
2181	Cable tray trough, vented, tee v ertical, 12" radius, 6" wide	EA	174.60	
2182	Cable tray trough, vented, tee v ertical, 12" radius, 12" wide	EA	181.35	
2183	Cable tray trough, vented, tee v ertical, 12" radius, 18" wide	EA	186.32	
2184	Cable tray trough, vented, tee v ertical, 12" radius, 24" wide	EA	197.30	
2185	Cable tray trough, vented, tee v ertical, 12" radius, 30" wide	EA	209.71	
2186	Cable tray trough, vented, tee v ertical, 12" radius, 36" wide	EA	218.15	
2187	Cable tray trough, vented, tee v ertical, 24" radius, 6" wide	EA	230.02	
2188	Cable tray trough, vented, tee v ertical, 24" radius, 12" wide	EA	246.10	
2189	Cable tray trough, vented, tee v ertical, 24" radius, 18" wide	EA	258.51	
2190	Cable tray trough, vented, tee v ertical, 24" radius, 24" wide	EA	278.21	
2191	Cable tray trough, vented, tee v ertical, 24" radius, 30" wide	EA	293.68	
2192	Cable tray trough, vented, tee v ertical, 24" radius, 36" wide	EA	322.92	
2193	Cable tray trough, vented, tee v ertical, 36" radius, 6" wide	EA	356.81	
2194	Cable tray trough, vented, tee v ertical, 36" radius, 12" wide	EA	372.33	
2195	Cable tray trough, vented, tee v ertical, 36" radius, 18" wide	EA	386.64	
2196	Cable tray trough, vented, tee v ertical, 36" radius, 24" wide	EA	413.10	
2197	Cable tray trough, vented, tee v ertical, 36" radius, 30" wide	EA	475.14	
2198	Cable tray trough, vented, tee v ertical, 36" radius, 36" wide	EA	492.21	
2199	Cable tray trough, vented, cross horizontal, 12" radius, 6" wide	EA	143.00	
2200	vented, cross horizontal, 12" r adius, 12" wide	EA	147.34	
2201	vented, cross horizontal, 12" r adius, 18" wide	EA	165.50	
2202	vented, cross horizontal, 12" r adius, 24" wide	EA	178.38	
2203	vented, cross horizontal, 12" r adius, 30" wide	EA	199.75	
2204	vented, cross horizontal, 12" r adius, 36" wide	EA	224.43	
2205	Cable tray trough, vented, cross horizontal, 24" radius, 6" wide	EA	214.73	
2206	vented, cross horizontal, 24" r adius, 12" wide	EA	228.25	
2207	vented, cross horizontal, 24" r adius, 18" wide	EA	253.91	
2208	vented, cross horizontal, 24" r adius, 24" wide	EA	322.04	
2209	vented, cross horizontal, 24" r adius, 30" wide	EA	357.42	
2210	vented, cross horizontal, 24" r adius, 36" wide	EA	384.45	
2211	Cable tray trough, vented, cross horizontal, 36" radius, 6" wide	EA	354.90	
2212	vented, cross horizontal, 36" r adius, 12" wide	EA	371.27	
2213	vented, cross horizontal, 36" r adius, 18" wide	EA	387.11	
2214	vented, cross horizontal, 36" r adius, 24" wide	EA	471.60	
2215	vented, cross horizontal, 36" r adius, 30" wide	EA	524.09	
2216	vented, cross horizontal, 36" r adius, 36" wide	EA	576.68	
2217	Cable tray trough, vented, dropo ut or end plate, 6" wide	EA	16.73	
2218	Cable tray trough, vented, dropo ut or end plate, 12" wide	EA	20.36	
2219	Cable tray trough, vented, dropo ut or end plate, 18" wide	EA	22.32	
2220	Cable tray trough, vented, dropo ut or end plate, 24" wide	EA	25.49	
2221	Cable tray trough, vented, dropo ut or end plate, 30" wide	EA	27.55	
2222	Cable tray trough, vented, dropo ut or end plate, 36" wide	EA	30.85	
2223	Cable tray trough, vented, reduc er, 12" to 6" wide	EA	66.22	
2224	Cable tray trough, vented, reduc er, 18" to 12" wide	EA	69.44	
2225	Cable tray trough, vented, reduc er, 18" to 6" wide	EA	69.44	
2226	Cable tray trough, vented, reduc er, 24" to 18" wide	EA	74.92	
2227	Cable tray trough, vented, reduc er, 24" to 12" wide	EA	74.92	
2228	Cable tray trough, vented, reduc er, 30" to 24" wide	EA	78.47	
2229	Cable tray trough, vented, reduc er, 30" to 18" wide	EA	78.47	
2230	Cable tray trough, vented, reduc er, 30" to 12" wide	EA	78.47	
2231	Cable tray trough, vented, reduc er, 36" to 30" wide	EA	84.27	
2232	Cable tray trough, vented, reduc er, 36" to 24" wide	EA	84.27	
2233	Cable tray trough, vented, reduc er, 36" to 18" wide	EA	85.43	
2234	Cable tray trough, vented, reduc er, 36" to 12" wide	EA	85.43	
2235	Cable tray trough, aluminum tra y, vented, 6" wide	LF	12.79	
2236	Cable tray trough, aluminum tra y, 9" wide	LF	14.35	
2237	Cable tray trough, aluminum tra y, 12" wide	LF	16.05	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2238	Cable tray trough, aluminum tra y, 18" wide	LF	19.15	
2239	Cable tray trough, aluminum tra y, 24" wide	LF	22.50	
2240	Cable tray trough, aluminum tra y, 30" wide	LF	30.07	
2241	Cable tray trough, aluminum tra y, 36" wide	LF	32.55	
2242	aluminum elbow horiz. 90<, 12" radius, 6" wide	EA	89.51	
2243	aluminum elbow horiz. 90<, 12" radius, 9" wide	EA	97.28	
2244	aluminum elbow horiz. 90<, 12" radius, 12" wide	EA	104.40	
2245	aluminum elbow horiz. 90<, 12" radius, 18" wide	EA	120.72	
2246	aluminum elbow horiz. 90<, 12" radius, 24" wide	EA	140.91	
2247	aluminum elbow horiz. 90<, 12" radius, 30" wide	EA	172.27	
2248	aluminum elbow horiz. 90<, 12" radius, 36" wide	EA	188.18	
2249	aluminum elbow horiz. 90<, 24" radius, 6" wide	EA	126.05	
2250	aluminum elbow horiz. 90<, 24" radius, 12" wide	EA	148.18	
2251	aluminum elbow horiz. 90<, 24" radius, 18" wide	EA	170.51	
2252	aluminum elbow horiz. 90<, 24" radius, 24" wide	EA	195.83	
2253	aluminum elbow horiz. 90<, 24" radius, 30" wide	EA	224.21	
2254	aluminum elbow horiz. 90<, 24" radius, 36" wide	EA	242.93	
2255	aluminum elbow horiz. 90<, 36" radius, 6" wide	EA	174.27	
2256	aluminum elbow horiz. 90<, 36" radius, 12" wide	EA	200.21	
2257	aluminum elbow horiz. 90<, 36" radius, 18" wide	EA	227.41	
2258	aluminum elbow horiz. 90<, 36" radius, 24" wide	EA	251.06	
2259	aluminum elbow horiz. 90<, 36" radius, 30" wide	EA	293.92	
2260	aluminum elbow horiz. 90<, 36" radius, 36" wide	EA	321.63	
2261	aluminum elbow vertical 90<, 1 2" radius, 6" wide	EA	106.94	
2262	aluminum elbow vertical 90<, 1 2" radius, 9" wide	EA	113.54	
2263	aluminum elbow vertical 90<, 1 2" radius, 12" wide	EA	116.02	
2264	aluminum elbow vertical 90<, 1 2" radius, 18" wide	EA	120.72	
2265	aluminum elbow vertical 90<, 1 2" radius, 24" wide	EA	135.10	
2266	aluminum elbow vertical 90<, 1 2" radius, 30" wide	EA	143.22	
2267	aluminum elbow vertical 90<, 1 2" radius, 36" wide	EA	146.35	
2268	aluminum elbow vertical 90<, 2 4" radius, 6" wide	EA	141.15	
2269	aluminum elbow vertical 90<, 2 4" radius, 12" wide	EA	155.15	
2270	aluminum elbow vertical 90<, 2 4" radius, 18" wide	EA	169.34	
2271	aluminum elbow vertical 90<, 2 4" radius, 24" wide	EA	174.92	
2272	aluminum elbow vertical 90<, 2 4" radius, 30" wide	EA	185.86	
2273	aluminum elbow vertical 90<, 2 4" radius, 36" wide	EA	196.45	
2274	aluminum elbow vertical 90<, 3 6" radius, 6" wide	EA	173.11	
2275	aluminum elbow vertical 90<, 3 6" radius, 12" wide	EA	187.42	
2276	aluminum elbow vertical 90<, 3 6" radius, 18" wide	EA	209.98	
2277	aluminum elbow vertical 90<, 3 6" radius, 24" wide	EA	230.15	
2278	aluminum elbow vertical 90<, 3 6" radius, 30" wide	EA	253.25	
2279	aluminum elbow vertical 90<, 3 6" radius, 36" wide	EA	264.69	
2280	Cable tray trough, aluminum tee horizontal, 12" radius, 6" wide	EA	139.74	
2281	Cable tray trough, aluminum tee horizontal, 12" radius, 9" wide	EA	144.16	
2282	aluminum tee horizontal, 12" r adius, 12" wide	EA	155.65	
2283	aluminum tee horizontal, 12" r adius, 18" wide	EA	180.19	
2284	aluminum tee horizontal, 12" r adius, 24" wide	EA	206.60	
2285	aluminum tee horizontal, 12" r adius, 30" wide	EA	223.60	
2286	aluminum tee horizontal, 12" r adius, 36" wide	EA	253.01	
2287	Cable tray trough, aluminum tee horizontal, 24" radius, 6" wide	EA	205.61	
2288	aluminum tee horizontal, 24" r adius, 12" wide	EA	233.64	
2289	aluminum tee horizontal, 24" r adius, 18" wide	EA	257.72	
2290	aluminum tee horizontal, 24" r adius, 24" wide	EA	320.04	
2291	aluminum tee horizontal, 24" r adius, 30" wide	EA	349.19	
2292	aluminum tee horizontal, 24" r adius, 36" wide	EA	405.42	
2293	Cable tray trough, aluminum tee horizontal, 36" radius, 6" wide	EA	320.78	
2294	aluminum tee horizontal, 36" r adius, 12" wide	EA	368.11	
2295	aluminum tee horizontal, 36" r adius, 18" wide	EA	418.81	
2296	aluminum tee horizontal, 36" r adius, 24" wide	EA	488.63	
2297	aluminum tee horizontal, 36" r adius, 30" wide	EA	526.55	
2298	aluminum tee horizontal, 36" r adius, 36" wide	EA	608.40	
2299	Cable tray trough, aluminum tee vertical, 12" radius, 6" wide	EA	185.05	
16010 2300	Cable Tray, Covers And Dividers			
2300	Cable tray trough, aluminum tee vertical, 12" radius, 9" wide	EA	187.15	
2301	Cable tray trough, aluminum tee vertical, 12" radius, 12" wide	EA	200.97	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2302	Cable tray trough, aluminum tee vertical, 12" radius, 18" wide	EA	203.29	
2303	Cable tray trough, aluminum tee vertical, 12" radius, 24" wide	EA	209.24	
2304	Cable tray trough, aluminum tee vertical, 12" radius, 30" wide	EA	218.85	
2305	Cable tray trough, aluminum tee vertical, 12" radius, 36" wide	EA	230.62	
2306	Cable tray trough, aluminum tee vertical, 24" radius, 6" wide	EA	256.74	
2307	Cable tray trough, aluminum tee vertical, 24" radius, 12" wide	EA	277.79	
2308	Cable tray trough, aluminum tee vertical, 24" radius, 18" wide	EA	296.70	
2309	Cable tray trough, aluminum tee vertical, 24" radius, 24" wide	EA	315.82	
2310	Cable tray trough, aluminum tee vertical, 24" radius, 30" wide	EA	341.01	
2311	Cable tray trough, aluminum tee vertical, 24" radius, 36" wide	EA	351.78	
2312	Cable tray trough, aluminum tee vertical, 36" radius, 6" wide	EA	388.18	
2313	Cable tray trough, aluminum tee vertical, 36" radius, 12" wide	EA	414.59	
2314	Cable tray trough, aluminum tee vertical, 36" radius, 18" wide	EA	428.16	
2315	Cable tray trough, aluminum tee vertical, 36" radius, 24" wide	EA	459.48	
2316	Cable tray trough, aluminum tee vertical, 36" radius, 30" wide	EA	497.03	
2317	Cable tray trough, aluminum tee vertical, 36" radius, 36" wide	EA	527.43	
2318	aluminum cross horizontal, 12" radius, 6" wide	EA	171.92	
2319	aluminum cross horizontal, 12" radius, 9" wide	EA	183.54	
2320	aluminum cross horizontal, 12" radius, 12" wide	EA	189.48	
2321	aluminum cross horizontal, 12" radius, 18" wide	EA	200.79	
2322	aluminum cross horizontal, 12" radius, 24" wide	EA	224.76	
2323	aluminum cross horizontal, 12" radius, 30" wide	EA	269.28	
2324	aluminum cross horizontal, 12" radius, 36" wide	EA	325.24	
2325	aluminum cross horizontal, 24" radius, 6" wide	EA	295.22	
2326	aluminum cross horizontal, 24" radius, 12" wide	EA	323.95	
2327	aluminum cross horizontal, 24" radius, 18" wide	EA	351.41	
2328	aluminum cross horizontal, 24" radius, 24" wide	EA	407.29	
2329	aluminum cross horizontal, 24" radius, 30" wide	EA	440.28	
2330	aluminum cross horizontal, 24" radius, 36" wide	EA	503.83	
2331	aluminum cross horizontal, 36" radius, 6" wide	EA	478.50	
2332	aluminum cross horizontal, 36" radius, 12" wide	EA	505.96	
2333	aluminum cross horizontal, 36" radius, 18" wide	EA	552.53	
2334	aluminum cross horizontal, 36" radius, 24" wide	EA	642.74	
2335	aluminum cross horizontal, 36" radius, 30" wide	EA	701.36	
2336	aluminum cross horizontal, 36" radius, 36" wide	EA	814.38	
2337	Cable tray trough, aluminum dro pout, or end plate, 6" wide	EA	17.95	
2338	Cable tray trough, aluminum dro pout, or end plate, 12" wide	EA	21.23	
2339	Cable tray trough, aluminum dro pout, or end plate, 18" wide	EA	25.22	
2340	Cable tray trough, aluminum dro pout, or end plate, 24" wide	EA	30.08	
2341	Cable tray trough, aluminum dro pout, or end plate, 30" wide	EA	32.32	
2342	Cable tray trough, aluminum dro pout, or end plate, 36" wide	EA	37.02	
2343	Cable tray trough, aluminum red ucer, 9" to 6" wide	EA	80.28	
2344	Cable tray trough, aluminum red ucer, 12" to 6" wide	EA	84.07	
2345	Cable tray trough, aluminum red ucer, 12" to 9" wide	EA	84.07	
2346	Cable tray trough, aluminum red ucer, 18" to 12" wide	EA	91.05	
2347	Cable tray trough, aluminum red ucer, 18" to 6" wide	EA	91.05	
2348	Cable tray trough, aluminum red ucer, 18" to 9" wide	EA	91.05	
2349	Cable tray trough, aluminum red ucer, 24" to 18" wide	EA	97.91	
2350	Cable tray trough, aluminum red ucer, 24" to 12" wide	EA	97.91	
2351	Cable tray trough, aluminum red ucer, 24" to 9" wide	EA	99.07	
2352	Cable tray trough, aluminum red ucer, 24" to 6" wide	EA	99.07	
2353	Cable tray trough, aluminum red ucer, 30" to 24" wide	EA	101.65	
2354	Cable tray trough, aluminum red ucer, 30" to 18" wide	EA	101.65	
2355	Cable tray trough, aluminum red ucer, 30" to 12" wide	EA	103.97	
2356	Cable tray trough, aluminum red ucer, 36" to 30" wide	EA	106.36	
2357	Cable tray trough, aluminum red ucer, 36" to 24" wide	EA	106.36	
2358	Cable tray trough, aluminum red ucer, 36" to 18" wide	EA	106.36	
2359	Cable tray trough, aluminum red ucer, 36" to 12" wide	EA	106.36	
2400	Cable tray trough, aluminum spl ice plate	EA	7.77	
2401	Cable tray trough, aluminum spl ice plate, expansion joint	EA	7.94	
2402	Cable tray trough, aluminum spl ice plate, hinged, horizontal	EA	6.55	
2403	Cable tray trough, aluminum spl ice plate, hinged, vertical	EA	8.99	
2404	Cable tray trough, aluminum tro ugh, hanger, vertical	EA	24.51	
2405	Cable tray trough, aluminum tro ugh, box connector, 24" wide	EA	33.14	
2406	Cable tray trough, aluminum tro ugh, box connector, 18" wide	EA	27.83	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2407	Cable tray trough, aluminum trough, box connector, 12" wide	EA	26.59	
2408	Cable tray trough, aluminum trough, box connector, 9" wide	EA	25.36	
2409	Cable tray trough, aluminum trough, box connector, 6" wide	EA	24.14	
2410	Cable tray trough, aluminum trough, floor flange	EA	25.30	
2411	Cable tray trough, aluminum trough, hold down clamp	EA	3.32	
2412	Cable tray trough, aluminum trough, wall bracket, 24" wide tra	EA	25.59	
2413	Cable tray trough, aluminum trough, wall bracket, 18" wide tra	EA	24.93	
2414	Cable tray trough, aluminum trough, wall bracket, 12" wide tra	EA	13.98	
2415	Cable tray trough, aluminum trough, wall bracket, 9" wide tray	EA	12.58	
2416	Cable tray trough, aluminum trough, wall bracket, 6" wide tray	EA	11.53	
2417	Cable channel aluminum vented, 1-1/4" deep, 4" wide, straight	LF	9.15	
2418	vented, elbow horizontal, 36" radius, 90<	EA	163.96	
2419	vented, elbow horizontal, 36" radius, 60<	EA	127.29	
2420	vented, elbow horizontal, 36" radius, 45<	EA	103.52	
2421	vented, elbow horizontal, 36" radius, 30<	EA	90.28	
2422	vented, elbow horizontal, 36" radius, adj	EA	87.25	
2423	Cable channel aluminum vented, elbow vertical, 36" radius, 90<	EA	175.57	
2424	Cable channel aluminum vented, elbow vertical, 36" radius, 60<	EA	137.75	
2425	Cable channel aluminum vented, elbow vertical, 36" radius, 45<	EA	115.13	
2426	Cable channel aluminum vented, elbow vertical, 36" radius, 30<	EA	100.74	
2427	Cable channel aluminum vented, elbow vertical, 36" radius, adj	EA	87.25	
2428	Cable channel aluminum splice plate, hinged, horizontal	EA	6.72	
2429	Cable channel aluminum splice plate, hinged, vertical	EA	9.22	
2430	Cable channel aluminum hanger, vertical	EA	10.68	
2431	Cable channel aluminum hanger, vertical, single	EA	15.56	
2432	Cable channel aluminum hanger, vertical, double	EA	16.41	
2433	Cable channel aluminum channel to box connector	EA	20.65	
2434	Cable channel aluminum hold down clip	EA	3.11	
2435	Cable channel aluminum wall bracket, single	EA	9.29	
2436	Cable channel aluminum wall bracket, double	EA	12.05	
2437	Cable channel aluminum cable roller	EA	128.87	
2438	Cable channel aluminum splice plate	EA	4.57	
3301	covs, ventilated galv. steel, straight, 6" wide tray size	LF	3.80	
3302	covs, ventilated galv. steel, straight, 9" wide tray size	LF	4.69	
3303	covs, ventilated galv. st, straight, 12" wide tray size	LF	5.58	
3304	covs, ventilated galv. st, straight, 18" wide tray size	LF	7.61	
3305	covs, ventilated galv. st, straight, 24" wide tray size	LF	9.38	
3306	covs, ventilated galv. st, straight, 30" wide tray size	LF	11.31	
3307	covs, ventilated galv. st, straight, 36" wide tray size	LF	12.93	
3308	covs, elbow horizontal 90<, 12" radius, 6" wide tray size	EA	27.78	
3309	covs, elbow horizontal 90<, 12" radius, 9" wide tray size	EA	30.76	
3310	covs, elb horizontal 90<, 12" radius, 12" wide tray size	EA	32.61	
3311	covs, elb horizontal 90<, 12" radius, 18" wide tray size	EA	44.99	
3312	covs, elb horizontal 90<, 12" radius, 24" wide tray size	EA	54.52	
3313	covs, elb horizontal 90<, 12" radius, 30" wide tray size	EA	67.41	
3314	covs, elb horizontal 90<, 12" radius, 36" wide tray size	EA	81.60	
3315	covs, elbow horizontal 90<, 24" radius, 6" wide tray size	EA	45.84	
3316	covs, elbow horizontal 90<, 24" radius, 9" wide tray size	EA	47.09	
3317	covs, elb horizontal 90<, 24" radius, 12" wide tray size	EA	52.45	
3318	covs, elb horizontal 90<, 24" radius, 18" wide tray size	EA	64.85	
3319	covs, elb horizontal 90<, 24" radius, 24" wide tray size	EA	79.03	
3320	covs, elb horizontal 90<, 24" radius, 30" wide tray size	EA	103.62	
3321	covs, elb horizontal 90<, 24" radius, 36" wide tray size	EA	120.13	
3322	covs, elbow horizontal 90<, 36" radius, 6" wide tray size	EA	66.82	
3323	covs, elbow horizontal 90<, 36" radius, 9" wide tray size	EA	73.88	
3324	covs, elb horizontal 90<, 36" radius, 12" wide tray size	EA	78.69	
3325	covs, elb horizontal 90<, 36" radius, 18" wide tray size	EA	100.91	
3326	covs, elb horizontal 90<, 36" radius, 24" wide tray size	EA	119.89	
3327	covs, elb horizontal 90<, 36" radius, 30" wide tray size	EA	142.14	
3328	covs, elb horizontal 90<, 36" radius, 36" wide tray size	EA	166.77	
3329	covs, elbow horizontal 45<, 12" radius, 6" wide tray size	EA	19.87	
3330	covs, elbow horizontal 45<, 12" radius, 9" wide tray size	EA	23.79	
3331	covs, elb horizontal 45<, 12" radius, 12" wide tray size	EA	26.22	
3332	covs, elb horizontal 45<, 12" radius, 18" wide tray size	EA	31.60	
3333	covs, elb horizontal 45<, 12" radius, 24" wide tray size	EA	36.96	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3334	covs, elb horizontal 45<, 12" r adius, 30" wide tray size	EA	43.48	
3335	covs, elb horizontal 45<, 12" r adius, 36" wide tray size	EA	48.82	
3336	covs, elbow horizontal 45<, 24" radius, 6" wide tray size	EA	28.99	
3337	covs, elbow horizontal 45<, 24" radius, 9" wide tray size	EA	32.56	
3338	covs, elb horizontal 45<, 24" r adius, 12" wide tray size	EA	36.76	
3339	covs, elb horizontal 45<, 24" r adius, 18" wide tray size	EA	42.14	
3340	covs, elb horizontal 45<, 24" r adius, 24" wide tray size	EA	48.66	
3341	covs, elb horizontal 45<, 24" r adius, 30" wide tray size	EA	61.60	
3342	covs, elb horizontal 45<, 24" r adius, 36" wide tray size	EA	67.60	
3343	covs, elbow horizontal 45<, 36" radius, 6" wide tray size	EA	41.84	
3344	covs, elbow horizontal 45<, 36" radius, 9" wide tray size	EA	47.16	
3345	covs, elb horizontal 45<, 36" r adius, 12" wide tray size	EA	51.97	
3346	covs, elb horizontal 45<, 36" r adius, 18" wide tray size	EA	59.62	
3347	covs, elb horizontal 45<, 36" r adius, 24" wide tray size	EA	72.60	
3348	covs, elb horizontal 45<, 36" r adius, 30" wide tray size	EA	79.22	
3349	covs, elb horizontal 45<, 36" r adius, 36" wide tray size	EA	95.60	
3350	covers, elbow vertical 90<, 12" radius, 6" wide tray size	EA	23.24	
3351	covers, elbow vertical 90<, 12" radius, 9" wide tray size	EA	23.79	
3352	covs, elbow vertical 90<, 12" r adius, 12" wide tray size	EA	25.64	
3353	covs, elbow vertical 90<, 12" r adius, 18" wide tray size	EA	29.28	
3354	covs, elbow vertical 90<, 12" r adius, 24" wide tray size	EA	30.09	
3355	covs, elbow vertical 90<, 12" r adius, 30" wide tray size	EA	33.13	
3356	covs, elbow vertical 90<, 12" r adius, 36" wide tray size	EA	42.67	
3357	covers, elbow vertical 90<, 24" radius, 6" wide tray size	EA	28.41	
3358	covers, elbow vertical 90<, 24" radius, 9" wide tray size	EA	31.40	
3359	covs, elbow vertical 90<, 24" r adius, 12" wide tray size	EA	32.69	
3360	covs, elbow vertical 90<, 24" r adius, 18" wide tray size	EA	43.30	
3361	covs, elbow vertical 90<, 24" r adius, 24" wide tray size	EA	48.78	
3362	covs, elbow vertical 90<, 24" r adius, 30" wide tray size	EA	55.40	
3363	covs, elbow vertical 90<, 24" r adius, 36" wide tray size	EA	63.19	
3364	covers, elbow vertical 90<, 36" radius, 6" wide tray size	EA	33.13	
3365	covers, elbow vertical 90<, 36" radius, 9" wide tray size	EA	41.93	
3366	covs, elbow vertical 90<, 36" r adius, 12" wide tray size	EA	47.32	
3367	covs, elbow vertical 90<, 36" r adius, 18" wide tray size	EA	59.62	
3368	covs, elbow vertical 90<, 36" r adius, 24" wide tray size	EA	66.38	
3369	covs, elbow vertical 90<, 36" r adius, 30" wide tray size	EA	79.39	
3370	covs, elbow vertical 90<, 36" r adius, 36" wide tray size	EA	93.57	
3371	covers, tee horizontal, 12" rad ius, 6" wide tray size	EA	42.02	
3372	covers, tee horizontal, 12" rad ius, 9" wide tray size	EA	43.30	
3373	covers, tee horizontal, 12" rad ius, 12" wide tray size	EA	48.68	
3374	covers, tee horizontal, 12" rad ius, 18" wide tray size	EA	59.28	
3375	covers, tee horizontal, 12" rad ius, 24" wide tray size	EA	74.57	
3376	covers, tee horizontal, 12" rad ius, 30" wide tray size	EA	87.96	
3377	covers, tee horizontal, 12" rad ius, 36" wide tray size	EA	105.77	
3378	covers, tee horizontal, 24" rad ius, 6" wide tray size	EA	65.88	
3379	covers, tee horizontal, 24" rad ius, 9" wide tray size	EA	75.31	
3380	covers, tee horizontal, 24" rad ius, 12" wide tray size	EA	77.80	
3381	covers, tee horizontal, 24" rad ius, 18" wide tray size	EA	100.04	
3382	covers, tee horizontal, 24" rad ius, 24" wide tray size	EA	152.54	
3383	covers, tee horizontal, 24" rad ius, 30" wide tray size	EA	174.19	
3384	covers, tee horizontal, 24" rad ius, 36" wide tray size	EA	192.13	
3385	covers, tee horizontal, 36" rad ius, 6" wide tray size	EA	118.20	
3386	covers, tee horizontal, 36" rad ius, 9" wide tray size	EA	120.66	
3387	covers, tee horizontal, 36" rad ius, 12" wide tray size	EA	133.64	
3388	covers, tee horizontal, 36" rad ius, 18" wide tray size	EA	157.07	
3389	covers, tee horizontal, 36" rad ius, 24" wide tray size	EA	206.12	
3390	covers, tee horizontal, 36" rad ius, 30" wide tray size	EA	224.47	
3391	covers, tee horizontal, 36" rad ius, 36" wide tray size	EA	255.37	
3392	covers, cross horizontal, 12" r adius, 6" wide tray size	EA	62.62	
3393	covers, cross horizontal, 12" r adius, 9" wide tray size	EA	66.18	
3394	covers, cross horizontal, 12" r adius, 12" wide tray size	EA	73.80	
3395	covers, cross horizontal, 12" r adius, 18" wide tray size	EA	87.36	
3396	covers, cross horizontal, 12" r adius, 24" wide tray size	EA	106.55	
3397	covers, cross horizontal, 12" r adius, 30" wide tray size	EA	122.04	
3398	covers, cross horizontal, 12" r adius, 36" wide tray size	EA	141.97	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3399	covers, cross horizontal, 24" r adius, 6" wide tray size	EA	118.47	
3400	covers, cross horizontal, 24" r adius, 9" wide tray size	EA	129.00	
3401	covers, cross horizontal, 24" r adius, 12" wide tray size	EA	138.38	
3402	covers, cross horizontal, 24" r adius, 18" wide tray size	EA	165.32	
3403	covers, cross horizontal, 24" r adius, 24" wide tray size	EA	202.08	
3404	covers, cross horizontal, 24" r adius, 30" wide tray size	EA	228.15	
3405	covers, cross horizontal, 24" r adius, 36" wide tray size	EA	256.27	
3406	covers, cross horizontal, 36" r adius, 6" wide tray size	EA	197.55	
3407	covers, cross horizontal, 36" r adius, 9" wide tray size	EA	204.61	
3408	covers, cross horizontal, 36" r adius, 12" wide tray size	EA	215.17	
3409	covers, cross horizontal, 36" r adius, 18" wide tray size	EA	247.95	
3410	covers, cross horizontal, 36" r adius, 24" wide tray size	EA	316.26	
3411	covers, cross horizontal, 36" r adius, 30" wide tray size	EA	340.19	
3412	covers, cross horizontal, 36" r adius, 36" wide tray size	EA	363.76	
3413	Cable tray, covers, reducer, 9" to 6" wide tray size	EA	26.69	
3414	Cable tray, covers, reducer, 12" to 6" wide tray size	EA	27.97	
3415	Cable tray, covers, reducer, 12" to 9" wide tray size	EA	27.97	
3416	Cable tray, covers, reducer, 18" to 12" wide tray size	EA	29.86	
3417	Cable tray, covers, reducer, 18" to 6" wide tray size	EA	29.86	
3418	Cable tray, covers, reducer, 24" to 18" wide tray size	EA	41.56	
3419	Cable tray, covers, reducer, 24" to 12" wide tray size	EA	38.07	
3420	Cable tray, covers, reducer, 30" to 24" wide tray size	EA	44.01	
3421	Cable tray, covers, reducer, 30" to 18" wide tray size	EA	44.01	
3422	Cable tray, covers, reducer, 30" to 12" wide tray size	EA	38.20	
3423	Cable tray, covers, reducer, 36" to 30" wide tray size	EA	48.17	
3424	Cable tray, covers, reducer, 36" to 24" wide tray size	EA	48.17	
3425	Cable tray, covers, reducer, 36" to 18" wide tray size	EA	48.17	
3426	Cable tray, covers, reducer, 36" to 12" wide tray size	EA	48.17	
3427	Cable tray, covers, aluminum st raight, 6" wide tray size	LF	3.68	
3428	Cable tray, covers, aluminum 9" wide tray size	LF	4.46	
3429	Cable tray, covers, aluminum 12 " wide tray size	LF	5.29	
3430	Cable tray, covers, aluminum 18 " wide tray size	LF	7.02	
3431	Cable tray, covers, aluminum 24 " wide tray size	LF	8.81	
3432	Cable tray, covers, aluminum 30 " wide tray size	LF	9.70	
3433	Cable tray, covers, aluminum 36 " wide tray size	LF	10.32	
3434	covs, elbow horizontal 90<, 12" radius, 6" wide tray size	EA	27.20	
3435	covs, elbow horizontal 90<, 12" radius, 9" wide tray size	EA	28.44	
3436	covs, elb horizontal 90<, 12" r adius, 12" wide tray size	EA	30.87	
3437	covs, elb horizontal 90<, 12" r adius, 18" wide tray size	EA	40.32	
3438	covs, elb horizontal 90<, 12" r adius, 24" wide tray size	EA	50.98	
3439	covs, elb horizontal 90<, 12" r adius, 30" wide tray size	EA	60.95	
3440	covs, elb horizontal 90<, 12" r adius, 36" wide tray size	EA	74.51	
3441	covs, elbow horizontal 90<, 24" radius, 6" wide tray size	EA	37.12	
3442	covs, elbow horizontal 90<, 24" radius, 9" wide tray size	EA	45.93	
3443	covs, elb horizontal 90<, 24" r adius, 12" wide tray size	EA	50.70	
3444	covs, elb horizontal 90<, 24" r adius, 18" wide tray size	EA	60.15	
3445	covs, elb horizontal 90<, 24" r adius, 24" wide tray size	EA	74.31	
3446	covs, elb horizontal 90<, 24" r adius, 30" wide tray size	EA	90.74	
3447	covs, elb horizontal 90<, 24" r adius, 36" wide tray size	EA	111.87	
3448	covs, elbow horizontal 90<, 36" radius, 6" wide tray size	EA	63.34	
3449	covs, elbow horizontal 90<, 36" radius, 9" wide tray size	EA	69.24	
3450	covs, elb horizontal 90<, 36" r adius, 12" wide tray size	EA	78.69	
3451	covs, elb horizontal 90<, 36" r adius, 18" wide tray size	EA	93.90	
3452	covs, elb horizontal 90<, 36" r adius, 24" wide tray size	EA	113.98	
3453	covs, elb horizontal 90<, 36" r adius, 30" wide tray size	EA	131.56	
3454	covs, elb horizontal 90<, 36" r adius, 36" wide tray size	EA	153.83	
3455	covs, elbow horizontal 45<, 12" radius, 6" wide tray size	EA	20.22	
3456	covs, elbow horizontal 45<, 12" radius, 9" wide tray size	EA	20.88	
3457	covs, elb horizontal 45<, 12" r adius, 12" wide tray size	EA	23.43	
3458	covs, elb horizontal 45<, 12" r adius, 18" wide tray size	EA	26.95	
3459	covs, elb horizontal 45<, 12" r adius, 24" wide tray size	EA	29.94	
3460	covs, elb horizontal 45<, 12" r adius, 30" wide tray size	EA	37.62	
3461	covs, elb horizontal 45<, 12" r adius, 36" wide tray size	EA	45.26	
3462	covs, elbow horizontal 45<, 24" radius, 6" wide tray size	EA	23.47	
3463	covs, elbow horizontal 45<, 24" radius, 9" wide tray size	EA	29.66	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3464	covs, elb horizontal 45<, 24" r adius, 12" wide tray size	EA	30.95	
3465	covs, elb horizontal 45<, 24" r adius, 18" wide tray size	EA	37.49	
3466	covs, elb horizontal 45<, 24" r adius, 24" wide tray size	EA	46.30	
3467	covs, elb horizontal 45<, 24" r adius, 30" wide tray size	EA	53.40	
3468	covs, elb horizontal 45<, 24" r adius, 36" wide tray size	EA	61.69	
3469	covs, elbow horizontal 45<, 36" radius, 6" wide tray size	EA	40.10	
3470	covs, elbow horizontal 45<, 36" radius, 9" wide tray size	EA	43.67	
3471	covs, elb horizontal 45<, 36" r adius, 12" wide tray size	EA	46.16	
3472	covs, elb horizontal 45<, 36" r adius, 18" wide tray size	EA	55.55	
3473	covs, elb horizontal 45<, 36" r adius, 24" wide tray size	EA	67.34	
3474	covs, elb horizontal 45<, 36" r adius, 30" wide tray size	EA	76.80	
3475	covs, elb horizontal 45<, 36" r adius, 36" wide tray size	EA	87.41	
3476	covers, elbow vertical 90<, 12" radius, 6" wide tray size	EA	23.24	
3477	covers, elbow vertical 90<, 12" radius, 9" wide tray size	EA	23.50	
3478	covs, elbow vertical 90<, 12" r adius, 12" wide tray size	EA	25.64	
3479	covs, elbow vertical 90<, 12" r adius, 18" wide tray size	EA	29.86	
3480	covs, elbow vertical 90<, 12" r adius, 24" wide tray size	EA	31.23	
3481	covs, elbow vertical 90<, 12" r adius, 30" wide tray size	EA	31.90	
3482	covs, elbow vertical 90<, 12" r adius, 36" wide tray size	EA	38.49	
3483	covers, elbow vertical 90<, 24" radius, 6" wide tray size	EA	26.66	
3484	covers, elbow vertical 90<, 24" radius, 9" wide tray size	EA	29.08	
3485	covs, elbow vertical 90<, 24" r adius, 12" wide tray size	EA	31.53	
3486	covs, elbow vertical 90<, 24" r adius, 18" wide tray size	EA	38.07	
3487	covs, elbow vertical 90<, 24" r adius, 24" wide tray size	EA	41.78	
3488	covs, elbow vertical 90<, 24" r adius, 30" wide tray size	EA	53.56	
3489	covs, elbow vertical 90<, 24" r adius, 36" wide tray size	EA	58.42	
3490	covers, elbow vertical 90<, 36" radius, 6" wide tray size	EA	30.80	
3491	covers, elbow vertical 90<, 36" radius, 9" wide tray size	EA	37.86	
3492	covs, elbow vertical 90<, 36" r adius, 12" wide tray size	EA	43.83	
3493	covs, elbow vertical 90<, 36" r adius, 18" wide tray size	EA	53.23	
3494	covs, elbow vertical 90<, 36" r adius, 24" wide tray size	EA	62.85	
3495	covs, elbow vertical 90<, 36" r adius, 30" wide tray size	EA	79.27	
3496	covs, elbow vertical 90<, 36" r adius, 36" wide tray size	EA	85.27	
3497	covers, tee horizontal, 12" rad ius, 6" wide tray size	EA	37.84	
3498	covers, tee horizontal, 12" rad ius, 9" wide tray size	EA	40.32	
3499	covers, tee horizontal, 12" rad ius, 12" wide tray size	EA	45.04	
3500	covers, tee horizontal, 12" rad ius, 18" wide tray size	EA	53.33	
3501	covers, tee horizontal, 12" rad ius, 24" wide tray size	EA	67.50	
3502	covers, tee horizontal, 12" rad ius, 30" wide tray size	EA	79.46	
3503	covers, tee horizontal, 12" rad ius, 36" wide tray size	EA	96.09	
3504	covers, tee horizontal, 24" rad ius, 6" wide tray size	EA	61.16	
3505	covers, tee horizontal, 24" rad ius, 9" wide tray size	EA	68.28	
3506	covers, tee horizontal, 24" rad ius, 12" wide tray size	EA	76.51	
3507	covers, tee horizontal, 24" rad ius, 18" wide tray size	EA	89.49	
3508	covers, tee horizontal, 24" rad ius, 24" wide tray size	EA	142.08	
3509	covers, tee horizontal, 24" rad ius, 30" wide tray size	EA	157.47	
3510	covers, tee horizontal, 24" rad ius, 36" wide tray size	EA	175.35	
3511	covers, tee horizontal, 36" rad ius, 6" wide tray size	EA	111.20	
3512	covers, tee horizontal, 36" rad ius, 9" wide tray size	EA	113.69	
3513	covers, tee horizontal, 36" rad ius, 12" wide tray size	EA	125.44	
3514	covers, tee horizontal, 36" rad ius, 18" wide tray size	EA	141.87	
3515	covers, tee horizontal, 36" rad ius, 24" wide tray size	EA	180.55	
3516	covers, tee horizontal, 36" rad ius, 30" wide tray size	EA	202.99	
3517	covers, tee horizontal, 36" rad ius, 36" wide tray size	EA	229.11	
3518	covers, cross horizontal, 12" r adius, 6" wide tray size	EA	57.83	
3519	covers, cross horizontal, 12" r adius, 9" wide tray size	EA	61.40	
3520	covers, cross horizontal, 12" r adius, 12" wide tray size	EA	68.50	
3521	covers, cross horizontal, 12" r adius, 18" wide tray size	EA	82.61	
3522	covers, cross horizontal, 12" r adius, 24" wide tray size	EA	95.60	
3523	covers, cross horizontal, 12" r adius, 30" wide tray size	EA	113.32	
3524	covers, cross horizontal, 12" r adius, 36" wide tray size	EA	131.20	
3525	covers, cross horizontal, 24" r adius, 6" wide tray size	EA	112.53	
3526	covers, cross horizontal, 24" r adius, 9" wide tray size	EA	120.79	
3527	covers, cross horizontal, 24" r adius, 12" wide tray size	EA	130.25	
3528	covers, cross horizontal, 24" r adius, 18" wide tray size	EA	151.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3529	covers, cross horizontal, 24" r adius, 24" wide tray size	EA	180.71	
3530	covers, cross horizontal, 24" r adius, 30" wide tray size	EA	211.37	
3531	covers, cross horizontal, 24" r adius, 36" wide tray size	EA	229.54	
3532	covers, cross horizontal, 36" r adius, 6" wide tray size	EA	180.05	
3533	covers, cross horizontal, 36" r adius, 9" wide tray size	EA	188.35	
3534	covers, cross horizontal, 36" r adius, 12" wide tray size	EA	202.44	
3535	covers, cross horizontal, 36" r adius, 18" wide tray size	EA	222.38	
3536	covers, cross horizontal, 36" r adius, 24" wide tray size	EA	275.03	
3537	covers, cross horizontal, 36" r adius, 30" wide tray size	EA	316.26	
3538	covers, cross horizontal, 36" r adius, 36" wide tray size	EA	346.00	
3539	Cable tray, covers, reducer, 9" to 6" wide tray size	EA	29.02	
3540	Cable tray, covers, reducer, 12" to 6" wide tray size	EA	30.29	
3541	Cable tray, covers, reducer, 12" to 9" wide tray size	EA	30.29	
3542	Cable tray, covers, reducer, 18" to 12" wide tray size	EA	33.35	
3543	Cable tray, covers, reducer, 18" to 6" wide tray size	EA	33.35	
3544	Cable tray, covers, reducer, 24" to 18" wide tray size	EA	42.72	
3545	Cable tray, covers, reducer, 24" to 12" wide tray size	EA	36.91	
3546	Cable tray, covers, reducer, 30" to 24" wide tray size	EA	44.59	
3547	Cable tray, covers, reducer, 30" to 18" wide tray size	EA	44.59	
3548	Cable tray, covers, reducer, 30" to 12" wide tray size	EA	44.59	
3549	Cable tray, covers, reducer, 36" to 30" wide tray size	EA	49.33	
3550	Cable tray, covers, reducer, 36" to 24" wide tray size	EA	49.33	
3551	Cable tray, covers, reducer, 36" to 18" wide tray size	EA	49.33	
3552	Cable tray, covers, reducer, 36" to 12" wide tray size	EA	49.33	
3553	Cable tray, tray cover hold down clamp	EA	8.26	
3554	Cable tray, divider strip, strai ght, galvanized, 3" deep	LF	3.38	
3555	Cable tray, divider strip, strai ght, galvanized, 4" deep	LF	4.15	
3556	Cable tray, divider strip, strai ght, galvanized, 6" deep	LF	5.39	
3557	Cable tray, divider strip, alumi num straight, 3" deep	LF	3.37	
3558	Cable tray, divider strip, alumi num straight, 4" deep	LF	4.14	
3559	Cable tray, divider strip, alumi num straight, 6" deep	LF	5.38	
3560	div strip vertical ftng 3" D, 1 2" radius, galvanized, 30<	EA	16.96	
3561	div strip vertical ftng 3" D, 1 2" radius, galvanized, 45<	EA	21.01	
3562	div strip vertical ftng 3" D, 1 2" radius, galvanized, 60<	EA	22.29	
3563	div strip vertical ftng 3" D, 1 2" radius, galvanized, 90<	EA	27.56	
3564	divider strip vertical fitting 3" D, 12" radius, alum 30<	EA	14.52	
3565	div strip vertical fitting 3" D , 12" radius, alum 45<	EA	16.96	
3566	div strip vertical fitting 3" D , 12" radius, alum 60<	EA	19.67	
3567	div strip vertical fitting 3" D , 12" radius, alum 90<	EA	24.61	
3568	div strip vertical ftng 3" D, 2 4" radius, galvanized, 30<	EA	25.24	
3569	div strip vertical ftng 3" D, 2 4" radius, galvanized, 45<	EA	28.21	
3570	div strip vertical ftng 3" D, 2 4" radius, galvanized, 60<	EA	35.24	
3571	div strip vertical ftng 3" D, 2 4" radius, galvanized, 90<	EA	47.51	
3572	div strip vertical fitting 3" D , 24" radius, alum 30<	EA	23.45	
3573	div strip vertical fitting 3" D , 24" radius, alum 45<	EA	26.98	
3574	div strip vertical fitting 3" D , 24" radius, alum 60<	EA	33.43	
3575	div strip vertical fitting 3" D , 24" radius, alum 90<	EA	45.11	
3576	div strip vertical ftng 3" D, 3 6" radius, galvanized,30<	EA	33.56	
3577	div strip vertical ftng 3" D, 3 6" radius, galvanized, 45<	EA	38.87	
3578	div strip vertical ftng 3" D, 3 6" radius, galvanized, 60<	EA	45.34	
3579	div strip vertical ftng 3" D, 3 6" radius, galvanized, 90<	EA	62.29	
3580	div strip vertical fitting 3" D , 36" radius, alum 30<	EA	35.24	
3581	div strip vertical fitting 3" D , 36" radius, alum 45<	EA	45.18	
3582	div strip vertical fitting 3" D , 36" radius, alum 60<	EA	58.05	
3583	div strip vertical fitting 3" D , 36" radius, alum 90<	EA	75.55	
3584	div strip vertical ftng 4" D, 1 2" radius, galvanized, 30<	EA	21.30	
3585	div strip vertical ftng 4" D, 1 2" radius, galvanized, 45<	EA	24.61	
3586	div strip vertical ftng 4" D, 1 2" radius, galvanized, 60<	EA	27.56	
3587	div strip vertical ftng 4" D, 1 2" radius, galvanized, 90<	EA	33.43	
3588	div strip vertical fitting 4" D , 12" radius, alum 30<	EA	20.04	
3589	div strip vertical fitting 4" D , 12" radius, alum 45<	EA	23.10	
3590	div strip vertical fitting 4" D , 12" radius, alum 60<	EA	26.35	
3591	div strip vertical fitting 4" D , 12" radius, alum 90<	EA	31.05	
3592	div strip vertical ftng 4" D, 2 4" radius, galvanized, 30<	EA	33.43	
3593	div strip vertical ftng 4" D, 2 4" radius, galvanized, 45<	EA	41.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3594	div strip vertical ftng 4" D, 2 4" radius, galvanized, 60<	EA	46.93	
3595	div strip vertical ftng 4" D, 2 4" radius, galvanized, 90<	EA	62.11	
3596	divider strip vertical fitting 4" D, 24" radius, alum 30<	EA	31.05	
3597	div strip vertical fitting 4" D, 24" radius, alum 45<	EA	37.50	
3598	div strip vertical fitting 4" D, 24" radius, alum 60<	EA	43.95	
3599	div strip vertical fitting 4" D, 24" radius, alum 90<	EA	59.71	
3600	div strip vertical ftng 4" D, 3 6" radius, galvanized, 30<	EA	38.72	
3601	div strip vertical ftng 4" D, 3 6" radius, galvanized, 45<	EA	44.02	
3602	div strip vertical ftng 4" D, 3 6" radius, galvanized, 60<	EA	55.14	
3603	div strip vertical ftng 4" D, 3 6" radius, galvanized, 90<	EA	74.39	
3604	divider strip vertical fitting 4" D, 36" radius, alum 30<	EA	46.80	
3605	div strip vertical fitting 4" D, 36" radius, alum 45<	EA	59.64	
3606	div strip vertical fitting 4" D, 36" radius, alum 60<	EA	72.49	
3607	div strip vertical fitting 4" D, 36" radius, alum 90<	EA	91.16	
3608	div strip vertical ftng 6" D, 1 2" radius, galvanized, 30<	EA	23.27	
3609	div strip vertical ftng 6" D, 1 2" radius, galvanized, 45<	EA	25.94	
3610	div strip vertical ftng 6" D, 1 2" radius, galvanized, 60<	EA	29.50	
3611	div strip vertical ftng 6" D, 1 2" radius, galvanized, 90<	EA	36.55	
3612	div strip vertical fitting 6" D, 12" radius, alum 30<	EA	21.99	
3613	div strip vertical fitting 6" D, 12" radius, alum 45<	EA	25.88	
3614	div strip vertical fitting 6" D, 12" radius, alum 60<	EA	27.10	
3615	div strip vertical fitting 6" D, 12" radius, alum 90<	EA	31.82	
3616	div strip vertical ftng 6" D, 2 4" radius, galvanized, 30<	EA	33.49	
3617	div strip vertical ftng 6" D, 2 4" radius, galvanized, 45<	EA	41.70	
3618	div strip vertical ftng 6" D, 2 4" radius, galvanized, 60<	EA	47.59	
3619	div strip vertical ftng 6" D, 2 4" radius, galvanized, 90<	EA	62.19	
3620	div strip vertical fitting 6" D, 24" radius, alum 30<	EA	31.69	
3621	div strip vertical fitting 6" D, 24" radius, alum 45<	EA	42.79	
3622	div strip vertical fitting 6" D, 24" radius, alum 60<	EA	46.93	
3623	div strip vertical fitting 6" D, 24" radius, alum 90<	EA	63.27	
3624	div strip vertical ftng 6" D, 3 6" radius, galvanized, 30<	EA	38.79	
3625	div strip vertical ftng 6" D, 3 6" radius, galvanized, 45<	EA	47.59	
3626	div strip vertical ftng 6" D, 3 6" radius, galvanized, 60<	EA	62.19	
3627	div strip vertical ftng 6" D, 3 6" radius, galvanized, 90<	EA	79.72	
3628	div strip vertical fitting 6" D, 36" radius, alum 30<	EA	47.44	
3629	div strip vertical fitting 6" D, 36" radius, alum 45<	EA	63.19	
3630	div strip vertical fitting 6" D, 36" radius, alum 60<	EA	74.31	
3631	div strip vertical fitting 6" D, 36" radius, alum 90<	EA	88.92	
3632	divider strip, horizontal fitting, galvanized, 3" deep	EA	23.44	
3633	divider strip, horizontal fitting, galvanized, 4" deep	EA	26.16	
3634	divider strip, horizontal fitting, galvanized, 6" deep	EA	33.26	
3635	Cable tray, divider strip, aluminum, 3" deep	EA	22.17	
3636	Cable tray, divider strip, aluminum, 4" deep	EA	24.35	
3637	Cable tray, divider strip, aluminum, 6" deep	EA	32.01	
3638	Cable tray, divider strip protector	LF	2.39	
3639	Cable tray, fastener, ladder tray	EA	0.42	
3640	Cable tray, fastener, trough or solid bottom tray	EA	0.28	
16011 0010	Cable tray ladder type, 4" deep, w/ ftgs & supt			
16011 0160	Galvanized steel trays			
16011 0909	Trays, 9" rung spacing			
0910	Cable tray lad type, 6" wide, galv stl tray, 9" rung spacing	LF	13.67	4.00
0930	Cable tray lad type, 12" wide, galv stl tray, 9" rung spacing	LF	15.54	4.22
0940	Cable tray lad type, 18" wide, galv stl tray, 9" rung spacing	LF	17.08	4.71
0950	Cable tray lad type, 24" wide, galv stl tray, 9" rung spacing	LF	18.84	4.90
0960	Cable tray lad type, 30" wide, galv stl tray, 9" rung spacing	LF	20.51	5.18
16011 1049	Elbows, horizontal, 9" rung spacing, 90_			
1050	Cable tray lad type, 90 deg 12" rad, 6" W galv stl, elb, horiz, 9"	EA	93.38	34.86
1120	Cable tray lad type, 90 deg 24" rad, 6" W galv stl, elb, horiz, 9"	EA	137.20	36.99
1140	Cable tray lad type, 90 deg 24" rad, 12"W galv stl, elb, horiz, 9"	EA	159.56	48.08
1150	Cable tray lad type, 90 deg 24" rad, 18"W galv stl, elb, horiz, 9"	EA	184.97	61.63
1160	Cable tray lad type, 90 deg 24" rad, 24"W galv stl, elb, horiz, 9"	EA	207.17	69.22
1170	Cable tray lad type, 90 deg 24" rad, 30"W galv stl, elb, horiz, 9"	EA	230.59	76.03
16011 1499	Elbows, vertical, 9" rung spacing, 90_			
1500	Cable tray lad type, 12" rad, 6" W galv stl, elb, vert, 9" rung SP,	EA	106.74	34.86

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1570	Cable tray lad type, 24" rad, 6" W galv stl, elb vert, 9" rung SP,	EA	133.37	36.99
1590	Cable tray lad type, 24" rad, 12"W galv stl, elb vert, 9" rung	EA	154.77	48.08
1600	Cable tray lad type, 24" rad, 18"W galv stl, elb vert, 9" rung	EA	178.00	61.63
1610	Cable tray lad type, 24" rad, 24"W galv stl, elb vert, 9" rung	EA	197.89	69.22
1620	Cable tray lad type, 24" rad, 30"W galv stl, elb vert, 9" rung	EA	217.60	76.03
16011 1739 Tee, horizontal, 9" rung spacing				
1740	Cable tray lad type, 12" rad, 6" W galv stl, T horiz, 9" rung S	EA	186.67	62.41
1810	Cable tray lad type, 24" rad, 6" W galv stl, T horiz, 9" rung S	EA	245.57	70.32
1830	Cable tray lad type, 24" rad, 12" W galv stl, T horiz, 9"	EA	274.04	81.98
1840	Cable tray lad type, 24" rad, 18" W galv stl, T horiz, 9"	EA	300.93	96.13
1850	Cable tray lad type, 24" rad, 24" W galv stl, T horiz, 9"	EA	332.95	108.76
1860	Cable tray lad type, 24" rad, 30" W galv stl, T horiz, 9"	EA	358.21	119.54
16011 1979 Tee, vertical, 9" rung spacing				
1980	Cable tray lad type, 12" rad, 6" W galv stl, T vertical, 9" run	EA	242.18	59.08
2050	Cable tray lad type, 24" rad, 6" W galv stl, T vertical, 9" run	EA	352.42	62.41
2070	Cable tray lad type, 24" rad, 12" W galv stl, T vertical, 9"	EA	369.41	70.32
2080	Cable tray lad type, 24" rad, 18" W galv stl, T vertical, 9"	EA	388.29	83.09
2090	Cable tray lad type, 24" rad, 24" W galv stl, T vertical, 9"	EA	402.17	84.82
2100	Cable tray lad type, 24" rad, 30" W galv stl, T vertical, 9"	EA	425.08	96.13
16011 2210 Cross, vertical, 9" rung spacing				
2211	Cable tray lad type, 24" rad, 6" wide, galv stl, cross, vertical	EA	356.27	106.98
2213	Cable tray lad type, 24" rad, 12" wide, galv stl, cross,	EA	394.35	105.32
2214	Cable tray lad type, 24" rad, 18" wide, galv stl, cross,	EA	439.65	153.79
2215	Cable tray lad type, 24" rad, 24" wide, galv stl, cross,	EA	492.79	151.52
2216	Cable tray lad type, 24" rad, 30" wide, galv stl, cross,	EA	550.97	196.16
16011 2219 Cross, horizontal, 9" rung spacing				
2220	Cable tray lad type, 12" rad, 6" W galv stl, cross horiz, 9"	EA	240.61	113.47
2290	Cable tray lad type, 24" rad, 6" W galv stl, cross horiz, 9"	EA	344.91	125.46
2310	Cable tray lad type, 24" rad, 12"W galv stl, cross horiz, 9"	EA	376.32	141.84
2320	Cable tray lad type, 24" rad, 18"W galv stl, cross horiz, 9"	EA	400.99	149.39
2330	Cable tray lad type, 24" rad, 24"W galv sel, cross horiz, 9"	EA	444.11	151.63
2340	Cable tray lad type, 24" rad, 30"W galv stl, cross horiz, 9"	EA	477.44	187.26
16011 2450 Wye, horizontal, 9" rung spacing				
2451	Cable tray lad type, 24" radius, 6" wide, galv stl, wye horiz, 9"	EA	212.88	86.81
2452	Cable tray lad type, 24" radius, 12" wide, galv stl, wye horiz, 9"	EA	260.08	85.85
2453	Cable tray lad type, 24" radius, 18" wide, galv stl, wye horiz, 9"	EA	307.27	129.39
2454	Cable tray lad type, 24" radius, 24" wide, galv stl, wye horiz, 9"	EA	353.70	129.46
2455	Cable tray lad type, 24" radius, 30" wide, galv stl, wye horiz, 9"	EA	392.38	153.79
16011 2459 Reducer				
2460	Cable tray lad type, galv stl, reducer, 9" to 6" wide	EA	97.09	30.56
2465	Cable tray lad type, galv stl, reducer, 12" to 6" wide	EA	98.75	33.66
2480	Cable tray lad type, galv stl, reducer, 18" to 12" wide	EA	109.06	34.96
2490	Cable tray lad type, galv stl, reducer, 24" to 18" wide	EA	118.69	44.50
2500	Cable tray lad type, galv stl, reducer, 30" to 24" wide	EA	127.69	44.08
16011 3199 Aluminum tray				
16011 3199 Trays, 6" rung spacing				
3200	Cable tray ladder type, al, 6" rung spacing, 6" wide	LF	16.13	3.37
16011 3269 Trays, 9" rung spacing				
3270	Cable tray ladder type, al, 9" rung spacing, 6" wide	LF	13.69	2.91
3290	Cable tray ladder type, al, 9" rung spacing, 12" wide	LF	14.74	3.12
3300	Cable tray ladder type, al, 9" rung spacing, 18" wide	LF	16.71	3.41
3310	Cable tray ladder type, al, 9" rung spacing, 24" wide	LF	18.86	3.62
3320	Cable tray ladder type, al, 9" rung spacing, 30" wide	LF	20.74	3.90
16011 3409 Elbows, horizontal, 9" rung spacing, 90_				
3410	Cable tray lad type, 12" rad, 6" W al, elb horiz, 9" rung SP, 90	EA	102.09	47.16
3480	Cable tray lad type, 24" rad, 6" W al, elb horiz, 9" rung SP, 90	EA	143.07	48.05
3500	Cable tray lad type, 24" rad, 12" W al, elb horiz, 9" rung	EA	167.47	59.36
3510	Cable tray lad type, 24" rad, 18" W al, elb horiz, 9" rung	EA	194.48	61.42
3520	Cable tray lad type, 24" rad, 24" W al, elb horiz, 9" rung	EA	219.21	84.68
3530	Cable tray lad type, 24" rad, 30" W al, elb horiz, 9" rung	EA	244.33	82.13
16011 3859 Elbows, vertical, 9" rung spacing, 90_				
3860	Cable tray lad type, 6" W al, elb vert, 9" rung SP 90 deg, 12"	EA	119.52	28.37
3930	Cable tray lad type, 6" W al, elb vert, 9" rung SP 90 deg, 24"	EA	130.81	30.07

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3950	Cable tray lad type, 12" W al, elb vert, 9" rung SP 90 deg, 24"	EA	152.35	38.33
3960	Cable tray lad type, 18" W al, elb vert, 9" rung SP 90 deg, 24"	EA	175.85	45.71
3970	Cable tray lad type, 24" W al, elb vert, 9" rung SP 90 deg, 24"	EA	195.95	54.25
3980	Cable tray lad type, 30" W al, elb vert, 9" rung SP 90 deg, 24"	EA	215.88	62.48
16011 4099 Tee, horizontal, 9" rung spacing				
4100	Cable tray lad type, 6" wide, al, T horiz 9" rung SP, 12" rad	EA	185.51	85.10
4170	Cable tray lad type, 6" wide, al, T horiz 9" rung SP, 24" rad	EA	243.88	98.54
4190	Cable tray lad type, 12" wide, al, T horiz 9" rung SP, 24" rad	EA	272.97	97.55
4200	Cable tray lad type, 18" wide, al, T horiz 9" rung SP, 24" rad	EA	292.17	92.98
4210	Cable tray lad type, 24" wide, al, T horiz 9" rung SP, 24" rad	EA	313.56	118.22
4220	Cable tray lad type, 30" wide, al, T horiz 9" rung SP, 24" rad	EA	347.55	122.87
16011 4309 Tee, vertical, 9" rung spacing				
4310	Cable tray lad type, 6" wide, al, T vert 9" rung SP, 12" rad	EA	271.23	79.86
4380	Cable tray lad type, 6" wide, al, T vert 9" rung SP, 24" rad	EA	354.00	82.87
4400	Cable tray lad type, 12" wide, al, T vert 9" rung SP, 24" rad	EA	369.68	94.36
4410	Cable tray lad type, 18" wide, al, T vert 9" rung SP, 24" rad	EA	387.24	102.66
4420	Cable tray lad type, 24" wide, al, T vert 9" rung SP, 24" rad	EA	400.96	106.38
4430	Cable tray lad type, 30" wide, al, T vert 9" rung SP, 24" rad	EA	448.42	113.48
16011 4549 Cross, horizontal, 9" rung spacing				
4550	Cable tray lad type, 6" W al, cross horiz 9" rung SP, 12" rad	EA	221.91	93.30
4620	Cable tray lad type, 6" W al, cross horiz 9" rung SP, 24" rad	EA	330.78	105.32
4640	Cable tray lad type, 12" W al, cross horiz 9" rung SP, 24" rad	EA	359.01	112.20
4650	Cable tray lad type, 18" W al, cross horiz 9" rung SP, 24" rad	EA	388.78	124.82
4660	Cable tray lad type, 24" W al, cross horiz 9" rung SP, 24" rad	EA	418.86	138.05
4670	Cable tray lad type, 30" W al, cross horiz 9" rung SP, 24" rad	EA	464.37	171.31
16011 4789 Reducer				
4790	Cable tray lad type, al, reducer, 9" to 6" wide tray	EA	87.75	23.65
4795	Cable tray lad type, al, reducer, 12" to 6" wide tray	EA	88.77	23.65
4810	Cable tray lad type, al, reducer, 18" to 12" wide tray	EA	100.26	29.25
4820	Cable tray lad type, al, reducer, 24" to 18" wide tray	EA	109.22	40.53
4830	Cable tray lad type, al, reducer, 30" to 24" wide tray	EA	118.54	38.48
16011 8179 Wye, horizontal, 36" radius, 45_				
8180	Cable tray lad type, 6" wide tray, al, wye 36" rad horiz, 45	EA	202.25	85.64
8200	Cable tray lad type, al, wye 36" rad horiz, 45 deg, 12" W tray	EA	222.11	83.69
8210	Cable tray lad type, al, wye 36" rad horiz, 45 deg, 18" W tray	EA	246.39	83.30
8220	Cable tray lad type, al, wye 36" rad horiz, 45 deg, 24" W tray	EA	266.64	112.62
8230	Cable tray lad type, al, wye 36" rad horiz, 45 deg, 30" W tray	EA	289.96	105.14
16011 8719 Cross, vertical, 9" rung spacing				
8720	Cable tray lad type, 24" rad, 6" wide tray, al tray, cross,	EA	643.53	113.93
8740	Cable tray lad type, 24" rad, 12" wide tray, al tray, cross,	EA	683.78	132.09
8750	Cable tray lad type, 24" rad, 18" wide tray, al tray, cross,	EA	735.18	144.46
8760	Cable tray lad type, 24" rad, 24" wide tray, al tray, cross,	EA	766.57	162.59
8770	Cable tray lad type, 24" rad, 30" wide tray, al tray, cross,	EA	838.64	180.00
16015 0010 Wireway				
Note: 1. Exposed On Flat Wall Surface 2. Based On 100 Ft Run. With Up To 14 Ft Munting Height 3. Labor Units Include Material Unloading, Unpacking At Job Site. Layout Of Job. Assembly And Installation 4. Material Costs Are For Called Item Only. 5. For Fasteners See CSI 161100-2000. For Straps See 16111-1200.				
16015 0699 Screw cover				
0700	Wireway to 14' high, screw cover 2.5" x 2.5"	LF	11.80	0.81
1801	For 14'-25' Installed Elevation ADD		0.65	
1802	For 26'-35' Installed Elevation ADD		1.18	
1803	Over 35' Installed Elevation ADD		1.61	
0710	Wireway to 14' high, screw cover 4" x 4"	LF	13.35	1.17
1801	For 14'-25' Installed Elevation ADD		0.77	
1802	For 26'-35' Installed Elevation ADD		1.39	
1803	Over 35' Installed Elevation ADD		1.91	
0720	Wireway to 14' high, screw cover 6" x 6"	LF	20.19	1.59
1801	For 14'-25' Installed Elevation ADD		0.95	
1802	For 26'-35' Installed Elevation ADD		1.70	
1803	Over 35' Installed Elevation ADD		2.33	
16015 0799 Elbows, 90_				
0800	Wireway to 14' high, elbows, 90 deg, 2.5" x 2.5"	EA	38.25	2.80
1801	For 14'-25' Installed Elevation ADD		1.77	
1802	For 26'-35' Installed Elevation ADD		3.19	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1803	Over 35' Installed Elevation ADD		4.37	
1000	Wireway to 14' high, elbows, 90 deg, 4" x 4"	EA	44.39	3.72
1801	For 14'-25' Installed Elevation ADD		2.13	
1802	For 26'-35' Installed Elevation ADD		3.83	
1803	Over 35' Installed Elevation ADD		5.25	
1200	Wireway to 14' high, elbows, 90 deg, 6" x 6"	EA	49.46	3.72
1801	For 14'-25' Installed Elevation ADD		2.36	
1802	For 26'-35' Installed Elevation ADD		4.26	
1803	Over 35' Installed Elevation ADD		5.83	
16015 1599 "T" box				
1600	Wireway to 14' high, "T" box, 2.5" x 2.5"	EA	46.55	3.51
1801	For 14'-25' Installed Elevation ADD		2.36	
1802	For 26'-35' Installed Elevation ADD		4.26	
1803	Over 35' Installed Elevation ADD		5.83	
1800	Wireway to 14' high, "T" box, 4" x 4"	EA	54.33	4.82
1801	For 14'-25' Installed Elevation ADD		2.66	
1802	For 26'-35' Installed Elevation ADD		4.79	
1803	Over 35' Installed Elevation ADD		6.56	
2000	Wireway to 14' high, "T" box, 6" x 6"	EA	60.93	4.75
1801	For 14'-25' Installed Elevation ADD		3.04	
1802	For 26'-35' Installed Elevation ADD		5.47	
1803	Over 35' Installed Elevation ADD		7.50	
16015 2399 Panel adapter				
2400	Wireway to 14' high, panel adapter, 2.5" x 2.5"	EA	23.09	5.04
1801	For 14'-25' Installed Elevation ADD		1.77	
1802	For 26'-35' Installed Elevation ADD		3.19	
1803	Over 35' Installed Elevation ADD		4.37	
2600	Wireway to 14' high, panel adapter, 4" x 4"	EA	27.43	5.81
1801	For 14'-25' Installed Elevation ADD		2.13	
1802	For 26'-35' Installed Elevation ADD		3.83	
1803	Over 35' Installed Elevation ADD		5.25	
2800	Wireway to 14' high, panel adapter, 6" x 6"	EA	33.13	5.57
1801	For 14'-25' Installed Elevation ADD		2.36	
1802	For 26'-35' Installed Elevation ADD		4.26	
1803	Over 35' Installed Elevation ADD		5.83	
16016 Conduits				
Note: Demolition Cost For Conduits Includes All Fittings, Boxes, Hangers And Associated Wiring.				
16017 0010 Conduit				
Note: Include Terminations, Connectors & Elbows. Line Items In This Section Are To Be Used When There Is Insufficient Detail And Shall Be Used Only When Requested In The Scope Of Work.				
16017 1749 Steel, rigid galvanized (RGS)				
1750	Cond to 14' H,w/ 2 term, galv stl, 1/2" dia, 2 elb&11 bm CLP/100'	LF	4.66	0.81
1850	For 14'-20' Installed Elevation, Add		0.32	
1852	For 21'-25' Installed Elevation, Add		0.63	
1854	For 26'-30' Installed Elevation, Add		0.79	
1856	For 31'-35' Installed Elevation, Add		0.95	
1858	For 36'-40' Installed Elevation, Add		1.10	
1860	For over 40' Installed Elevation, Add		1.26	
1752	Cond to 14' H,w/ 2 term, galv stl, 3/4" dia, 2 elb&11 bm CLP/100'	LF	5.68	0.89
1850	For 14'-20' Installed Elevation, Add		0.38	
1852	For 21'-25' Installed Elevation, Add		0.75	
1854	For 26'-30' Installed Elevation, Add		0.94	
1856	For 31'-35' Installed Elevation, Add		1.13	
1858	For 36'-40' Installed Elevation, Add		1.32	
1860	For over 40' Installed Elevation, Add		1.50	
1754	Cond to 14' H,w/ 2 term, galv stl, 1" dia, 2 elb&11 bm CLP/100'	LF	7.30	1.03
1850	For 14'-20' Installed Elevation, Add		0.46	
1852	For 21'-25' Installed Elevation, Add		0.93	
1854	For 26'-30' Installed Elevation, Add		1.16	
1856	For 31'-35' Installed Elevation, Add		1.39	
1858	For 36'-40' Installed Elevation, Add		1.62	
1860	For over 40' Installed Elevation, Add		1.85	
1756	Cond to 14' H,w/ 2 term, galv stl, 1-1/4" dia, 2elb&11bm CLP/100'	LF	8.45	1.10
1850	For 14'-20' Installed Elevation, Add		0.50	
1852	For 21'-25' Installed Elevation, Add		1.00	
1854	For 26'-30' Installed Elevation, Add		1.26	
1856	For 31'-35' Installed Elevation, Add		1.51	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1858	For 36'-40' Installed Elevation, Add		1.76	
1860	For over 40' Installed Elevation, Add		2.01	
1758	Cond to 14' H,w/ 2 term, galv stl, 1-1/2"dia, 2elb&11bm CLP/100'	LF	9.60	0.99
1850	For 14'-20' Installed Elevation, Add		0.55	
1852	For 21'-25' Installed Elevation, Add		1.09	
1854	For 26'-30' Installed Elevation, Add		1.37	
1856	For 31'-35' Installed Elevation, Add		1.64	
1858	For 36'-40' Installed Elevation, Add		1.91	
1860	For over 40' Installed Elevation, Add		2.19	
1760	Cond to 14' H,w/ 2 term, galv stl, 2"dia, 2 elb&11 bm CLP/100'	LF	12.13	1.03
1850	For 14'-20' Installed Elevation, Add		0.67	
1852	For 21'-25' Installed Elevation, Add		1.33	
1854	For 26'-30' Installed Elevation, Add		1.67	
1856	For 31'-35' Installed Elevation, Add		2.00	
1858	For 36'-40' Installed Elevation, Add		2.33	
1860	For over 40' Installed Elevation, Add		2.67	
1762	Cond to 14' H,w/ 2 term, galv stl, 2-1/2"dia, 2elb&11bm CLP/100'	LF	17.69	1.28
1850	For 14'-20' Installed Elevation, Add		0.86	
1852	For 21'-25' Installed Elevation, Add		1.73	
1854	For 26'-30' Installed Elevation, Add		2.16	
1856	For 31'-35' Installed Elevation, Add		2.59	
1858	For 36'-40' Installed Elevation, Add		3.02	
1860	For over 40' Installed Elevation, Add		3.45	
1764	Cond to 14' H,w/ 2 term, galv stl, 3"dia, 2 elb&11 bm CLP/100'	LF	23.56	1.81
1850	For 14'-20' Installed Elevation, Add		1.21	
1852	For 21'-25' Installed Elevation, Add		2.41	
1854	For 26'-30' Installed Elevation, Add		3.02	
1856	For 31'-35' Installed Elevation, Add		3.62	
1858	For 36'-40' Installed Elevation, Add		4.22	
1860	For over 40' Installed Elevation, Add		4.82	
1766	Cond to 14' H,w/ 2 term, galv stl, 3-1/2"dia, 2elb&11bm CLP/100'	LF	28.18	2.20
1850	For 14'-20' Installed Elevation, Add		1.37	
1852	For 21'-25' Installed Elevation, Add		2.74	
1854	For 26'-30' Installed Elevation, Add		3.43	
1856	For 31'-35' Installed Elevation, Add		4.11	
1858	For 36'-40' Installed Elevation, Add		4.80	
1860	For over 40' Installed Elevation, Add		5.48	
1768	Cond to 14' H,w/ 2 term, galv stl, 4"dia, 2 elb&11 bm CLP/100'	LF	32.08	2.23
1850	For 14'-20' Installed Elevation, Add		1.51	
1852	For 21'-25' Installed Elevation, Add		3.01	
1854	For 26'-30' Installed Elevation, Add		3.77	
1856	For 31'-35' Installed Elevation, Add		4.52	
1858	For 36'-40' Installed Elevation, Add		5.27	
1860	For over 40' Installed Elevation, Add		6.02	
1770	Cond to 14' H,w/ 2 term, galv stl, 5"dia, 2 elb&11 bm CLP/100'	LF	54.93	3.01
1850	For 14'-20' Installed Elevation, Add		2.01	
1852	For 21'-25' Installed Elevation, Add		4.01	
1854	For 26'-30' Installed Elevation, Add		5.02	
1856	For 31'-35' Installed Elevation, Add		6.02	
1858	For 36'-40' Installed Elevation, Add		7.02	
1860	For over 40' Installed Elevation, Add		8.03	
1772	Cond to 14' H,w/ 2 term, galv stl, 6"dia, 2 elb&11 bm CLP/100'	LF	79.95	4.50
1850	For 14'-20' Installed Elevation, Add		3.00	
1852	For 21'-25' Installed Elevation, Add		6.00	
1854	For 26'-30' Installed Elevation, Add		7.50	
1856	For 31'-35' Installed Elevation, Add		9.00	
1858	For 36'-40' Installed Elevation, Add		10.50	
1860	For over 40' Installed Elevation, Add		12.00	
16017 1999	Steel, rigid galvanized (RGS), elbows			
2000	Conduit to 14' high, rigid galv steel, elbow, 1/2" dia	EA	12.45	2.34
1850	For 14'-20' Installed Elevation, Add		0.89	
1852	For 21'-25' Installed Elevation, Add		1.77	
1854	For 26'-30' Installed Elevation, Add		2.22	
1856	For 31'-35' Installed Elevation, Add		2.66	
1858	For 36'-40' Installed Elevation, Add		3.10	
1860	For over 40' Installed Elevation, Add		3.55	
2030	Conduit to 14' high, rigid galv steel, elbow, 3/4" dia	EA	14.41	2.30
1850	For 14'-20' Installed Elevation, Add		1.01	
1852	For 21'-25' Installed Elevation, Add		2.03	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1854	For 26'-30' Installed Elevation, Add		2.53	
1856	For 31'-35' Installed Elevation, Add		3.04	
1858	For 36'-40' Installed Elevation, Add		3.55	
1860	For over 40' Installed Elevation, Add		4.05	
2050	Conduit to 14' high, rigid galv steel, elbow, 1" dia	EA	18.19	2.70
1850	For 14'-20' Installed Elevation, Add		1.18	
1852	For 21'-25' Installed Elevation, Add		2.36	
1854	For 26'-30' Installed Elevation, Add		2.96	
1856	For 31'-35' Installed Elevation, Add		3.55	
1858	For 36'-40' Installed Elevation, Add		4.14	
1860	For over 40' Installed Elevation, Add		4.73	
2070	Conduit to 14' high, rigid galv steel, elbow, 1.25" dia	EA	24.92	3.44
1850	For 14'-20' Installed Elevation, Add		1.58	
1852	For 21'-25' Installed Elevation, Add		3.15	
1854	For 26'-30' Installed Elevation, Add		3.94	
1856	For 31'-35' Installed Elevation, Add		4.73	
1858	For 36'-40' Installed Elevation, Add		5.52	
1860	For over 40' Installed Elevation, Add		6.30	
2100	Conduit to 14' high, rigid galv steel, elbow, 1.5" dia	EA	29.62	3.37
1850	For 14'-20' Installed Elevation, Add		1.77	
1852	For 21'-25' Installed Elevation, Add		3.55	
1854	For 26'-30' Installed Elevation, Add		4.43	
1856	For 31'-35' Installed Elevation, Add		5.32	
1858	For 36'-40' Installed Elevation, Add		6.21	
1860	For over 40' Installed Elevation, Add		7.09	
2130	Conduit to 14' high, rigid galv steel, elbow, 2" dia	EA	40.81	3.51
1850	For 14'-20' Installed Elevation, Add		2.36	
1852	For 21'-25' Installed Elevation, Add		4.73	
1854	For 26'-30' Installed Elevation, Add		5.91	
1856	For 31'-35' Installed Elevation, Add		7.09	
1858	For 36'-40' Installed Elevation, Add		8.27	
1860	For over 40' Installed Elevation, Add		9.46	
2150	Conduit to 14' high, rigid galv steel, elbow, 2.5" dia	EA	66.83	5.32
1850	For 14'-20' Installed Elevation, Add		3.55	
1852	For 21'-25' Installed Elevation, Add		7.09	
1854	For 26'-30' Installed Elevation, Add		8.87	
1856	For 31'-35' Installed Elevation, Add		10.64	
1858	For 36'-40' Installed Elevation, Add		12.41	
1860	For over 40' Installed Elevation, Add		14.18	
2170	Conduit to 14' high, rigid galv steel, elbow, 3" dia	EA	92.60	7.06
1850	For 14'-20' Installed Elevation, Add		4.73	
1852	For 21'-25' Installed Elevation, Add		9.46	
1854	For 26'-30' Installed Elevation, Add		11.82	
1856	For 31'-35' Installed Elevation, Add		14.18	
1858	For 36'-40' Installed Elevation, Add		16.55	
1860	For over 40' Installed Elevation, Add		18.91	
2200	Conduit to 14' high, rigid galv steel, elbow, 3.5" dia	EA	139.58	10.92
1850	For 14'-20' Installed Elevation, Add		6.75	
1852	For 21'-25' Installed Elevation, Add		13.51	
1854	For 26'-30' Installed Elevation, Add		16.89	
1856	For 31'-35' Installed Elevation, Add		20.26	
1858	For 36'-40' Installed Elevation, Add		23.64	
1860	For over 40' Installed Elevation, Add		27.02	
2220	Conduit to 14' high, rigid galv steel, elbow, 4" dia	EA	152.84	10.57
1850	For 14'-20' Installed Elevation, Add		7.09	
1852	For 21'-25' Installed Elevation, Add		14.18	
1854	For 26'-30' Installed Elevation, Add		17.73	
1856	For 31'-35' Installed Elevation, Add		21.28	
1858	For 36'-40' Installed Elevation, Add		24.82	
1860	For over 40' Installed Elevation, Add		28.37	
2230	Conduit to 14' high, rigid galv steel, elbow, 5" dia	EA	275.10	12.16
1850	For 14'-20' Installed Elevation, Add		8.11	
1852	For 21'-25' Installed Elevation, Add		16.21	
1854	For 26'-30' Installed Elevation, Add		20.26	
1856	For 31'-35' Installed Elevation, Add		24.32	
1858	For 36'-40' Installed Elevation, Add		28.37	
1860	For over 40' Installed Elevation, Add		32.42	
2240	Conduit to 14' high, rigid galv steel, elbow, 6" dia	EA	433.49	21.28
1850	For 14'-20' Installed Elevation, Add		14.18	
1852	For 21'-25' Installed Elevation, Add		28.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1854	For 26'-30' Installed Elevation, Add		35.46	
1856	For 31'-35' Installed Elevation, Add		42.55	
1858	For 36'-40' Installed Elevation, Add		49.64	
1860	For over 40' Installed Elevation, Add		56.74	
16017 2499 Steel, Intermediate conduit (IMC)				
Note: Line Items In This Section Are To Be Used When There Is Insufficient Detail And Shall Be Used Only When Requested In The Scope Of Work.				
2500	Cond to 14' H, 2 elb&11bm clp per 100', 1/2" dia, IMC, incl 2 term	LF	4.06	0.75
1850	For 14'-20' Installed Elevation, Add		0.28	
1852	For 21'-25' Installed Elevation, Add		0.57	
1854	For 26'-30' Installed Elevation, Add		0.71	
1856	For 31'-35' Installed Elevation, Add		0.85	
1858	For 36'-40' Installed Elevation, Add		0.99	
1860	For over 40' Installed Elevation, Add		1.14	
2502	Cond to 14' H, 2 elb&11bm clp per 100', 3/4" dia, IMC, incl 2 term	LF	4.85	0.78
1850	For 14'-20' Installed Elevation, Add		0.33	
1852	For 21'-25' Installed Elevation, Add		0.67	
1854	For 26'-30' Installed Elevation, Add		0.84	
1856	For 31'-35' Installed Elevation, Add		1.00	
1858	For 36'-40' Installed Elevation, Add		1.17	
1860	For over 40' Installed Elevation, Add		1.34	
2504	Cond to 14' H, 2 elb&11bm clp per 100', 1" dia, IMC, incl 2 term	LF	6.32	0.96
1850	For 14'-20' Installed Elevation, Add		0.43	
1852	For 21'-25' Installed Elevation, Add		0.86	
1854	For 26'-30' Installed Elevation, Add		1.07	
1856	For 31'-35' Installed Elevation, Add		1.29	
1858	For 36'-40' Installed Elevation, Add		1.50	
1860	For over 40' Installed Elevation, Add		1.72	
2506	Cond to 14' H, 2 elb&11bm clp per 100', 1-1/4" dia, IMC, incl 2 term	LF	7.23	0.99
1850	For 14'-20' Installed Elevation, Add		0.46	
1852	For 21'-25' Installed Elevation, Add		0.92	
1854	For 26'-30' Installed Elevation, Add		1.16	
1856	For 31'-35' Installed Elevation, Add		1.39	
1858	For 36'-40' Installed Elevation, Add		1.62	
1860	For over 40' Installed Elevation, Add		1.85	
2508	Cond to 14' H, 2 elb&11bm clp per 100', 1-1/2" dia, IMC, incl 2 term	LF	8.26	0.96
1850	For 14'-20' Installed Elevation, Add		0.50	
1852	For 21'-25' Installed Elevation, Add		1.00	
1854	For 26'-30' Installed Elevation, Add		1.25	
1856	For 31'-35' Installed Elevation, Add		1.50	
1858	For 36'-40' Installed Elevation, Add		1.75	
1860	For over 40' Installed Elevation, Add		2.00	
2510	Cond to 14' H, 2 elb&11bm clp per 100', 2" dia, IMC, incl 2 term	LF	9.97	1.03
1850	For 14'-20' Installed Elevation, Add		0.60	
1852	For 21'-25' Installed Elevation, Add		1.20	
1854	For 26'-30' Installed Elevation, Add		1.51	
1856	For 31'-35' Installed Elevation, Add		1.81	
1858	For 36'-40' Installed Elevation, Add		2.11	
1860	For over 40' Installed Elevation, Add		2.41	
2512	Cond to 14' H, 2 elb&11bm clp per 100', 2-1/2" dia, IMC, incl 2 term	LF	14.56	1.10
1850	For 14'-20' Installed Elevation, Add		0.75	
1852	For 21'-25' Installed Elevation, Add		1.51	
1854	For 26'-30' Installed Elevation, Add		1.88	
1856	For 31'-35' Installed Elevation, Add		2.26	
1858	For 36'-40' Installed Elevation, Add		2.64	
1860	For over 40' Installed Elevation, Add		3.01	
2514	Cond to 14' H, 2 elb&11bm clp per 100', 3" dia, IMC, incl 2 term	LF	19.28	1.49
1850	For 14'-20' Installed Elevation, Add		1.00	
1852	For 21'-25' Installed Elevation, Add		2.01	
1854	For 26'-30' Installed Elevation, Add		2.51	
1856	For 31'-35' Installed Elevation, Add		3.01	
1858	For 36'-40' Installed Elevation, Add		3.51	
1860	For over 40' Installed Elevation, Add		4.02	
2516	Cond to 14' H, 2 elb&11bm clp per 100', 3-1/2" dia, IMC, incl 2 term	LF	23.63	1.74
1850	For 14'-20' Installed Elevation, Add		1.11	
1852	For 21'-25' Installed Elevation, Add		2.23	
1854	For 26'-30' Installed Elevation, Add		2.79	
1856	For 31'-35' Installed Elevation, Add		3.34	
1858	For 36'-40' Installed Elevation, Add		3.90	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1860	For over 40' Installed Elevation, Add		4.46	
2518	Cond to 14' H, 2 elb&11bm clp per 100', 4"dia, IMC, incl 2 term	LF	26.88	1.81
1850	For 14'-20' Installed Elevation, Add		1.21	
1852	For 21'-25' Installed Elevation, Add		2.41	
1854	For 26'-30' Installed Elevation, Add		3.02	
1856	For 31'-35' Installed Elevation, Add		3.62	
1858	For 36'-40' Installed Elevation, Add		4.22	
1860	For over 40' Installed Elevation, Add		4.82	
16017 2749 Steel, intermediate conduit (IMC), elbows				
2750	Conduit to 14' H, 1/2" dia, stl, (IMC), elbow	EA	12.45	3.02
1850	For 14'-20' Installed Elevation, Add		0.89	
1852	For 21'-25' Installed Elevation, Add		1.77	
1854	For 26'-30' Installed Elevation, Add		2.22	
1856	For 31'-35' Installed Elevation, Add		2.66	
1858	For 36'-40' Installed Elevation, Add		3.10	
1860	For over 40' Installed Elevation, Add		3.55	
2760	Conduit 3/4" IMC Elbow	EA	10.23	
1850	For 14'-20' Installed Elevation, Add		0.50	
1852	For 21'-25' Installed Elevation, Add		1.00	
1854	For 26'-30' Installed Elevation, Add		1.25	
1856	For 31'-35' Installed Elevation, Add		1.50	
1858	For 36'-40' Installed Elevation, Add		1.75	
1860	For over 40' Installed Elevation, Add		2.00	
2800	Conduit to 14' H, 1" dia, stl, (IMC), elbow	EA	18.12	4.01
1850	For 14'-20' Installed Elevation, Add		1.18	
1852	For 21'-25' Installed Elevation, Add		2.36	
1854	For 26'-30' Installed Elevation, Add		2.96	
1856	For 31'-35' Installed Elevation, Add		3.55	
1858	For 36'-40' Installed Elevation, Add		4.14	
1860	For over 40' Installed Elevation, Add		4.73	
2830	Conduit to 14' H, 1.25" dia, stl, (IMC), elbow	EA	25.99	7.94
1850	For 14'-20' Installed Elevation, Add		1.58	
1852	For 21'-25' Installed Elevation, Add		3.15	
1854	For 26'-30' Installed Elevation, Add		3.94	
1856	For 31'-35' Installed Elevation, Add		4.73	
1858	For 36'-40' Installed Elevation, Add		5.52	
1860	For over 40' Installed Elevation, Add		6.30	
2850	Conduit to 14' H, 1.5" dia, stl, (IMC), elbow	EA	29.20	7.16
1850	For 14'-20' Installed Elevation, Add		1.77	
1852	For 21'-25' Installed Elevation, Add		3.55	
1854	For 26'-30' Installed Elevation, Add		4.43	
1856	For 31'-35' Installed Elevation, Add		5.32	
1858	For 36'-40' Installed Elevation, Add		6.21	
1860	For over 40' Installed Elevation, Add		7.09	
2870	Conduit to 14' H, 2" dia, stl, (IMC), elbow	EA	40.16	10.14
1850	For 14'-20' Installed Elevation, Add		2.36	
1852	For 21'-25' Installed Elevation, Add		4.73	
1854	For 26'-30' Installed Elevation, Add		5.91	
1856	For 31'-35' Installed Elevation, Add		7.09	
1858	For 36'-40' Installed Elevation, Add		8.27	
1860	For over 40' Installed Elevation, Add		9.46	
2900	Conduit to 14' H, 2.5" dia, stl, (IMC), elbow	EA	64.79	14.18
1850	For 14'-20' Installed Elevation, Add		3.55	
1852	For 21'-25' Installed Elevation, Add		7.09	
1854	For 26'-30' Installed Elevation, Add		8.87	
1856	For 31'-35' Installed Elevation, Add		10.64	
1858	For 36'-40' Installed Elevation, Add		12.41	
1860	For over 40' Installed Elevation, Add		14.18	
2930	Conduit to 14' H, 3" dia, stl, (IMC), elbow	EA	92.16	20.28
1850	For 14'-20' Installed Elevation, Add		4.73	
1852	For 21'-25' Installed Elevation, Add		9.46	
1854	For 26'-30' Installed Elevation, Add		11.82	
1856	For 31'-35' Installed Elevation, Add		14.18	
1858	For 36'-40' Installed Elevation, Add		16.55	
1860	For over 40' Installed Elevation, Add		18.91	
2950	Conduit to 14' H, 3.5" dia, stl, (IMC), elbow	EA	135.93	30.32
1850	For 14'-20' Installed Elevation, Add		6.75	
1852	For 21'-25' Installed Elevation, Add		13.51	
1854	For 26'-30' Installed Elevation, Add		16.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1856	For 31'-35' Installed Elevation, Add		20.26	
1858	For 36'-40' Installed Elevation, Add		23.64	
1860	For over 40' Installed Elevation, Add		27.02	
2970	Conduit to 14' H, 4" dia, stl, (IMC), elbow	EA	150.27	35.18
1850	For 14'-20' Installed Elevation, Add		7.09	
1852	For 21'-25' Installed Elevation, Add		14.18	
1854	For 26'-30' Installed Elevation, Add		17.73	
1856	For 31'-35' Installed Elevation, Add		21.28	
1858	For 36'-40' Installed Elevation, Add		24.82	
1860	For over 40' Installed Elevation, Add		28.37	
16017 4999	Electric metallic tubing (EMT)			
5000	Conduit, to 14' h, 0.5"dia, incl 2 term, &11bm clp/100', (EMT)	LF	2.13	0.89
1850	For 14'-20' Installed Elevation, Add		0.17	
1852	For 21'-25' Installed Elevation, Add		0.33	
1854	For 26'-30' Installed Elevation, Add		0.42	
1856	For 31'-35' Installed Elevation, Add		0.50	
1858	For 36'-40' Installed Elevation, Add		0.58	
1860	For over 40' Installed Elevation, Add		0.67	
5020	Conduit, to 14' h, 3/4"dia, incl 2 term, &11 bm clp/100', (EMT)	LF	2.84	0.92
1850	For 14'-20' Installed Elevation, Add		0.22	
1852	For 21'-25' Installed Elevation, Add		0.44	
1854	For 26'-30' Installed Elevation, Add		0.55	
1856	For 31'-35' Installed Elevation, Add		0.65	
1858	For 36'-40' Installed Elevation, Add		0.76	
1860	For over 40' Installed Elevation, Add		0.87	
5040	Conduit, to 14' h, 1"dia, incl 2 term, 2 elb&11bm clp/100', (EMT)	LF	3.45	1.17
1850	For 14'-20' Installed Elevation, Add		0.25	
1852	For 21'-25' Installed Elevation, Add		0.49	
1854	For 26'-30' Installed Elevation, Add		0.62	
1856	For 31'-35' Installed Elevation, Add		0.74	
1858	For 36'-40' Installed Elevation, Add		0.86	
1860	For over 40' Installed Elevation, Add		0.99	
5080	Conduit, to 14' h, 1.5"dia, incl 2 term, 2 elb&11 bm clp/100', (EMT)	LF	4.86	1.63
1850	For 14'-20' Installed Elevation, Add		0.32	
1852	For 21'-25' Installed Elevation, Add		0.63	
1854	For 26'-30' Installed Elevation, Add		0.79	
1856	For 31'-35' Installed Elevation, Add		0.95	
1858	For 36'-40' Installed Elevation, Add		1.10	
1860	For over 40' Installed Elevation, Add		1.26	
5082	Conduit, to 14' h, 2"dia, incl 2 term, 2 elb&11 bm clp/100', (EMT)	LF	6.22	1.88
1850	For 14'-20' Installed Elevation, Add		0.38	
1852	For 21'-25' Installed Elevation, Add		0.75	
1854	For 26'-30' Installed Elevation, Add		0.94	
1856	For 31'-35' Installed Elevation, Add		1.13	
1858	For 36'-40' Installed Elevation, Add		1.32	
1860	For over 40' Installed Elevation, Add		1.50	
5084	Conduit, to 14' h, 2.5"dia, incl 2 term, 2 elb&11bm clp/100', (EMT)	LF	10.90	2.38
1850	For 14'-20' Installed Elevation, Add		0.50	
1852	For 21'-25' Installed Elevation, Add		1.01	
1854	For 26'-30' Installed Elevation, Add		1.26	
1856	For 31'-35' Installed Elevation, Add		1.51	
1858	For 36'-40' Installed Elevation, Add		1.76	
1860	For over 40' Installed Elevation, Add		2.01	
5086	Conduit, to 14' h, 3"dia, incl 2 term, 2 elb&11bm clp/100', (EMT)	LF	13.18	2.95
1850	For 14'-20' Installed Elevation, Add		0.60	
1852	For 21'-25' Installed Elevation, Add		1.20	
1854	For 26'-30' Installed Elevation, Add		1.51	
1856	For 31'-35' Installed Elevation, Add		1.81	
1858	For 36'-40' Installed Elevation, Add		2.11	
1860	For over 40' Installed Elevation, Add		2.41	
5088	Conduit, to 14' h, 3.5"dia, incl 2 term, 2 elb&11bm clp/100', (EMT)	LF	15.85	3.62
1850	For 14'-20' Installed Elevation, Add		0.67	
1852	For 21'-25' Installed Elevation, Add		1.33	
1854	For 26'-30' Installed Elevation, Add		1.67	
1856	For 31'-35' Installed Elevation, Add		2.00	
1858	For 36'-40' Installed Elevation, Add		2.33	
1860	For over 40' Installed Elevation, Add		2.67	
5090	Conduit, to 14' h, 4"dia, incl 2 term, 2 elb&11bm clp/100', (EMT)	LF	18.05	3.94
1850	For 14'-20' Installed Elevation, Add		0.75	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1852	For 21'-25' Installed Elevation, Add		1.51	
1854	For 26'-30' Installed Elevation, Add		1.88	
1856	For 31'-35' Installed Elevation, Add		2.26	
1858	For 36'-40' Installed Elevation, Add		2.64	
1860	For over 40' Installed Elevation, Add		3.01	
16018 0010	Conduit, includes couplings only Branch Rough-In			
Note: 1.) based On Flat Ceiling Or Wall. Mounting Height Up to 14 Ft. Single Rod. In Masonry Walls 2.) Labor Unit Includes Unloading At Jobsite. Measuring, Cutting, Layout, Fabrication and Assembly to Existing Support System 3.) Material Costs are for Called Item 4.) Labor For Supporting Strap, Hanger and Fastening Not Included. See CSI 16032-0010.				
16018 0499	Steel, rigid galvanized (RGS)			
0500	Conduit to 14' H, 1/2" dia, incl couplings only, steel rigid gal	LF	3.07	1.06
1850	For 14'-20' Installed Elevation, Add		0.19	
1852	For 21'-25' Installed Elevation, Add		0.39	
1854	For 26'-30' Installed Elevation, Add		0.49	
1856	For 31'-35' Installed Elevation, Add		0.58	
1858	For 36'-40' Installed Elevation, Add		0.68	
1860	For Over 40' Installed Elevation, Add		0.78	
0520	Conduit to 14' H, 3/4" dia, incl couplings only, steel rigid gal	LF	3.68	1.14
1850	For 14'-20' Installed Elevation, Add		0.23	
1852	For 21'-25' Installed Elevation, Add		0.45	
1854	For 26'-30' Installed Elevation, Add		0.57	
1856	For 31'-35' Installed Elevation, Add		0.68	
1858	For 36'-40' Installed Elevation, Add		0.79	
1860	For Over 40' Installed Elevation, Add		0.91	
0540	Conduit to 14' H, 1" dia, incl couplings only, steel rigid galv	LF	5.13	1.63
1850	For 14'-20' Installed Elevation, Add		0.31	
1852	For 21'-25' Installed Elevation, Add		0.61	
1854	For 26'-30' Installed Elevation, Add		0.76	
1856	For 31'-35' Installed Elevation, Add		0.92	
1858	For 36'-40' Installed Elevation, Add		1.07	
1860	For Over 40' Installed Elevation, Add		1.22	
0560	Conduit to 14' H, 1.25" dia, incl couplings only, steel rigid gal	LF	5.86	1.63
1850	For 14'-20' Installed Elevation, Add		0.32	
1852	For 21'-25' Installed Elevation, Add		0.64	
1854	For 26'-30' Installed Elevation, Add		0.81	
1856	For 31'-35' Installed Elevation, Add		0.97	
1858	For 36'-40' Installed Elevation, Add		1.13	
1860	For Over 40' Installed Elevation, Add		1.29	
0580	Conduit to 14' H, 1.5" dia, incl couplings only, steel rigid galv	LF	6.77	1.95
1850	For 14'-20' Installed Elevation, Add		0.36	
1852	For 21'-25' Installed Elevation, Add		0.71	
1854	For 26'-30' Installed Elevation, Add		0.89	
1856	For 31'-35' Installed Elevation, Add		1.07	
1858	For 36'-40' Installed Elevation, Add		1.24	
1860	For Over 40' Installed Elevation, Add		1.42	
0600	Conduit to 14' H, 2" dia, incl couplings only, steel rigid galv	LF	8.68	2.23
1850	For 14'-20' Installed Elevation, Add		0.44	
1852	For 21'-25' Installed Elevation, Add		0.87	
1854	For 26'-30' Installed Elevation, Add		1.09	
1856	For 31'-35' Installed Elevation, Add		1.31	
1858	For 36'-40' Installed Elevation, Add		1.53	
1860	For Over 40' Installed Elevation, Add		1.74	
0620	Conduit to 14' H, 2.5" dia, incl couplings only, steel rigid galv	LF	13.30	3.05
1850	For 14'-20' Installed Elevation, Add		0.59	
1852	For 21'-25' Installed Elevation, Add		1.18	
1854	For 26'-30' Installed Elevation, Add		1.48	
1856	For 31'-35' Installed Elevation, Add		1.77	
1858	For 36'-40' Installed Elevation, Add		2.07	
1860	For Over 40' Installed Elevation, Add		2.36	
0640	Conduit to 14' H, 3" dia, incl couplings only, steel rigid galv	LF	18.41	3.19
1850	For 14'-20' Installed Elevation, Add		0.89	
1852	For 21'-25' Installed Elevation, Add		1.77	
1854	For 26'-30' Installed Elevation, Add		2.22	
1856	For 31'-35' Installed Elevation, Add		2.66	
1858	For 36'-40' Installed Elevation, Add		3.10	
1860	For Over 40' Installed Elevation, Add		3.55	
0660	Conduit to 14' H, 3.5" dia, incl couplings only, steel rigid galv	LF	21.25	4.47
1850	For 14'-20' Installed Elevation, Add		0.95	
1852	For 21'-25' Installed Elevation, Add		1.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1854	For 26'-30' Installed Elevation, Add		2.37	
1856	For 31'-35' Installed Elevation, Add		2.84	
1858	For 36'-40' Installed Elevation, Add		3.31	
1860	For Over 40' Installed Elevation, Add		3.78	
0680	Conduit to 14' H, 4" dia, incl couplings only, steel rigid galv	LF	24.59	5.39
1850	For 14'-20' Installed Elevation, Add		1.09	
1852	For 21'-25' Installed Elevation, Add		2.18	
1854	For 26'-30' Installed Elevation, Add		2.73	
1856	For 31'-35' Installed Elevation, Add		3.27	
1858	For 36'-40' Installed Elevation, Add		3.82	
1860	For Over 40' Installed Elevation, Add		4.36	
0700	Conduit to 14' H, 5" dia, incl couplings only, steel rigid galv	LF	39.09	6.14
1850	For 14'-20' Installed Elevation, Add		1.14	
1852	For 21'-25' Installed Elevation, Add		2.27	
1854	For 26'-30' Installed Elevation, Add		2.84	
1856	For 31'-35' Installed Elevation, Add		3.41	
1858	For 36'-40' Installed Elevation, Add		3.97	
1860	For Over 40' Installed Elevation, Add		4.54	
0720	Conduit to 14' H, 6" dia, incl couplings only, steel rigid galv	LF	50.32	6.42
1850	For 14'-20' Installed Elevation, Add		1.18	
1852	For 21'-25' Installed Elevation, Add		2.36	
1854	For 26'-30' Installed Elevation, Add		2.96	
1856	For 31'-35' Installed Elevation, Add		3.55	
1858	For 36'-40' Installed Elevation, Add		4.14	
1860	For Over 40' Installed Elevation, Add		4.73	
16018 0999 Steel, intermediate conduit (IMC)				
1000	Conduit to 14' high, 1/2" dia, incl couplings only, steel (IMC)	LF	2.72	1.10
1850	For 14'-20' Installed Elevation, Add		0.18	
1852	For 21'-25' Installed Elevation, Add		0.37	
1854	For 26'-30' Installed Elevation, Add		0.46	
1856	For 31'-35' Installed Elevation, Add		0.55	
1858	For 36'-40' Installed Elevation, Add		0.64	
1860	For Over 40' Installed Elevation, Add		0.73	
1010	Conduit to 14' high, 3/4" dia, incl couplings only, steel (IMC)	LF	3.21	1.06
1850	For 14'-20' Installed Elevation, Add		0.22	
1852	For 21'-25' Installed Elevation, Add		0.44	
1854	For 26'-30' Installed Elevation, Add		0.55	
1856	For 31'-35' Installed Elevation, Add		0.65	
1858	For 36'-40' Installed Elevation, Add		0.76	
1860	For Over 40' Installed Elevation, Add		0.87	
1020	Conduit to 14' high, 1" dia, incl couplings only, steel (IMC)	LF	4.39	1.10
1850	For 14'-20' Installed Elevation, Add		0.28	
1852	For 21'-25' Installed Elevation, Add		0.57	
1854	For 26'-30' Installed Elevation, Add		0.71	
1856	For 31'-35' Installed Elevation, Add		0.85	
1858	For 36'-40' Installed Elevation, Add		0.99	
1860	For Over 40' Installed Elevation, Add		1.14	
1030	Conduit to 14' high, 1.25" dia, incl couplings only, steel (IMC)	LF	4.98	1.63
1850	For 14'-20' Installed Elevation, Add		0.31	
1852	For 21'-25' Installed Elevation, Add		0.61	
1854	For 26'-30' Installed Elevation, Add		0.76	
1856	For 31'-35' Installed Elevation, Add		0.92	
1858	For 36'-40' Installed Elevation, Add		1.07	
1860	For Over 40' Installed Elevation, Add		1.22	
1040	Conduit to 14' high, 1.5" dia, incl couplings only, steel (IMC)	LF	5.68	1.81
1850	For 14'-20' Installed Elevation, Add		0.33	
1852	For 21'-25' Installed Elevation, Add		0.67	
1854	For 26'-30' Installed Elevation, Add		0.84	
1856	For 31'-35' Installed Elevation, Add		1.00	
1858	For 36'-40' Installed Elevation, Add		1.17	
1860	For Over 40' Installed Elevation, Add		1.34	
1050	Conduit to 14' high, 2" dia, incl couplings only, steel (IMC)	LF	7.21	2.23
1850	For 14'-20' Installed Elevation, Add		0.41	
1852	For 21'-25' Installed Elevation, Add		0.81	
1854	For 26'-30' Installed Elevation, Add		1.01	
1856	For 31'-35' Installed Elevation, Add		1.22	
1858	For 36'-40' Installed Elevation, Add		1.42	
1860	For Over 40' Installed Elevation, Add		1.62	
1060	Conduit to 14' high, 2.5" dia, incl couplings only, steel (IMC)	LF	12.17	2.52

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1850	For 14'-20' Installed Elevation, Add		0.54	
1852	For 21'-25' Installed Elevation, Add		1.07	
1854	For 26'-30' Installed Elevation, Add		1.34	
1856	For 31'-35' Installed Elevation, Add		1.61	
1858	For 36'-40' Installed Elevation, Add		1.87	
1860	For Over 40' Installed Elevation, Add		2.14	
1070	Conduit to 14' high, 3" dia, incl couplings only, steel (IMC)	LF	15.65	3.26
1850	For 14'-20' Installed Elevation, Add		0.71	
1852	For 21'-25' Installed Elevation, Add		1.42	
1854	For 26'-30' Installed Elevation, Add		1.77	
1856	For 31'-35' Installed Elevation, Add		2.13	
1858	For 36'-40' Installed Elevation, Add		2.48	
1860	For Over 40' Installed Elevation, Add		2.84	
1080	Conduit to 14' high, 3.5" dia, incl couplings only, steel (IMC)	LF	18.34	3.19
1850	For 14'-20' Installed Elevation, Add		0.81	
1852	For 21'-25' Installed Elevation, Add		1.62	
1854	For 26'-30' Installed Elevation, Add		2.03	
1856	For 31'-35' Installed Elevation, Add		2.43	
1858	For 36'-40' Installed Elevation, Add		2.84	
1860	For Over 40' Installed Elevation, Add		3.24	
1090	Conduit to 14' high, 4" dia, incl couplings only, steel (IMC)	LF	21.21	3.83
1850	For 14'-20' Installed Elevation, Add		0.95	
1852	For 21'-25' Installed Elevation, Add		1.89	
1854	For 26'-30' Installed Elevation, Add		2.37	
1856	For 31'-35' Installed Elevation, Add		2.84	
1858	For 36'-40' Installed Elevation, Add		3.31	
1860	For Over 40' Installed Elevation, Add		3.78	
16018 1100 Electrical Metallic (EMT)				
1110	1/2" Dia EMT	LF	1.36	
1120	3/4" Dia EMT	LF	1.75	
1130	1" Dia EMT	LF	2.34	
1140	1 1/4" Dia EMT	LF	3.07	
1150	1 1/2" Dia EMT	LF	3.45	
1160	2" Dia EMT	LF	4.31	
1170	2 1/2" Dia EMT	LF	5.73	
1180	3" Dia EMT	LF	6.17	
1190	3 1/2" Dia EMT	LF	8.18	
1195	4" Dia EMT	LF	10.36	
16019 2600 Cutting And Drilling				
2601	hole drlg to 10' hi, conc wl, 8 " thk, 1/2" pipe	EA	2.96	
2602	hole drlg to 10' hi, conc wl, 8 " thk, 3/4" pipe	EA	2.96	
2603	hole drlg to 10' hi, conc wl, 8 " thk, 1" pipe	EA	3.73	
2604	hole drlg to 10' hi, conc wl, 8 " thk, 1-1/4" pipe	EA	3.73	
2605	hole drlg to 10' hi, conc wl, 8 " thk, 1-1/2" pipe	EA	3.73	
2606	hole drlg to 10' hi, conc wl, 8 " thk, 2" pipe	EA	8.06	
2607	hole drlg to 10' hi, conc wl, 8 " thk, 2-1/2" pipe	EA	8.06	
2608	hole drlg to 10' hi, conc wl, 8 " thk, 3" pipe	EA	8.06	
2609	hole drlg to 10' hi, conc wl, 8 " thk, 3-1/2" pipe	EA	10.74	
2610	hole drlg to 10' hi, conc wl, 8 " thk, 4" pipe	EA	10.74	
2611	hole drlg to 10' hi, conc wl, 1 2" thk, 1/2" pipe	EA	3.77	
2612	hole drlg to 10' hi, conc wl, 1 2" thk, 3/4" pipe	EA	3.77	
2613	hole drlg to 10' hi, conc wl, 1 2" thk, 1" pipe	EA	4.86	
2614	hole drlg to 10' hi, conc wl, 1 2" thk, 1-1/4" pipe	EA	4.86	
2615	hole drlg to 10' hi, conc wl, 1 2" thk, 1-1/2" pipe	EA	4.86	
2616	hole drlg to 10' hi, conc wl, 1 2" thk, 2" pipe	EA	9.85	
2617	hole drlg to 10' hi, conc wl, 1 2" thk, 2-1/2" pipe	EA	9.85	
2618	hole drlg to 10' hi, conc wl, 1 2" thk, 3" pipe	EA	9.85	
2619	hole drlg to 10' hi, conc wl, 1 2" thk, 3-1/2" pipe	EA	12.66	
2620	hole drlg to 10' hi, conc wl, 1 2" thk, 4" pipe	EA	14.18	
2621	hole drlg to 10' hi, conc wl, 1 6" thk, 1/2" pipe	EA	4.67	
2622	hole drlg to 10' hi, conc wl, 1 6" thk, 3/4" pipe	EA	5.07	
2623	hole drlg to 10' hi, conc wl, 1 6" thk, 1" pipe	EA	5.91	
2624	hole drlg to 10' hi, conc wl, 1 6" thk, 1-1/4" pipe	EA	6.45	
2625	hole drlg to 10' hi, conc wl, 1 6" thk, 1-1/2" pipe	EA	6.45	
2626	hole drlg to 10' hi, conc wl, 1 6" thk, 2" pipe	EA	11.82	
2627	hole drlg to 10' hi, conc wl, 1 6" thk, 2-1/2" pipe	EA	13.13	
2628	hole drlg to 10' hi, conc wl, 1 6" thk, 3" pipe	EA	14.18	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2629	hole drlg to 10' hi, conc wl, 1 6" thk, 3-1/2" pipe	EA	15.42	
2630	hole drlg to 10' hi, conc wl, 1 6" thk, 4" pipe	EA	17.73	
2631	hole drlg to 10' hi, conc wl, 2 0" thk, 1/2" pipe	EA	5.54	
2632	hole drlg to 10' hi, conc wl, 2 0" thk, 3/4" pipe	EA	5.91	
2633	hole drlg to 10' hi, conc wl, 2 0" thk, 1" pipe	EA	7.09	
2634	hole drlg to 10' hi, conc wl, 2 0" thk, 1-1/4" pipe	EA	7.39	
2635	hole drlg to 10' hi, conc wl, 2 0" thk, 1-1/2" pipe	EA	7.71	
2636	hole drlg to 10' hi, conc wl, 2 0" thk, 2" pipe	EA	13.13	
2637	hole drlg to 10' hi, conc wl, 2 0" thk, 2-1/2" pipe	EA	14.77	
2638	hole drlg to 10' hi, conc wl, 2 0" thk, 3" pipe	EA	16.12	
2639	hole drlg to 10' hi, conc wl, 2 0" thk, 3-1/2" pipe	EA	17.73	
2640	hole drlg to 10' hi, conc wl, 2 0" thk, 4" pipe	EA	20.86	
2641	hole drlg to 10' hi, conc wl, 2 4" thk, 1/2" pipe	EA	6.45	
2642	hole drlg to 10' hi, conc wl, 2 4" thk, 3/4" pipe	EA	6.95	
2643	hole drlg to 10' hi, conc wl, 2 4" thk, 1" pipe	EA	8.24	
2644	hole drlg to 10' hi, conc wl, 2 4" thk, 1-1/4" pipe	EA	8.87	
2645	hole drlg to 10' hi, conc wl, 2 4" thk, 1-1/2" pipe	EA	8.87	
2646	hole drlg to 10' hi, conc wl, 2 4" thk, 2" pipe	EA	14.77	
2647	hole drlg to 10' hi, conc wl, 2 4" thk, 2-1/2" pipe	EA	16.12	
2648	hole drlg to 10' hi, conc wl, 2 4" thk, 3" pipe	EA	17.73	
2649	hole drlg to 10' hi, conc wl, 2 4" thk, 3-1/2" pipe	EA	19.70	
2650	hole drlg to 10' hi, conc wl, 2 4" thk, 4" pipe	EA	23.64	
2651	hole drlg to 10' hi, brk wl, 8" thk, 1/2" pipe	EA	1.97	
2652	hole drlg to 10' hi, brk wl, 8" thk, 3/4" pipe	EA	1.97	
2653	hole drlg to 10' hi, brk wl, 8" thk, 1" pipe size	EA	2.67	
2654	hole drlg to 10' hi, brk wl, 8" thk, 1-1/4" pipe	EA	2.67	
2655	hole drlg to 10' hi, brk wl, 8" thk, 1-1/2" pipe	EA	2.67	
2656	hole drlg to 10' hi, brk wl, 8" thk, 2" pipe size	EA	6.22	
2657	hole drlg to 10' hi, brk wl, 8" thk, 2-1/2" pipe	EA	6.22	
2658	hole drlg to 10' hi, brk wl, 8" thk, 3" pipe size	EA	6.22	
2659	hole drlg to 10' hi, brk wl, 8" thk, 3-1/2" pipe	EA	8.06	
2660	hole drlg to 10' hi, brk wl, 8" thk, 4" pipe size	EA	8.87	
2661	hole drlg to 10' hi, brk wl, 12 " thk, 1/2" pipe	EA	2.45	
2662	hole drlg to 10' hi, brk wl, 12 " thk, 3/4" pipe	EA	2.45	
2663	hole drlg to 10' hi, brk wl, 12 " thk, 1" pipe	EA	3.22	
2664	hole drlg to 10' hi, brk wl, 12 " thk, 1-1/4" pipe	EA	3.22	
2665	hole drlg to 10' hi, brk wl, 12 " thk, 1-1/2" pipe	EA	3.22	
2666	hole drlg to 10' hi, brk wl, 12 " thk, 2" pipe	EA	7.09	
2667	hole drlg to 10' hi, brk wl, 12 " thk, 2-1/2" pipe	EA	7.09	
2668	hole drlg to 10' hi, brk wl, 12 " thk, 3" pipe	EA	7.09	
2669	hole drlg to 10' hi, brk wl, 12 " thk, 3-1/2" pipe	EA	9.33	
2670	hole drlg to 10' hi, brk wl, 12 " thk, 4" pipe	EA	10.74	
2671	hole drlg to 10' hi, brk wl, 16 " thk, 1/2" pipe	EA	2.88	
2672	hole drlg to 10' hi, brk wl, 16 " thk, 3/4" pipe	EA	2.88	
2673	hole drlg to 10' hi, brk wl, 16 " thk, 1" pipe	EA	3.81	
2674	hole drlg to 10' hi, brk wl, 16 " thk, 1-1/4" pipe	EA	3.81	
2675	hole drlg to 10' hi, brk wl, 16 " thk, 1-1/2" pipe	EA	3.81	
2676	hole drlg to 10' hi, brk wl, 16 " thk, 2" pipe	EA	8.06	
2677	hole drlg to 10' hi, brk wl, 16 " thk, 2-1/2" pipe	EA	8.06	
2678	hole drlg to 10' hi, brk wl, 16 " thk, 3" pipe	EA	8.06	
2679	hole drlg to 10' hi, brk wl, 16 " thk, 3-1/2" pipe	EA	10.74	
2680	hole drlg to 10' hi, brk wl, 16 " thk, 4" pipe	EA	11.82	
2681	hole drlg to 10' hi, brk wl, 20 " thk, 1/2" pipe	EA	3.32	
2682	hole drlg to 10' hi, brk wl, 20 " thk, 3/4" pipe	EA	3.32	
2683	hole drlg to 10' hi, brk wl, 20 " thk, 1" pipe	EA	4.43	
2684	hole drlg to 10' hi, brk wl, 20 " thk, 1-1/4" pipe	EA	4.43	
2685	hole drlg to 10' hi, brk wl, 20 " thk, 1-1/2" pipe	EA	4.43	
2686	hole drlg to 10' hi, brk wl, 20 " thk, 2" pipe	EA	8.87	
2687	hole drlg to 10' hi, brk wl, 20 " thk, 2-1/2" pipe	EA	8.87	
2688	hole drlg to 10' hi, brk wl, 20 " thk, 3" pipe	EA	8.87	
2689	hole drlg to 10' hi, brk wl, 20 " thk, 3-1/2" pipe	EA	11.82	
2690	hole drlg to 10' hi, brk wl, 20 " thk, 4" pipe	EA	13.13	
2691	hole drlg to 10' hi, brk wl, 24 " thk, 1/2" pipe	EA	3.77	
2692	hole drlg to 10' hi, brk wl, 24 " thk, 3/4" pipe	EA	3.77	
2693	hole drlg to 10' hi, brk wl, 24 " thk, 1" pipe	EA	5.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2694	hole drlg to 10' hi, brk wl, 24 " thk, 1-1/4" pipe	EA	5.00	
2695	hole drlg to 10' hi, brk wl, 24 " thk, 1-1/2" pipe	EA	5.00	
2696	hole drlg to 10' hi, brk wl, 24 " thk, 2" pipe	EA	9.85	
2697	hole drlg to 10' hi, brk wl, 24 " thk, 2-1/2" pipe	EA	9.85	
2698	hole drlg to 10' hi, brk wl, 24 " thk, 3" pipe	EA	9.85	
2699	hole drlg to 10' hi, brk wl, 24 " thk, 3-1/2" pipe	EA	12.66	
2700	hole drlg to 10' hi, brk wl, 24 " thk, 4" pipe	EA	14.18	
2701	kos to 8' hi, met boxes&encls, Wh ole saw, 1/2" pipe	EA	0.67	
2702	kos to 8' hi, met boxes&encls, Wh ole saw, 3/4" pipe	EA	0.75	
2703	kos to 8' hi, met boxes&encls, Whole saw, 1" pipe	EA	0.89	
2704	kos to 8' hi, met boxes&encls, Wh ole saw, 1-1/4" pipe	EA	0.98	
2705	kos to 8' hi, met boxes&encls, Wh ole saw, 1-1/2" pipe	EA	1.11	
2706	kos to 8' hi, met boxes&encls, Whole saw, 2" pipe	EA	1.31	
2707	kos to 8' hi, met boxes&encls, Wh ole saw, 2-1/2" pipe	EA	1.77	
2708	kos to 8' hi, met boxes&encls, Whole saw, 3" pipe	EA	2.22	
2709	kos to 8' hi, met boxes&encls, Wh ole saw, 3-1/2" pipe	EA	2.73	
2710	kos to 8' hi, met boxes&encls, Whole saw, 4" pipe	EA	3.22	
2711	kos to 8' hi, met boxes&encls, Wh and punch set, 1/2" pipe	EA	0.89	
2712	kos to 8' hi, met boxes&encls, Wh and punch set, 3/4" pipe	EA	1.11	
2713	kos to 8' hi, met boxes&encls, Wh and punch set, 1" pipe	EA	1.18	
2714	kos to 8' hi, met boxes&encls, Wh and punch set, 1-1/4" pipe	EA	1.27	
2715	kos to 8' hi, met boxes&encls, Wh and punch set, 1-1/2" pipe	EA	1.37	
2716	kos to 8' hi, met boxes&encls, Wh and punch set, 2" pipe	EA	1.77	
2717	kos to 8' hi, met boxes&encls, Wh and punch set, 2-1/2" pipe	EA	2.09	
2718	kos to 8' hi, met boxes&encls, Wh and punch set, 3" pipe	EA	2.36	
2719	kos to 8' hi, met boxes&encls, Wh and punch set, 3-1/2" pipe	EA	2.96	
2720	kos to 8' hi, met boxes&encls, Wh and punch set, 4" pipe	EA	3.55	
2721	kos to 8' hi, met boxes&encls, Wh yd punch, 1/2" pipe	EA	0.81	
2722	kos to 8' hi, met boxes&encls, Wh yd punch, 3/4" pipe	EA	0.94	
2723	kos to 8' hi, met boxes&encls, Wh yd punch, 1" pipe	EA	0.94	
2724	kos to 8' hi, met boxes&encls, Wh yd punch, 1-1/4" pipe	EA	0.94	
2725	kos to 8' hi, met boxes&encls, Wh yd punch, 1-1/2" pipe	EA	0.94	
2726	kos to 8' hi, met boxes&encls, Wh yd punch, 2" pipe	EA	1.11	
2727	kos to 8' hi, met boxes&encls, Wh yd punch, 2-1/2" pipe	EA	1.31	
2728	kos to 8' hi, met boxes&encls, Wh yd punch, 3" pipe	EA	1.54	
2729	kos to 8' hi, met boxes&encls, Wh yd punch, 3-1/2" pipe	EA	1.77	
2730	kos to 8' hi, met boxes&encls, Wh yd punch, 4" pipe	EA	1.97	

16022 0010 Conduit, in concrete slab, including couplings

16022 0099 Electrical metallic (EMT)

Note: 1. Labor Based On Unloading At Job Site, Measuring And Cutting, Layout, Fabrication And Assembly Within The Rebar And Form 2. Material Costs Are For The Called Item With Hold Down Straps And Stirrups. 3. Excludes Concrete

16022 0099 Tubing

0100	Conduit in conc slab, 1/2" dia, incl cplg, elec metallic tubing	LF	1.15	
0110	Conduit in conc slab, 3/4" dia, incl cplg, elec metallic tubing	LF	1.52	
0120	Conduit in conc slab, 1" dia, incl cplg, elec metallic tubing	LF	1.99	
0130	Conduit in conc slab, 1.25" dia, incl cplg, elec metallic tubing	LF	2.65	
0140	Conduit in conc slab, 1.5" dia, incl cplg, elec metallic tubing	LF	3.03	
0150	Conduit in conc slab, 2" dia, incl cplg, elec metallic tubing	LF	3.80	
0160	Conduit in conc slab, 2.5" dia, incl cplg, elec metallic tubing	LF	6.58	
0161	3" EMT w/Coupling Instl In Concrete Slab & Masonry	LF	10.53	
0162	4" EMT w/Coupling Instl In Concrete Slab & Masonry	LF	13.02	

16022 0199 Set screw connectors

0200	Conduit in conc slab, EMT, set screw connectors, 1/2" dia	EA	2.78	
0210	Conduit in conc slab, EMT, set screw connectors, 3/4" dia	EA	3.36	
0220	Conduit in conc slab, EMT, set screw connectors, 1" dia	EA	4.69	
0230	Conduit in conc slab, EMT, set screw connectors, 1.25" dia	EA	7.41	
0240	Conduit in conc slab, EMT, set screw connectors, 1.5" dia	EA	9.83	
0250	Conduit in conc slab, EMT, set screw connectors, 2" dia	EA	12.40	
0260	Conduit in conc slab, EMT, set screw connectors, 2.5" dia	EA	30.91	
0261	3" EMT Set Screw Connector Instl In Concrete Slab & Masonry	EA	25.99	
0262	4" EMT Set Screw Connector Instl In Concrete Slab & Masonry	EA	34.89	

16022 0299 Elbows

0300	Conduit in conc slab, EMT, elbows, 1" dia	EA	9.01	
0310	Conduit in conc slab, EMT, elbows, 1.25" dia	EA	11.83	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0320	Conduit in conc slab, EMT, elbows, 1.5" dia	EA	15.73	
0330	Conduit in conc slab, EMT, elbows, 2" dia	EA	20.27	
0340	Conduit in conc slab, EMT, elbows, 2.5" dia	EA	39.77	
0342	3" EMT 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	48.07	
0344	4" EMT 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	39.99	
16022 0350	EMT w/ Coupling Mtd Exposed On Flat Wall			
0351	1/2" EMT w/Coupling Mtd Exposed on Flat Wall	LF	1.77	0.53
0352	4" EMT 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	62.29	15.08
0353	1" EMT w/Coupling Mtd Exposed on Flat Wall	LF	2.99	0.93
0354	1-1/4" EMT w/Coupling Mtd Exposed on Flat Wall	LF	3.89	1.54
0355	1-1/2" EMT w/Coupling Mtd Exposed on Flat Wall	LF	4.34	1.53
0356	2" EMT w/Coupling Mtd Exposed on Flat Wall	LF	5.40	1.53
0357	2-1/2" EMT w/Coupling Mtd Exposed on Flat Wall	LF	7.12	1.50
0358	3" EMT w/Coupling Mtd Exposed on Flat Wall	LF	8.89	1.73
0359	3-1/2" EMT w/Coupling Mtd Exposed on Flat Wall	LF	11.13	2.00
16022 0360	EMT			
0361	1/2" EMT Set Screw Connectors Mtd Exposed on Flat Wall	EA	3.60	1.27
0362	3/4" EMT Set Screw Connectors Mtd Exposed on Flat Wall	EA	4.39	1.27
0363	1" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	5.80	1.23
0364	1-1/4" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	8.87	1.50
0365	1-1/2" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	11.09	1.50
0366	2" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	13.97	1.77
0367	2-1/2" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	29.35	1.90
0368	3" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	33.25	2.50
0369	3-1/2" EMT Set Screw Connector Mtd Exposed on Flat Wall	EA	38.81	2.77
16022 0370	EMT			
0371	1/2 EMT Compression Connector	EA	3.08	1.32
0372	3/4" EMT Compression Connector	EA	5.31	2.00
0373	1" EMT Compression Connector	EA	6.37	2.07
0374	1-1/4" EMT Compression Connector	EA	8.23	2.33
0375	1-1/2" EMT Compression Connector	EA	9.90	2.40
0376	2" EMT Compression Connector	EA	12.75	2.74
0377	2 1/2" EMT Compression Connector	EA	22.70	2.68
0378	3" EMT Compression Connector	EA	30.85	3.37
0379	3-1/2" EMT Compression Connector	EA	45.38	4.04
16022 0380	EMT			
0383	1"EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	11.51	3.10
0384	1-1/4"EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	14.35	3.67
0385	1-1/2"EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	18.87	4.60
0386	2"EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	25.66	4.57
0387	2-1/2"EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	43.96	5.30
0388	3" EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	42.09	6.17
0389	3-1/2" EMT 90 Deg Elbow Mtd Exposed on Flat Wall	EA	51.69	6.37
0390	4" EMT 90 Deg Elbow	EA	43.32	
16022 0499	Steel rigid galvanized (RGS)			
16022 0499	Tubing			
0500	Conduit in conc slab, 1/2" dia, incl cplg, steel, rigid	LF	2.42	
0520	Conduit in conc slab, 3/4" dia, incl cplg, steel, rigid	LF	2.90	
0540	Conduit in conc slab, 1" dia, incl cplg, steel, rigid	LF	4.04	
0560	Conduit in conc slab, 1.25" dia, incl cplg, steel, rigid	LF	5.00	
0580	Conduit in conc slab, 1.5" dia, incl cplg, steel, rigid	LF	5.80	
0600	Conduit in conc slab, 2" dia, incl cplg, steel, rigid	LF	7.16	
0601	RGS 2-1/2" Conduit w/Couplings Instl In Concrete Slab & Masonry	LF	11.36	
0602	RGS 3" Conduit w/Couplings Instl In Concrete Slab & Masonry	LF	13.39	
0603	RGS 4" Conduit w/Couplings Instl In Concrete Slab & Masonry	LF	18.09	
16022 0700	Rigid Galvanized Steel Conduit And Fittings In Precast Concrete Panel			
0702	RGS 1/2" Conduit w/Coupling Direct Burial In Precst Conc Pnl	LF	3.74	
0704	RGS 1/2" Elbow Direct Burial In Precst Conc Pnl	EA	22.37	
0706	RGS 1/2" Bushing Set w/Locknuts Direct Burial In Precst Conc Pnl	EA	15.57	
0708	RGS 3/4" Conduit w/Coupling Direct Burial In Precst Conc Pnl	LF	4.49	
0710	RGS 3/4" Elbow Direct Burial In Precst Conc Pnl	EA	27.78	
0712	RGS 3/4" Bushing Set w/Locknuts Direct Burial In Precst Conc Pnl	EA	17.83	
0714	RGS 1" Conduit w/Coupling Direct Burial In Precst Conc Pnl	LF	5.95	
0716	RGS 1" Elbow Direct Burial In Precst Conc Pnl	EA	35.05	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0718	RGS 1" Bushing Set w/Locknuts Direct Burial In Prcst Conc Pnl	EA	22.52	
16022 1009	Elbows			
1010	Conduit in conc slab, 1/2" dia, stl, rigid galvanized, elbow	EA	11.69	
1020	Conduit in conc slab, 3/4" dia, stl, rigid galvanized, elbow	EA	13.43	
1030	Conduit in conc slab, stl, rigid galvanized, elbow, 1" dia	EA	17.28	
1040	Conduit in conc slab, 1.25" dia, stl, rigid galvanized, elbow	EA	23.34	
1050	Conduit in conc slab, 1.5" dia, stl, rigid galvanized, elbow	EA	27.65	
1060	Conduit in conc slab, stl, rigid galvanized, elbow, 2" dia	EA	38.99	
1061	RGS 2-1/2" 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	55.89	
1062	RGS 3" 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	66.72	
1063	RGS 4" 90 Deg Elbow Instl In Concrete Slab & Masonry	EA	99.15	
16022 1209	Bushings & locknuts			
1210	Conduit in conc slab, bushings & locknuts, 1/2" dia, stl, rigid	EA	6.80	
1220	Conduit in conc slab, bushings & locknuts, 3/4" dia, stl, rigid	EA	8.69	
1230	Conduit in conc slab, bushings & locknuts, 1" dia, stl, rigid	EA	10.09	
1240	Conduit in conc slab, bushings & locknuts, 1.25" dia, stl, rigid	EA	12.27	
1250	Conduit in conc slab, bushings & locknuts, 1.5" dia, stl, rigid	EA	16.20	
1260	Conduit in conc slab, bushings & locknuts, 2" dia, stl, rigid	EA	20.02	
1270	Conduit in conc slab, bushings & locknuts, 2.5" dia, stl, rigid	EA	28.77	
1280	Conduit in conc slab, bushings & locknuts, 3" dia, stl, rigid	EA	31.70	
1290	Conduit in conc slab, bushings & locknuts, 3.5" dia, stl, rigid	EA	38.73	
1300	Conduit in conc slab, bushings & locknuts, 4" dia, stl, rigid	EA	47.09	
16022 1309	Expansion coupling & bonding jumper			
1310	Conduit in conc slab, 1/2" dia, RGS, exp coupling & bonding	EA	83.31	
1320	Conduit in conc slab, 3/4" dia, RGS, exp coupling & bonding	EA	91.57	
1330	Conduit in conc slab, 1" dia, RGS, exp coupling & bonding	EA	101.62	
1340	Conduit in conc slab, 1.25" dia, RGS, exp coupling & bonding	EA	134.76	
1350	Conduit in conc slab, 1.5" dia, RGS, exp coupling & bonding	EA	168.17	
1360	Conduit in conc slab, 2" dia, RGS, exp coupling & bonding	EA	220.39	
1361	RGS 2-1/2" EJ w/Bonding Jumper Instl In Concrete Slab & Masonry	EA	303.34	
1362	RGS 3" EJ w/Bonding Jumper Instl In Concrete Slab & Masonry	EA	373.66	
1363	RGS 4" Expan Jt w/Bonding Jumper Instl In Concrete Slab & Masonry	EA	608.36	
16022 2099	Steel intermediate conduit (IMC)			
16022 2099	Tubing			
2100	Conduit in conc slab, 1/2" dia, includes cplg, steel intmd (IMC)	LF	2.12	
2110	Conduit in conc slab, 3/4" dia, includes cplg, steel intmd (IMC)	LF	2.45	
2120	Conduit in conc slab, 1" dia, includes cplg, steel intmd (IMC)	LF	3.38	
2130	Conduit in conc slab, 1.25" dia, includes cplg, steel intmd (IMC)	LF	4.11	
2140	Conduit in conc slab, 1.5" dia, includes cplg, steel intmd (IMC)	LF	4.81	
2150	Conduit in conc slab, 2" dia, includes cplg, steel intmd (IMC)	LF	5.86	
2160	Conduit in conc slab, 2.5" dia, includes cplg, steel intmd (IMC)	LF	10.37	
2170	Conduit in conc slab, 3" dia, includes cplg, steel intmd (IMC)	LF	13.29	
2180	Conduit in conc slab, 3.5" dia, includes cplg, steel intmd (IMC)	LF	15.90	
2190	Conduit in conc slab, 4" dia, includes cplg, steel intmd (IMC)	LF	18.05	
16022 2219	Elbows			
2220	Conduit in conc slab, 1" dia, steel intmd conduit (IMC) elbows	EA	17.21	
2230	Conduit in conc slab, 1.25" dia, steel intmd conduit (IMC) elbow	EA	24.41	
2240	Conduit in conc slab, 1.5" dia, steel intmd conduit (IMC) elbows	EA	27.23	
2250	Conduit in conc slab, 2" dia, steel intmd conduit (IMC) elbows	EA	38.34	
2260	Conduit in conc slab, 2.5" dia, steel intmd conduit (IMC) elbows	EA	60.85	
2270	Conduit in conc slab, 3" dia, steel intmd conduit (IMC) elbows	EA	85.41	
2280	Conduit in conc slab, 3.5" dia, steel intmd conduit (IMC) elbows	EA	125.13	
2290	Conduit in conc slab, 4" dia, steel intmd conduit (IMC) elbows	EA	143.82	
16024 0009	Conduit fittings for RGS			
16024 0009	Standard			
16024 0010	Bushings & locknuts			
0011	Conduit fittings for RGS, 1/2" dia, std, bushings & locknuts	EA	7.44	2.45
0012	Conduit fittings for RGS, 3/4" dia, std, bushings & locknuts	EA	9.45	2.63
0014	Conduit fittings for RGS, std, bushings & locknuts, 1" dia	EA	11.07	3.94
0016	Conduit fittings for RGS, 1.25" dia, std, bushings & locknuts	EA	13.18	3.72
0018	Conduit fittings for RGS, 1.5" dia, std, bushings & locknuts	EA	17.78	4.08
0020	Conduit fittings for RGS, std, bushings & locknuts, 2" dia	EA	22.24	4.26
0022	Conduit fittings for RGS, 2.5" dia, std, bushings & locknuts	EA	30.33	13.54

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0024	Conduit fittings for RGS, std, bushings & locknuts, 3" dia	EA	33.52	13.08
0026	Conduit fittings for RGS, 3.5" dia, std, bushings & locknuts	EA	40.88	17.69
0028	Conduit fittings for RGS, std, bushings & locknuts, 4" dia	EA	50.24	17.62
0030	Conduit fittings for RGS, std, bushings & locknuts, 5" dia	EA	81.11	15.89
0032	Conduit fittings for RGS, std, bushings & locknuts, 6" dia	EA	129.24	16.42
16024 1759 Grounding bushing, insulated				
1760	Conduit ftg for RGS, 1/2" dia, std, grounding bushing, insul	EA	12.70	5.22
1770	Conduit ftg for RGS, 3/4" dia, std, grounding bushing, insul	EA	15.13	5.11
1780	Conduit ftg for RGS, 1" dia, std, grounding bushing, insul	EA	19.76	5.99
1782	1-1/4"Insul Grounding Bushings	EA	31.77	11.27
1784	1-1/2"Insul Grounding Bushings	EA	37.69	11.23
1850	Conduit ftg for RGS, 2" dia, std, grounding bushing, insul	EA	31.46	10.53
1852	2-1/2"Insul Grounding Bushings	EA	53.92	14.30
1900	Conduit ftg for RGS, 3" dia, std, grounding bushing, insul	EA	47.29	12.87
1902	RGS 3-1/2" Bshg Set w/Locknuts Mtd Exposed on Flat Wall	EA	51.10	11.34
1903	3-1/2"Insul Grounding Bushings	EA	78.29	16.40
1950	Conduit ftg for RGS, 4" dia, std, grounding bushing, insul	EA	66.83	17.27
1960	Conduit ftg for RGS, 5" dia, std, grounding bushing, insul	EA	117.66	18.33
1962	RGS 6" Bushing Set w/Locknuts Mtd Exposed on Flat Wall	EA	151.72	17.48
1963	6"Insulated Grounding Bushings	EA	194.77	22.22
16024 2279 LB, LR or LL fittings & covers				
2280	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 1/2" dia	EA	26.00	8.37
2290	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 3/4" dia	EA	31.79	7.87
2300	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 1" dia	EA	40.50	8.86
2330	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 1.25" dia	EA	57.58	9.33
2350	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 1.5" dia	EA	74.70	9.61
2370	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 2" dia	EA	102.46	9.26
2380	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 2.5" dia	EA	163.01	48.19
2390	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 3" dia	EA	200.15	46.35
2400	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 3.5" dia	EA	285.70	64.57
2410	Conduit ftg for RGS, std, LB, LR or LL ftg & cov, 4" dia	EA	335.46	63.19
2412	5"RGS Two Hub Conduit Body Service & Feeder Conduit	EA	852.47	80.30
2414	6"RGS Two Hub Conduit Body Service & Feeder Conduit	EA	1,274.96	95.57
16024 2419 T fittings, with cover				
2420	Conduit fittings for RGS, 1/2" dia, std, T fittings, w/cover	EA	33.64	11.42
2430	Conduit fittings for RGS, 3/4" dia, std, T fittings, w/cover	EA	37.72	10.74
2440	Conduit fittings for RGS, std, T fittings, w/cover, 1" dia	EA	49.24	13.40
2450	Conduit fittings for RGS, 1.25" dia, std, T fittings, w/cover	EA	72.15	13.72
2470	Conduit fittings for RGS, std, T fittings, w/cover, 1.5" dia	EA	88.69	13.16
2500	Conduit fittings for RGS, std, T fittings, w/cover, 2" dia	EA	121.12	13.72
2502	RGS 2-1/2" Type T 3 Hub Bodies Mtd Exposed on Flat Wall	EA	176.81	37.59
2504	RGS 3" Type T 3 Hub Bodies Mtd Exposed on Flat Wall	EA	210.34	40.06
2506	RGS 3-1/2" Type T 3 Hub Bodies Mtd Exposed on Flat Wall	EA	342.81	55.90
16024 2719 Nipples offset, plain				
2720	Conduit fittings for RGS, 1/2" dia, std, nipples offset, plain	EA	10.37	2.13
2730	Conduit fittings for RGS, 3/4" dia, std, nipples offset, plain	EA	12.26	2.16
2740	Conduit fittings for RGS, 1" dia, std, nipples offset, plain	EA	16.56	3.69
2742	Conduit fittings for RGS, 1.25" dia, std, nipples offset, plain	EA	24.79	3.86
2744	Conduit fittings for RGS, 1.5" dia, std, nipples offset, plain	EA	29.32	3.90
2746	Conduit fittings for RGS, 2" dia, std, nipples offset, plain	EA	36.33	3.72
2748	RGS 2-1/2" Off-set Nipple Mtd Exposed on Flat Wall	EA	65.64	14.51
2750	RGS 3" Off-set Nipple Mtd Exposed on Flat Wall	EA	92.54	18.75
2752	RGS 4" Off-set Nipple Mtd Exposed on Flat Wall	EA	143.23	27.22
16024 2799 Expansion coupling & bonding jumper				
2800	Conduit ftg for RGS, 2.5" dia, exp cplg (4" movement) & bonding	EA	336.88	33.65
2802	Conduit ftg for RGS, 3" dia, exp cplg (4" movement) & bonding	EA	402.66	33.58
2804	Conduit ftg for RGS, 3.5" dia, exp cplg (4" movement) & bonding	EA	540.57	45.18
2806	Conduit ftg for RGS, 4" dia, exp cplg (4" movement) & bonding	EA	632.57	45.57
2808	Conduit ftg for RGS, 5" dia, exp cplg (4" movement) & bonding	EA	952.63	51.03
2810	Conduit ftg for RGS, 6" dia, exp cplg (4" movement) & bonding	EA	1,716.18	57.34
16024 5279 Service entrance cap				
5280	Conduit fittings for RGS, 1/2" dia, std, service entrance cap	EA	23.83	8.55
5300	Conduit fittings for RGS, 3/4" dia, std, service entrance cap	EA	28.91	9.75
5320	Conduit fittings for RGS, 1" dia, std, service entrance cap	EA	37.55	12.38

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5322	1-1/4"Thrd Weatherhead	EA	37.44	10.70
5360	Conduit fittings for RGS, 1.5" dia, std, service entrance cap	EA	56.70	19.75
5380	Conduit fittings for RGS, 2" dia, std, service entrance cap	EA	85.74	19.58
5400	Conduit fittings for RGS, 2.5" dia, std, service entrance cap	EA	186.83	28.30
5420	Conduit fittings for RGS, 3" dia, std, service entrance cap	EA	246.00	52.56
5460	Conduit fittings for RGS, 4" dia, std, service entrance cap	EA	407.53	67.66
16024 6000 Explosion proof				
16024 6000 Flexible coupling				
6010	Conduit ftg for RGS, 1/2" dia, 4" L, explosion proof, flexible	EA	107.38	10.39
6050	Conduit ftg for RGS, 1/2" dia, 12" L, explosion proof, flexible	EA	142.82	10.39
6140	Conduit ftg for RGS, 3/4" dia, 4" L, explosion proof, flexible	EA	129.29	12.84
6180	Conduit ftg for RGS, 3/4" dia, 12" L, explosion proof, flexible	EA	178.03	12.84
16024 7309 LB conduit body				
7310	Conduit ftg for RGS, LB conduit body, 1/2" dia, explosion proof	EA	54.93	13.51
7320	Conduit ftg for RGS, LB conduit body, 3/4" dia, explosion proof	EA	68.63	14.43
16024 7349 Round box w/cover				
7350	Conduit ftg for RGS, 3 thd hub, 1/2", explosion proof, rnd box	EA	67.88	22.84
7351	Conduit ftg for RGS, 3 thd hub, 3/4", explosion proof, rnd box	EA	70.78	21.13
16024 7399 Unions				
7400	Conduit ftg for RGS, explosion proof, unions, 1/2" dia	EA	21.29	8.40
7420	Conduit ftg for RGS, explosion proof, unions, 3/4" dia	EA	27.50	8.94
7430	Conduit ftg for RGS, explosion proof, unions, 1" dia	EA	37.95	8.44
7440	Conduit ftg for RGS, explosion proof, unions, 1.25" dia	EA	50.27	12.48
7450	Conduit ftg for RGS, explosion proof, unions, 1.5" dia	EA	62.54	12.48
7460	Conduit ftg for RGS, explosion proof, unions, 2" dia	EA	77.29	11.81
7480	Conduit ftg for RGS, explosion proof, unions, 2.5" dia	EA	101.58	14.36
7490	Conduit ftg for RGS, explosion proof, unions, 3" dia	EA	131.64	14.22
7500	Conduit ftg for RGS, explosion proof, unions, 3.5" dia	EA	198.87	16.13
7510	Conduit ftg for RGS, explosion proof, unions, 4" dia	EA	224.16	23.72
16024 7819 Sealing fitting, vertical/horizontal				
7820	Conduit ftg for RGS,vert/horiz, 1/2", explosion proof, sealing	EA	35.38	17.80
7830	Conduit ftg for RGS,vert/horiz, 3/4", explosion proof, sealing	EA	42.10	20.14
7840	Conduit ftg for RGS,vert/horiz, 1", explosion proof, sealing ftg	EA	53.24	26.06
7850	Conduit ftg for RGS,vert/horiz, 1.25", explosion proof, sealing	EA	61.97	31.81
7860	Conduit ftg for RGS,vert/horiz, 1.5", explosion proof, sealing	EA	79.82	32.52
7870	Conduit ftg for RGS,vert/horiz, 2", explosion proof, sealing ftg	EA	98.92	37.45
7880	Conduit ftg for RGS,vert/horiz, 2.5", explosion proof, sealing	EA	121.89	41.49
7890	Conduit ftg for RGS,vert/horiz, 3", explosion proof, sealing ftg	EA	143.37	43.65
7900	Conduit ftg for RGS,vert/horiz, 3.5", explosion proof, sealing	EA	274.11	61.91
7910	Conduit ftg for RGS,vert/horiz, 4", explosion proof, sealing ftg	EA	397.72	69.29
16026 0010 Flexible metallic conduit and fittings				
16026 0049 Steel				
0050	Flexible metallic conduit, steel, 3/8" dia	LF	1.69	0.50
0100	Flexible metallic conduit, steel, 1/2" dia	LF	1.79	0.50
0102	3/4" Flex Metallic Conduit	LF	2.23	0.61
0103	1" Flex Metallic Conduit	LF	3.74	1.00
0104	1-1/4" Flex Metallic Conduit	LF	5.04	1.35
0105	1-1/2" Flex Metallic Conduit	LF	7.16	2.00
0106	2" Flex Metallic Conduit	LF	8.97	2.50
0107	2-1/2" Flex Metallic Conduit	LF	11.83	3.39
0108	3" Flex Metallic Conduit	LF	14.16	3.99
0109	3-1/2" Flex Metallic Conduit	LF	19.12	4.99
0110	4" Flex Metallic Conduit	LF	25.78	6.60
0420	Flexible metallic conduit, 3/8" dia, steel, connectors, plain	EA	3.77	1.14
0430	Flexible metallic conduit, 1/2" dia, steel, connectors, plain	EA	5.03	1.42
0431	3/4" Flex Connectors Plain	EA	5.38	1.57
0432	1" Flex Connectors Plain	EA	8.26	2.28
0441	1" Flex Connector Insulated	EA	10.11	2.85
0442	1-1/4" Flex Connector Insulated	EA	12.00	2.85
0443	1-1/2" Flex Connector Insulated	EA	16.12	3.57
0444	2" Flex Connector Insulated	EA	23.41	4.99
0445	2-1/2" Flex Connector Insulated	EA	35.88	5.70
0446	3" Flex Connector Insulated	EA	44.79	6.70

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0447	3-1/2" Flex Connector Insulated	EA	105.66	8.84
0448	4" Flex Connector Insulated	EA	134.35	11.41
16026 1449 Sealrite assembly				
16026 1449 Conduit 3' w connectors				
1450	Flexible metallic conduit, conduit 3' w/conn,1/2" dia,	EA	25.50	6.24
1452	Flexible metallic conduit, conduit 3' w/conn,3/4" dia,	EA	36.21	8.90
1454	Flexible metallic conduit, conduit 3' w/conn,1" dia,	EA	51.68	11.35
1456	Flexible metallic conduit, conduit 3' w/conn,1.25"dia,	EA	79.94	15.60
1458	Flexible metallic conduit, conduit 3' w/conn,1.5"dia,	EA	96.22	18.62
1460	Flexible metallic conduit, conduit 3' w/conn,2" dia,	EA	143.16	24.97
1462	Flexible metallic conduit, conduit 3' w/conn,2.5"dia,	EA	496.39	30.42
1464	Flexible metallic conduit, conduit 3' w/conn,3" dia,	EA	573.73	35.71
1466	Flexible metallic conduit, conduit 3' w/conn,4" dia,	EA	743.14	56.74
16026 1489 Connectors, plain				
1490	Flexible metallic conduit, 3/8" dia, sealrite, connectors, plain	EA	6.70	1.77
1500	Flexible metallic conduit, 1/2" dia, sealrite, connectors, plain	EA	6.78	1.77
1700	Flexible metallic conduit, 3/4" dia, sealrite, connectors, plain	EA	9.62	2.48
1900	Flexible metallic conduit, 1" dia, sealrite, connectors, plain	EA	13.83	3.12
16026 2300 Flex				
2310	1/2" Flex Connector 90 Degree	EA	6.36	1.75
2320	3/4" Flex Connector 90 Degree	EA	8.36	2.18
2330	1" Flex Connector 90 Degree	EA	11.98	2.71
16026 2400 Flex				
2410	1" Flex Insul Connector 90 Degree	EA	12.26	2.71
2420	1-1/4" Flex Insul Connector 90 Degree	EA	19.50	3.67
2430	1-1/2" Flex Insul Connector 90 Degree	EA	30.12	4.74
2440	2" Flex Insul Connector 90 Degree	EA	38.75	5.96
2450	2-1/2" Flex Insul Connector 90 Degree	EA	79.77	6.78
2460	3" Flex Insul Connector 90 Degree	EA	114.62	7.74
2470	3-1/2" Flex Insul Connector 90 Degree	EA	300.20	7.74
2480	4" Flex Insul Connector 90 Degree	EA	448.60	13.55
16026 2500 Liquid Tight Flexible Conduit				
16026 2510 Liquid Tight Flexible Conduit And Fittings				
2512	1/2" Liquid Tight Flex Conduit	LF	3.97	0.73
2514	1/2" Straight Connector	EA	6.44	1.17
2516	1/2" Angle Connector	EA	9.04	1.40
2518	3/4" Liquid Tight Flex Conduit	LF	5.17	0.90
2520	3/4" Straight Connector	EA	8.47	1.40
2522	3/4" Angle Connector	EA	13.12	1.87
2524	1" Liquid Tight Flex Conduit	LF	8.23	1.50
2526	1" Straight Connector	EA	12.19	1.87
2528	1" Angle Connector	EA	22.23	2.33
2530	1-1/4" Liquid Tight Flex Conduit	LF	11.52	2.10
2532	1-1/4" Straight Connector	EA	19.62	2.33
2534	1-1/4" Angle Connector	EA	33.54	2.90
2536	1-1/2" Liquid Tight Flex Conduit	LF	14.23	2.53
2538	1-1/2" Straight Connector	EA	26.58	2.80
2540	1-1/2" Angle Connector	EA	41.68	3.50
2542	2" Liquid Tight Flex Conduit	LF	17.65	3.13
2544	2" Straight Connector	EA	44.57	3.50
2546	2" Angle Connector	EA	57.46	3.73
2548	2-1/2" Liquid Tight Flex Conduit	LF	29.50	4.20
2550	2-1/2" Straight Connector	EA	197.41	5.60
2552	2-1/2" Angle Connector	EA	250.85	11.21
2554	3" Liquid Tight Flex Conduit	LF	40.69	6.00
2556	3" Straight Connector	EA	221.47	7.47
2558	3" Angle Connector	EA	301.84	14.94
2560	4" Liquid Tight Flex Conduit	LF	55.55	7.51
2562	4" Straight Connector	EA	265.67	9.34
2564	4" Angle Connector	EA	408.77	19.61
16029 0010 Wrenold raceway Wireway				

Note: 1. Exposed On Flat Wall Surface 2. Based on 100 Ft Run, With Up To 14 Ft Mounting Height 3. Labor Units Include Material Unloading, Unpacking, At Job Site, Layout Of Job, Assembly And Installation. 4. Material Costs Are For Called Item Only. 5. For Fasteners See CSI 16110-2000. For Straps See CSI 16111-1200.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16029 0090 Surface, metal, straight section				
0100	Wiremld raceway, #500, surface, metal, straight section	LF	3.53	1.24
0110	Wiremld raceway, #700, surface, metal, straight section	LF	3.62	1.10
0600	Wiremld raceway, #2000, base & cover, blank, surface, metal,	LF	4.57	1.38
0610	Wiremld raceway, #2000, receptacle, 6" OC, surface, metal,	LF	14.99	1.56
0620	Wiremld raceway, #2000, receptacle, 12" OC, surface, metal,	LF	11.80	2.70
0670	Wiremld raceway, #2200, base & cover, blank, surface, metal,	LF	5.87	1.46
0800	Wiremld raceway, #3000, base & cover, blank, surface, metal,	LF	6.45	1.42
16029 1200 Assembled Wireway, W Receptacle @ 6" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremold or Equal.				
1201	Wiremld 200, 6" Recp. O.C.	LF	27.61	10.20
1202	Wiremld 500, 6" Recp. O.C.	LF	27.65	10.20
1203	Wiremld 700, 6" Recp. O.C.	LF	27.71	10.20
1204	Wiremld 1500, 6" Recp. O.C.	LF	28.34	10.38
1205	Wiremld 2000, 6" Recp. O.C.	LF	28.75	10.59
1206	Wiremld 2100, 6" Recp. O.C.	LF	28.90	10.59
1207	Wiremld 2200, 6" Recp. O.C.	LF	28.82	10.38
1208	Wiremld 2600, 6" Recp. O.C.	LF	28.69	10.38
1209	Wiremld 3000, 6" Recp. O.C.	LF	29.38	10.59
1211	Wiremld 4000, 6" Recp. O.C.	LF	54.62	19.01
1212	Wiremld 6000, 6" Recp. O.C.	LF	57.24	19.22
16029 1300 Assembled Wireway, W Receptacle @ 12" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremold or Equal.				
1301	Wiremld 200, 12" Recp. O.C.	LF	16.27	6.28
1302	Wiremld 500, 12" Recp. O.C.	LF	16.32	6.28
1303	Wiremld 700, 12" Recp. O.C.	LF	16.38	6.28
1304	Wiremld 1500, 12" Recp. O.C.	LF	17.00	6.28
1305	Wiremld 2000, 12" Recp. O.C.	LF	17.40	6.67
1306	Wiremld 2100, 12" Recp. O.C.	LF	17.55	6.67
1307	Wiremld 2200, 12" Recp. O.C.	LF	17.48	6.28
1308	Wiremld 2600, 12" Recp. O.C.	LF	17.35	6.28
1309	Wiremld 3000, 12" Recp. O.C.	LF	18.04	6.67
1311	Wiremld 4000, 12" Recp. O.C.	LF	31.94	11.20
1312	Wiremld 6000, 12" Recp. O.C.	LF	34.56	11.37
16029 1400 Assembled Wireway, W Receptacle @ 18" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremold or Equal.				
1401	Wiremld 200, 18" Recp. O.C.	LF	12.37	4.89
1402	Wiremld 500, 18" Recp. O.C.	LF	12.43	4.89
1403	Wiremld 700, 18" Recp. O.C.	LF	12.48	4.89
1404	Wiremld 1500, 18" Recp. O.C.	LF	13.09	5.10
1405	Wiremld 2000, 18" Recp. O.C.	LF	13.50	5.28
1406	Wiremld 2100, 18" Recp. O.C.	LF	13.67	5.28
1407	Wiremld 2200, 18" Recp. O.C.	LF	13.93	5.28
1408	Wiremld 2600, 18" Recp. O.C.	LF	13.80	5.28
1409	Wiremld 3000, 18" Recp. O.C.	LF	14.14	5.28
1411	Wiremld 4000, 18" Recp. O.C.	LF	24.14	8.41
1412	Wiremld 6000, 18" Recp. O.C.	LF	26.75	8.63
16029 1500 Assembled Wireway, W Receptacle @ 24" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremold or Equal.				
1501	Wiremld 200, 24" Recp. O.C.	LF	10.60	4.32
1502	Wiremld 500, 24" Recp. O.C.	LF	10.65	4.32
1503	Wiremld 700, 24" Recp. O.C.	LF	10.71	4.32
1504	Wiremld 1500, 24" Recp. O.C.	LF	11.33	4.49
1505	Wiremld 2000, 24" Recp. O.C.	LF	11.73	4.71
1506	Wiremld 2100, 24" Recp. O.C.	LF	11.89	4.71
1507	Wiremld 2200, 24" Recp. O.C.	LF	11.81	4.49
1508	Wiremld 2600, 24" Recp. O.C.	LF	11.85	4.49
1509	Wiremld 3000, 24" Recp. O.C.	LF	12.37	4.71
1511	Wiremld 4000, 24" Recp. O.C.	LF	20.60	7.24
1512	Wiremld 6000, 24" Recp. O.C.	LF	23.22	7.45
16029 1600 Assembled Wireway, W Receptacle @ 30" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremold or Equal.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1601	Wiremld 200, 30" Recp. O.C.	LF	9.46	3.92
1602	Wiremld 500, 30" Recp. O.C.	LF	9.51	3.92
1603	Wiremld 700, 30" Recp. O.C.	LF	9.57	3.92
1604	Wiremld 1500, 30" Recp. O.C.	LF	10.20	4.14
1605	Wiremld 2000, 30" Recp. O.C.	LF	10.60	4.32
1606	Wiremld 2100, 30" Recp. O.C.	LF	10.76	4.32
1607	Wiremld 2200, 30" Recp. O.C.	LF	10.68	4.14
1608	Wiremld 2600, 30" Recp. O.C.	LF	10.54	4.14
1609	Wiremld 3000, 30" Recp. O.C.	LF	11.24	4.32
1611	Wiremld 4000, 30" Recp. O.C.	LF	18.33	6.49
1612	Wiremld 6000, 30" Recp. O.C.	LF	20.95	6.67
16029 1700 Assembled Wireway, W Receptacle @ 36" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremld or Equal.				
1701	Wiremld 200, 36" Recp. O.C.	LF	8.84	3.75
1702	Wiremld 500, 36" Recp. O.C.	LF	8.88	3.75
1703	Wiremld 700, 36" Recp. O.C.	LF	8.93	3.75
1704	Wiremld 1500, 36" Recp. O.C.	LF	9.56	3.92
1705	Wiremld 2000, 36" Recp. O.C.	LF	9.97	4.14
1706	Wiremld 2100, 36" Recp. O.C.	LF	10.12	4.14
1707	Wiremld 2200, 36" Recp. O.C.	LF	10.04	3.92
1708	Wiremld 2600, 36" Recp. O.C.	LF	9.91	3.92
1709	Wiremld 3000, 36" Recp. O.C.	LF	10.60	4.14
1711	Wiremld 4000, 36" Recp. O.C.	LF	16.70	5.89
1712	Wiremld 6000, 36" Recp. O.C.	LF	19.31	6.06
16029 1800 Assembled Wireway, W Receptacle @ 42" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremld or Equal.				
1801	Wiremld 200, 42" Recp. O.C.	LF	8.27	3.53
1802	Wiremld 500, 42" Recp. O.C.	LF	8.32	3.53
1803	Wiremld 700, 42" Recp. O.C.	LF	8.38	3.53
1804	Wiremld 1500, 42" Recp. O.C.	LF	9.00	3.75
1805	Wiremld 2000, 42" Recp. O.C.	LF	9.40	3.92
1806	Wiremld 2100, 42" Recp. O.C.	LF	9.56	3.92
1807	Wiremld 2200, 42" Recp. O.C.	LF	9.49	3.75
1808	Wiremld 2600, 42" Recp. O.C.	LF	9.35	3.75
1809	Wiremld 3000, 42" Recp. O.C.	LF	10.04	3.92
1811	Wiremld 4000, 42" Recp. O.C.	LF	15.58	5.49
1812	Wiremld 6000, 42" Recp. O.C.	LF	18.20	5.67
16029 1900 Assembled Wireway, W Receptacle @ 48" O.C.				
Note: Complete W Base, Cover, Outlet & Wire. Wiremld or Equal.				
1901	Wiremld 200, 48" Recp. O.C.	LF	7.77	3.35
1902	Wiremld 500, 48" Recp. O.C.	LF	7.82	3.35
1903	Wiremld 700, 48" Recp. O.C.	LF	7.86	3.35
1904	Wiremld 1500, 48" Recp. O.C.	LF	8.49	3.53
1905	Wiremld 2000, 48" Recp. O.C.	LF	8.91	3.75
1906	Wiremld 2100, 48" Recp. O.C.	LF	9.06	3.75
1907	Wiremld 2200, 48" Recp. O.C.	LF	8.98	3.53
1908	Wiremld 2600, 48" Recp. O.C.	LF	8.84	3.53
1909	Wiremld 3000, 48" Recp. O.C.	LF	9.53	3.75
1911	Wiremld 4000, 48" Recp. O.C.	LF	14.93	5.28
1912	Wiremld 6000, 48" Recp. O.C.	LF	17.54	5.49
16029 2399 Fittings, metal				
16029 2399 Elbows				
2400	Wiremld raceway, fittings, elbow, #500	EA	8.30	2.80
2410	Wiremld raceway, fittings, elbow, #700	EA	8.50	2.09
2415	Wiremld raceway, fittings, elbow, #2000	EA	9.91	3.12
2420	Wiremld raceway, fittings, elbow, #2200	EA	27.41	6.53
2430	Wiremld raceway, fittings, elbow, #3000	EA	22.04	5.07
16029 2879 Tee				
2880	Wiremld raceway, fittings, tee, #500	EA	9.07	2.27
2890	Wiremld raceway, fittings, tee, #700	EA	11.19	2.41
2900	Wiremld raceway, fittings, tee, #2000	EA	17.96	4.08
2910	Wiremld raceway, fittings, tee, #2200	EA	16.76	4.29
2920	Wiremld raceway, fittings, tee, #2000	EA	31.74	5.96

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16029 3009 Switch box, two gang				
3010	Wiremold raceway, fittings, switch box, two gang, #500	EA	44.03	12.98
16029 3014 Adapter				
3015	Wiremold raceway, fittings, adapter, #500	EA	12.18	2.98
3020	Wiremold raceway, fittings, adapter, #700	EA	13.71	3.01
3030	Wiremold raceway, fittings, adapter, #2000	EA	17.12	4.22
3040	Wiremold raceway, fittings, adapter, #2200	EA	19.81	4.57
3050	Wiremold raceway, fittings, adapter, #3000	EA	24.39	7.87
16029 3100 Wre Clips				
Note: For Conduit Installation Above Suspended Ceilings Up To 14' High.				
3102	1/2" Conduit Wire Clips	EA	1.87	
3104	3/4" Conduit Wire Clips	EA	1.96	
3106	1" Conduit Wire Clips	EA	2.05	
3108	Strap For Wiremold 1500	EA	1.86	
3110	Wire Clip For WireMold 1500	EA	1.67	
3112	Wire Clip For PlugMold 2000	EA	1.91	
3114	Wire Clip For Wiremold 2100	EA	2.08	
3117	Wire & Clip For Plugmold 2200	EA	2.46	
3118	Wire Clip For Wiremold 2600	EA	2.39	
3120	Wire Clip For Wiremold 3000	EA	3.07	
3122	Wire Clip For Plugmold 4000	EA	3.87	
3124	Wire Clip For Multi-outlet 6000	EA	4.28	
16029 3200 Acoustical T-Bar Clips				
Note: For Conduit Installation Above Suspended Ceilings Up To 14' Height.				
3202	1/2" Conduit Acoustical T-Bar Clips	EA	1.87	
3204	3/4" Conduit Acoustical T-Bar Clips	EA	1.96	
3206	1" Conduit Acoustical T-Bar Clips	EA	2.05	
16029 3400 Wiremold Devices				
3402	SP Switch W Bow	EA	25.62	
3404	Utility Box	EA	22.47	
3406	Duplex Grounding Receptacle With Box	EA	27.36	
3408	1 Gang Deep Switch Box	EA	23.02	
3410	2 Gang Deep Switch Box	EA	28.98	
3412	3 Gang Deep Switch Box	EA	44.67	
3414	4 Gang Deep Switch Box	EA	51.59	
3416	5 Gang Deep Switch Box	EA	71.64	
3418	6 Gang Deep Switch Box	EA	75.94	
3420	Blank Extension Box	EA	18.97	
3422	Combination Connector	EA	9.70	
3424	Adjustable Offset Connector	EA	14.19	
3426	Armored Cable Connector	EA	9.51	
16029 3500 Wiremold Raceway Installation				
Note: Including Layout, Cutting Lengths. Demolition Includes Fittings, Wire And Cable.				
3502	G4000 Base And Cover	LF	7.93	
3504	G4000 D Divider	LF	3.15	
3506	G4010 D Entrance End Fitting	EA	44.22	
3508	G4010 B Blank End Fitting	EA	10.30	
3510	G4046 All Types Of Receptacles And Telephone Covers	EA	10.72	
3512	G4018 External Elbow	EA	50.80	
3514	G4001 Coupling & G4017C Coupling	EA	7.89	
3516	G4001 D Divider Clip & Coupling	EA	7.24	
3518	G4086 A Panel Connector	EA	28.30	
3520	G4074 Take Off Connector A, D Or T	EA	46.25	
3522	G4017, G4017N, Elbow, Internal	EA	50.80	
3524	G4007 C-1 (2) Device Cover	EA	10.72	
3526	G4015 D	EA	33.97	
3528	G6008 A hanger Clamp Also For G4000	EA	15.29	
3530	G6000 Base And Cover	EA	11.49	
3532	G6000 D Divider	EA	4.32	
3534	G6001 Coupling	EA	6.30	
3536	G6007 C1 And C2 Device Bracket	EA	10.64	
3538	G6010 Blank End Fitting	EA	11.16	
3540	G6017 TX Combination Elbows	EA	36.47	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3542	G6086 Panel Connector	EA	24.67	
3544	G6011 TX, 6012 TX Elbows	EA	36.47	
3546	G6014 A, Connector Fitting	EA	44.83	
3548	G6074 All 6074 Series Take-off Connector	EA	52.70	
3550	G500 Raceway Includes Munting Layout, Cutting And Fittings	LF	3.25	
3552	Box, 1 Gang G500	EA	25.29	
16029 3600 Under Carpet Power System				
Note: Includes laying Out, Floor Prep, taping, testing, Drill Floor, Folds				
3602	Cable Flat 3 Conductor #12 With Attached Bottom Shield	LF	3.66	
3604	Top Shield, Steel	LF	3.87	
3606	Splice, 3-Conductor	EA	16.43	
3608	Splice Top Shield For 3 Conductor	EA	3.56	
3610	Tap 3-Conductor	EA	20.94	
3612	Insulating Patch, Splice Tap & End	EA	38.13	
3614	Receptacles, Direct Connected Single, Includes Box	EA	75.58	
3616	Receptacles, Direct Connected Dual, Includes Box	EA	127.25	
3618	Box, Floor Munted With Cover	EA	78.25	
3620	5-Conductor #12 With Attached Bottom Shield	LF	6.06	
3622	Shield, Top, Steel For 5 Conductor	LF	6.01	
3624	Splice, 5 Conductor	EA	16.73	
3626	Insulating Patch Splice Tap & End	EA	34.71	
3628	Transition Block Assembly 5 Conductor	EA	34.71	
3630	Box, Wall, Flush With Cover	EA	50.12	
3632	Telephone Transition Fitting Wall Box	EA	30.48	
3634	Telephone Fitting W Duplex Jack And Cover RJ-45	EA	42.20	
3636	Transition Block Assembly 3-Conductor	EA	25.30	
3638	Telephone Mniture W Duplex RJ-45	EA	18.68	
3640	Telephone 4-Pair Level 5 Under Carpet Wire	LF	1.03	
3642	BNC Coax Connector Plug	EA	11.81	
3644	TNC Connector Coax Plug	EA	11.81	
3646	Flat RG A/U 59, 75 Ohm, RG A/U 62, 93 Ohm, RG A/U 58, 50 Ohm	CLF	64.09	
16029 4109 Tele-power pole				
16029 4109 Aluminum w/ 2 receptacles				
Note: Prewired 2 Duplex Receptacles With Space For Telephone Wire				
4110	Wiremld raceway, tel-power pole, al, w/2 rcpt, 10'	EA	199.65	14.89
4120	Wiremld raceway, tel-power pole, al, w/2 rcpt, 12'	EA	228.10	15.25
4130	Wiremld raceway, tel-power pole, al, w/2 rcpt, 15'	EA	269.70	16.74
16029 4139 Steel, w/ 2 receptacles				
4140	Wiremld raceway, tel-power pole, stl, w/2 rcpt, 10'	EA	153.59	13.47
4150	Wiremld raceway, 1 phone fitting, 10', tel-power pole,	EA	200.27	17.13
16029 4159 Aluminum 4 outlets				
4160	Wiremld raceway, tel-power pole, al, 4 outlet, 10'	EA	238.73	19.33
16030 Conduit Support				
16032 0010 Hangers				
Note: Prices Are Material Cost Only. For Labor Costs, See Fastening Devices Division 5 And Use Proper Device In Conjunction W Hanger Or Support Selected				
16032 0050 Strap w/ 2 holes, rigid steel conduit				
0101	Hanger, rigid stl conduit, 1/2" dia, matl only, stl strap w/2	EA	0.15	
0151	Hanger, rigid stl conduit, 3/4" dia, matl only, stl strap w/2	EA	0.19	
0201	Hanger, rigid stl conduit, 1" dia, matl only, stl strap w/2	EA	0.31	
0301	Hanger, rigid stl conduit, 1.25" dia, matl only, stl strap w/2	EA	0.49	
0351	Hanger, rigid stl conduit, 1.5" dia, matl only, stl strap w/2	EA	0.57	
0401	Hanger, rigid stl conduit, 2" dia, matl only, stl strap w/2	EA	0.70	
0402	2-1/2" 2 Hole Stl Conduit Strap Mat'l Only	EA	2.10	
0403	3" 2 Hole Stl Conduit Strap Mat'l Only	EA	2.34	
0404	4" 2 Hole Stl Conduit Strap Mat'l Only	EA	3.48	
16032 1100 One Hole Steel Conduit Straps				
1111	One Hole Steel Pipe Strap, 1/2"	EA	0.94	
1112	One Hole Steel Pipe Strap, 3/4"	EA	0.99	
1113	One Hole Steel Pipe Strap, 1"	EA	1.26	
1114	One Hole Steel Pipe Strap, 1-1/4 "	EA	1.47	
1115	One Hole Steel Pipe Strap, 1-1/2 "	EA	1.61	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1116	One Hole Steel Pipe Strap, 2"	EA	2.42	
1117	One Hole Steel Pipe Strap, 2-1/2 "	EA	3.26	
1118	One Hole Steel Pipe Strap, 3"	EA	3.54	
1119	One Hole Steel Pipe Strap, 3-1/2 "	EA	4.93	
1121	One Hole Steel Pipe Strap, 4"	EA	6.03	
16032 1200	One Hole Iron Conduit Straps			
1211	One Hole Iron Pipe Strap, 1/2"	EA	1.43	
1212	One Hole Iron Pipe Strap, 3/4"	EA	1.57	
1213	One Hole Iron Pipe Strap, 1"	EA	1.80	
1214	One Hole Iron Pipe Strap, 1-1/4"	EA	2.38	
1215	One Hole Iron Pipe Strap, 1-1/2"	EA	2.61	
1216	One Hole Iron Pipe Strap, 2"	EA	4.06	
1217	One Hole Iron Pipe Strap, 2-1/2"	EA	7.20	
1218	One Hole Iron Pipe Strap, 3"	EA	9.80	
1219	One Hole Iron Pipe Strap, 3-1/2"	EA	13.61	
1222	One Hole Iron Pipe Strap, 4"	EA	28.90	
1223	One Hole Iron Pipe Strap, 5"	EA	99.25	
16032 1400	Conduit Spacers			
1411	Conduit Spacers, 1/2"	EA	2.02	
1412	Conduit Spacers, 3/4"	EA	2.11	
1413	Conduit Spacers, 1"	EA	2.44	
1414	Conduit Spacers, 1-1/4"	EA	2.94	
1415	Conduit Spacers, 1-1/2"	EA	3.39	
1416	Conduit Spacers, 2"	EA	4.61	
1417	Conduit Spacers, 2-1/2"	EA	7.10	
1418	Conduit Spacers, 3"	EA	10.38	
1419	Conduit Spacers, 3-1/2"	EA	13.50	
1421	Conduit Spacers, 4"	EA	28.40	
1422	Conduit Spacers, 5"	EA	50.44	
16032 1859	Bolt & 24 " rod, clamp			
1860	Conduit hangers, w/ bolt & 24" rod, clamp, 1/2", matl only	EA	6.47	
1862	Conduit hangers, w/ bolt & 24" rod, clamp, 3/4", matl only	EA	6.50	
1864	Conduit hangers, w/ bolt & 24" rod, clamp, 1", matl only	EA	6.75	
1866	Conduit hangers, w/ bolt & 24" rod, clamp, 1.25", matl only	EA	6.98	
1868	Conduit hangers, w/ bolt & 24" rod, clamp, 1.5", matl only	EA	7.16	
1870	Conduit hangers, w/ bolt & 24" rod, clamp, 2", matl only	EA	7.29	
1872	Conduit hangers, w/ bolt & 24" rod, clamp, 2.5", matl only	EA	7.46	
1874	Conduit hangers, w/ bolt & 24" rod, clamp, 3", matl only	EA	7.63	
1876	Conduit hangers, w/ bolt & 24" rod, clamp 4", matl only	EA	7.84	
16032 3100	Independent T-Bar Support Clips			
3111	Independent T-Bar Ids, 5/8"	EA	1.53	
3112	Independent T-Bar Ids1.5,	EA	1.65	
3114	T-Bar Hanger 512	EA	4.93	
16032 3500	Switch & Outlet Box Type Supports			
3511	Switch & Outlet Box Mfs, 1/4 - 3 /4"	EA	2.57	
3512	Switch & Outlet Box Msb-500, 1/2 "	EA	2.29	
3513	Switch & Outlet Box Msb-S, 1/4 - 3/4"	EA	2.57	
3514	Switch & Outlet Box Msc	EA	1.99	
3515	Switch & Outlet Box Msf	EA	1.90	
3516	Switch & Outlet Box Msl,	EA	1.94	
16032 3900	Lighting Fix Hgr			
3911	Lighting Fix Hgr 515, Retainer C lip	EA	3.07	
3912	Lighting Fix Hgr 517-A, High	EA	7.26	
3913	Lighting Fix Hgr 520,	EA	9.51	
16032 4109	Channel, steel			
Note: Metal Framing Channel Mounting At 12 Foot Ceiling Average Layout No Support Devices Included				
4110	Hanger, stl channel, 1-5/8" x 13/16", 16 ga	LF	6.05	1.74
4120	Hanger, stl channel, 1-5/8" x 1-5/8", 14 ga	LF	7.30	1.63
4130	Hanger, stl channel, 1-5/8" x 7/8", 12 ga	LF	6.77	1.52
4140	Hanger, stl channel, 1-5/8" x 1-3/8", 12 ga	LF	8.43	1.63
4150	Hanger, stl channel, 1-5/8" x 1-5/8", 12 ga	LF	9.34	1.77
16032 4159	Flat plate fitting			
4160	Hanger, stl channel, 3.5", 2 hole, matl only, flat plate	EA	1.45	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4162	Hanger, stl channel, 5-3/8", 3 hole, matl only, flat plate	EA	1.96	
4163	4 Hole-7 1/4" Long Flat Plate Metal Framing Channel Fittings	EA	2.30	
16032 4165	Angle fitting 90_			
4166	Hanger, stl channel, 1-7/8" x 2", 2 hole, matl only, angle ftg	EA	1.46	
4168	Hanger, stl channel, 1-5/8" x 2.25", 2 hole, matl only, angle	EA	1.52	
4170	Hanger, stl channel, 1-7/16" x 4-1/8", 3 hole, matl only, angle	EA	2.08	
4172	Hanger, stl channel, 1-7/8" x 3-7/8", 3 hole, matl only, angle	EA	2.05	
16032 4173	U fitting			
4174	Hanger, stl channel, 1-5/8" x 7.25", 5 hole, matl only, U	EA	3.30	
4176	Hanger, stl channel, 1-5/8" x 7.25", 4 hole, matl only, U	EA	5.91	
16032 4177	Z fitting			
4178	Hanger, stl channel, Z fitting, 3 hole, 1-5/8", matl only	EA	2.18	
16032 4199	Spring nuts, long			
4200	Hanger, stl channel, spring nuts, long, 1/4"	EA	3.32	
4250	Hanger, stl channel, spring nuts, long, 3/8"	EA	3.93	
4300	Hanger, stl channel, spring nuts, long, 1/2"	EA	4.64	
4310	Hanger, stl channel, spring nuts, long, 5/8"	EA	5.64	
4312	1/2" 13 Thread Spring Nuts Metal Framing Channel Fittings	EA	4.30	
4314	5/8" 11 Thread Spring Nuts Metal Framing Channel Fittings	EA	5.10	
16032 4399	Anchors (Drilling Included)			
4400	1/4" - 3/8" Self Drilling Expansion Anchors	EA	6.98	
4410	1/4" - 3/8" Non Drilling Expansion Anchor	EA	6.40	
4420	1/4" - 3/8" Multi-Set Anchor	EA	5.82	
4430	Toggle Bolt 1/4" - 3/8"	EA	1.45	
4440	Hollow Wall Anchors	EA	1.74	
4450	#6 & #8 Screw Anchors	EA	0.99	
4460	#10 & #12 Screw Anchors	EA	1.16	
4470	Wedge Anchors 1/4"	EA	2.15	
4480	Wedge Anchors 3/8"	EA	3.78	
16032 4499	Closure strip			
4500	Hanger, stl channel, closure strip	LF	3.06	
16032 4549	End cap			
4550	Hanger, stl channel, end cap	EA	5.52	
16032 5100	Rigid Steel Cnd Clamps			
5111	Rigid Steel Cnd Clamps, P1111-1/ 2"	EA	3.62	
5112	Rigid Steel Cnd Clamps, P1112-3/ 4"	EA	3.75	
5113	Rigid Steel Cnd Clamps, 1"	EA	3.82	
5114	Rigid Steel Cnd Clamps, P1114-1- 1/4"	EA	4.00	
5115	Rigid Steel Cnd Clamps, P1115-1- 1/2"	EA	4.18	
5116	Rigid Steel Cnd Clamps, 2"	EA	4.39	
5117	Rigid Steel Cnd Clamps, P1118-2- 1/2"	EA	4.54	
5118	Rigid Steel Cnd Clamps, 3"	EA	4.72	
5119	Rigid Steel Cnd Clamps, P1120-3- 1/2"	EA	5.18	
5121	Rigid Steel Cnd Clamps,	EA	5.47	
16032 5200	E. MT. Cnd Clamps			
5211	E. M.T. Cnd Clamps, P1426-1/2"	EA	3.63	
5212	E. M.T. Cnd Clamps, P1427-3/4"	EA	3.70	
5213	E. M.T. Cnd Clamps, P1428-1"	EA	3.82	
5214	E. M.T. Cnd Clamps, P1429-1-1/4"	EA	3.95	
5215	E. M.T. Cnd Clamps, P1430-1-1/2"	EA	4.23	
5216	E. M.T. Cnd Clamps, P1431-2"	EA	4.35	
16032 5300	"J" Type Cnd Hangers			
5311	"J" Type Cnd Hangers, 1/2"	EA	5.51	
5312	"J" Type Cnd Hangers, 3/4"	EA	5.60	
5313	"J" Type Cnd Hangers, J1210-1"	EA	5.69	
5314	"J" Type Cnd Hangers, J1212-1-1/ 4"	EA	5.80	
5315	"J" Type Cnd Hangers, J1215-1-1/ 2"	EA	5.89	
5316	"J" Type Cnd Hangers, J1220-2"	EA	6.19	
5317	"J" Type Cnd Hangers, J1225-2-1/ 2"	EA	8.58	
5318	"J" Type Cnd Hangers, J1230-3"	EA	9.26	
5319	"J" Type Cnd Hangers, J1235-3-1/ 2"	EA	9.91	
5321	"J" Type Cnd Hangers, J1240-4"	EA	11.57	
5322	"J" Type Cnd Hangers, J1250-5"	EA	13.36	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5323	"J" Type Cnd Hangers, J1260-6"	EA	16.36	
16032 5909	Deck clamps			
5910	Hanger, stl channel, deck clamps, 3/8" threaded drop rod,	EA	0.64	
16032 5919	Perforated pipe strap			
5920	Hanger, stl channel, 3/4", 20 ga, 10', perforated pipe strap, matl	EA	1.96	
16032 5999	Strap, rigid conduit			
Note: Pipe Clamps For Rigid Conduit Including Hex Screw And Nut				
6000	Hanger, stl channel, strap, rigid conduit, 1/2" dia	EA	1.47	0.32
6050	Hanger, stl channel, strap, rigid conduit, 3/4" dia	EA	1.71	0.32
6100	Hanger, stl channel, strap, rigid conduit, 1" dia	EA	1.82	0.32
6150	Hanger, stl channel, strap, rigid conduit, 1.25" dia	EA	2.03	0.28
6200	Hanger, stl channel, strap, rigid conduit, 1.5" dia	EA	2.21	0.28
6250	Hanger, stl channel, strap, rigid conduit, 2" dia	EA	2.76	0.81
6300	Hanger, stl channel, strap, rigid conduit, 2.5" dia	EA	2.91	0.74
6350	Hanger, stl channel, strap, rigid conduit, 3" dia	EA	3.79	0.89
6400	Hanger, stl channel, strap, rigid conduit, 3.5" dia	EA	4.61	0.92
6450	Hanger, stl channel, strap, rigid conduit, 4" dia	EA	5.59	0.99
16032 7350	Clip, 1 hole for rigid conduit			
7351	Hanger, stl channel, clip, 1 hole, rigid conduit, 3" dia,	EA	10.96	
7352	3-1/2" One Hole Iron Conduit Strap	EA	8.49	
7353	1/2" One Hole Conduit Clip	EA	0.20	
7354	3/4" One Hole Conduit Clip	EA	0.22	
7355	1" One Hole Conduit Clip	EA	0.27	
7356	1-1/4" One Hole Conduit Clip	EA	0.39	
7357	1-1/2" One Hole Conduit Clip	EA	0.44	
7358	2" One Hole Conduit Clip	EA	0.51	
7359	2-1/2" One Hole Conduit Clip	EA	2.27	
7451	Hanger, stl channel, clip, 1 hole, rigid conduit, 4" dia,	EA	34.81	
7501	Hanger, stl channel, clip, 1 hole, rigid conduit, 5" dia,	EA	121.62	
7551	Hanger, stl channel, clip, 1 hole, rigid conduit, 6" dia,	EA	130.24	
16032 9399	Beam clamp, set screw			
9400	Hangers, beam clamp, set screw, 1-5/8" channel	EA	12.11	2.84
9410	Hangers, beam clamp, "C", use with 1/2" rod	EA	9.97	3.08
9420	Hangers, beam clamp, "U" bolt	EA	9.27	2.77
16033 8000	Metal Framing Channel And Fittings			
16033 8200	Metal Framing Channel Fittings			
16033 8290	Threaded Rod			
8291	1/4"x20 Galv All Thread Rod - Double Nut	LF	1.03	
8292	3/8"x16 Galv All Thread Rod - Double Nut	LF	1.06	
16050	Ducts			
16056 0010	Underfloor duct			
16056 0100	Duct			
0101	Underfloor duct, 1-3/8" x 3-1/8" blank, std, 10' section	EA	109.83	10.89
0201	Underfloor duct, 1-3/8" x 7.25" blank, super duct, 10' section	EA	196.01	13.40
0401	Underfloor duct, 1-3/8" x 3-1/8", std, 7/8" insert, 24" OC, 10'	EA	140.17	12.52
0601	Underfloor duct, 1-3/8" x 7.25", super, 7/8" insert, 24" OC, 10'	EA	231.03	15.07
16056 0799	Junction box, single duct			
0800	Underfloor duct, 3-1/8", 1 level, junction box, 1 duct	EA	240.64	17.02
0840	Underfloor duct, 3-1/8" upper & lower, 2 level, junction box, 1	EA	348.93	4.79
1000	Underfloor duct, 7.25", 1 level, junction box, 1 duct	EA	365.35	24.08
1020	Underfloor duct, 7.25" upper & lower, 2 level, junction box, 1	EA	403.69	5.07
1200	Underfloor duct, 3-1/8", 1 level, junction box, 2 duct	EA	387.27	22.80
16056 1399	Junction box, two duct			
1400	Underfloor duct, 7.25", 1 level, junction box, 2 duct	EA	892.56	30.92
1580	Underfloor duct, one 3-1/8" + one 7.25" x same, 1 level,	EA	632.28	21.60
1600	Underfloor duct, junction box, 1 level, triple duct, 3-1/8"	EA	632.28	29.54
16056 1999	Support			
2000	Underfloor duct, support, single cell	EA	27.85	5.75
2400	Underfloor duct, support, double cell	EA	35.07	9.65
2600	Underfloor duct, support, triple cell	EA	43.13	9.96
16056 2609	Duct support & coupling w/ legs, anchor feet			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2610	Underfloor duct, 1 std duct, support & cplg w/legs, anchor	EA	53.33	18.94
2620	Underfloor duct, 2 std duct, support & cplg w/legs, anchor	EA	57.09	18.65
2630	Underfloor duct, 3 std duct, support & cplg w/legs, anchor	EA	60.53	18.34
2640	Underfloor duct, 1 large duct, support & cplg w/legs, anchor	EA	57.09	20.89
2650	Underfloor duct, 2 large duct, support & cplg w/legs, anchor	EA	64.38	20.28
2660	Underfloor duct, 1 std & 1 lge duct, support & cplg w/legs,	EA	60.53	21.85
2670	Underfloor duct, 2 std & 1 lge duct, support & cplg w/legs,	EA	60.53	21.85
2680	Underfloor duct, 1 std & 2 lge duct, support & cplg w/legs,	EA	64.38	21.59
16056 2799 Vertical elbow				
2800	Underfloor duct, vertical elbow, std duct	EA	77.17	8.23
3000	Underfloor duct, vertical elbow, super duct	EA	84.26	8.65
16056 3999 Outlet Service Fittings Does Not Include Wiring Devices				
4000	Underfloor duct, outlet, low tension (tel, computer, etc)	EA	79.54	12.41
4210	Underfloor duct, outlet, low tension, single receptacle	EA	81.60	10.85
4220	Underfloor duct, outlet, low tension, duplex receptacle	EA	81.60	11.03
16056 4349 Elbow, horizontal				
4350	Underfloor duct, elbow, horiz, std duct	EA	135.24	6.77
4360	Underfloor duct, elbow, horiz, super duct	EA	135.24	6.52
16056 4379 Elbow, offset				
4380	Underfloor duct, elbow, offset, std duct	EA	59.71	7.45
4390	Underfloor duct, elbow, offset, super duct	EA	55.06	6.67
16056 4404 Closing cap for insert				
4405	Underfloor duct, closing cap for insert	EA	7.00	1.38
16056 4429 Box opening plug				
4430	Underfloor duct, box opening plug, std duct	EA	5.48	1.17
4440	Underfloor duct, box opening plug, super duct	EA	7.01	1.17
16056 4449 Sleeve coupling				
4450	Underfloor duct, sleeve coupling, std duct	EA	20.36	1.38
4460	Underfloor duct, sleeve coupling, super duct	EA	24.78	1.17
16056 4461 Duct expansion coupling				
4462	Underfloor duct, expansion coupling, std duct	EA	78.39	9.75
4464	Underfloor duct, expansion coupling, super duct	EA	78.39	9.97
16056 4465 Reducing coupling				
4466	Underfloor duct, reducing coupling, large to std duct	EA	126.10	1.17
16056 4469 Conduit adapter				
4470	Underfloor duct, conduit adapter, std duct, 3/4"	EA	37.06	2.38
4480	Underfloor duct, conduit adapter, std duct, 1" or 1.25"	EA	37.06	2.38
4490	Underfloor duct, conduit adapter, std duct, two 1.25"	EA	38.32	2.34
4510	Underfloor duct, conduit adapter, std duct, 2"	EA	39.54	2.52
4520	Underfloor duct, conduit adapter, std duct, three 1.25"	EA	63.79	4.01

16100 Conductors & Grounding

16108 Conductors

Note: 1. Based On 100 Ft (30M) Run. 2. Pulled In Conduit, Except As Noted. 3. Maximum Height Up To 14 Ft. 4. Working Foreman, Unloading, Handling, Pull Wires, Pulling Branch Circuit Conductors, testing, Splicing, Cleanup, New Work Only. 5. All Conductors Are Copper, Except As Otherwise Noted. No Special Set-up Is Required.

16109 0010 Armored cable

Note: Layed In Cable Tray Or Hung In Vertical Cable Shaft

16109 0049 600 volt, copper (BX)

0050	Armored cable, 600 volt, solid, copper (BX), #14, 2 conductor	MF	1,645.62	295.38
1891	For 14'-20' Installed Elevation, Add		118.20	
1892	For 21'-25' Installed Elevation, Add		236.40	
1893	For 26'-30' Installed Eleavtion, Add		295.50	
1894	For 31'-35' Installed Elevation, Add		354.60	
1895	For 36'-40' Installed Elevation, Add		413.70	
1896	For Over 40' Installed Elevation, Add		472.80	
0100	Armored cable, 600 volt, solid, copper (BX), #14, 3 conductor	MF	1,893.67	336.66
1891	For 14'-20' Installed Elevation, Add		128.95	
1892	For 21'-25' Installed Elevation, Add		257.89	
1893	For 26'-30' Installed Eleavtion, Add		322.36	
1894	For 31'-35' Installed Elevation, Add		386.84	
1895	For 36'-40' Installed Elevation, Add		451.31	
1896	For Over 40' Installed Elevation, Add		515.78	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0150	Armored cable, 600 volt, solid, copper (BX), #12, 2 conductor	MF	1,711.95	308.89
1891	For 14'-20' Installed Elevation, Add		123.55	
1892	For 21'-25' Installed Elevation, Add		247.11	
1893	For 26'-30' Installed Eleavtion, Add		308.89	
1894	For 31'-35' Installed Elevation, Add		370.66	
1895	For 36'-40' Installed Elevation, Add		432.44	
1896	For Over 40' Installed Elevation, Add		494.22	
0200	Armored cable, 600 volt, solid, copper (BX), #12, 3 conductor	MF	2,121.39	348.61
1891	For 14'-20' Installed Elevation, Add		141.84	
1892	For 21'-25' Installed Elevation, Add		283.68	
1893	For 26'-30' Installed Eleavtion, Add		354.60	
1894	For 31'-35' Installed Elevation, Add		425.52	
1895	For 36'-40' Installed Elevation, Add		496.44	
1896	For Over 40' Installed Elevation, Add		567.36	
0250	Armored cable, 600 volt, solid, copper (BX), #10, 2 conductor	MF	2,266.63	354.60
1891	For 14'-20' Installed Elevation, Add		141.84	
1892	For 21'-25' Installed Elevation, Add		283.68	
1893	For 26'-30' Installed Eleavtion, Add		354.60	
1894	For 31'-35' Installed Elevation, Add		425.52	
1895	For 36'-40' Installed Elevation, Add		496.44	
1896	For Over 40' Installed Elevation, Add		567.36	
0300	Armored cable, 600 volt, solid, copper (BX), #10, 3 conductor	MF	2,876.87	419.28
1891	For 14'-20' Installed Elevation, Add		177.30	
1892	For 21'-25' Installed Elevation, Add		354.60	
1893	For 26'-30' Installed Eleavtion, Add		443.25	
1894	For 31'-35' Installed Elevation, Add		531.90	
1895	For 36'-40' Installed Elevation, Add		620.55	
1896	For Over 40' Installed Elevation, Add		709.20	
0350	Armored cable, 600 volt, solid, copper (BX), #8, 3 conductor	MF	3,988.12	544.31
1891	For 14'-20' Installed Elevation, Add		217.55	
1892	For 21'-25' Installed Elevation, Add		435.09	
1893	For 26'-30' Installed Eleavtion, Add		543.87	
1894	For 31'-35' Installed Elevation, Add		652.64	
1895	For 36'-40' Installed Elevation, Add		761.41	
1896	For Over 40' Installed Elevation, Add		870.18	
0360	Armored cable, 600 V, stranded, copper (BX), #8, 3 conductor	MF	4,604.17	628.00
1891	For 14'-20' Installed Elevation, Add		256.96	
1892	For 21'-25' Installed Elevation, Add		513.91	
1893	For 26'-30' Installed Eleavtion, Add		642.39	
1894	For 31'-35' Installed Elevation, Add		770.87	
1895	For 36'-40' Installed Elevation, Add		899.35	
1896	For Over 40' Installed Elevation, Add		1,027.83	
0382	Armored cable, 600 V, stranded, copper (BX), #6, 3 conductor	MF	5,900.58	902.74
1891	For 14'-20' Installed Elevation, Add		295.50	
1892	For 21'-25' Installed Elevation, Add		591.00	
1893	For 26'-30' Installed Eleavtion, Add		738.75	
1894	For 31'-35' Installed Elevation, Add		886.50	
1895	For 36'-40' Installed Elevation, Add		1,034.25	
1896	For Over 40' Installed Elevation, Add		1,182.00	
0390	Armored cable, 600 V, stranded, copper (BX), #4, 3 conductor	MF	6,277.92	1,034.76
1891	For 14'-20' Installed Elevation, Add		202.63	
1892	For 21'-25' Installed Elevation, Add		405.26	
1893	For 26'-30' Installed Eleavtion, Add		506.57	
1894	For 31'-35' Installed Elevation, Add		607.89	
1895	For 36'-40' Installed Elevation, Add		709.20	
1896	For Over 40' Installed Elevation, Add		810.52	
0392	Armored cable, 600 V, stranded, copper (BX), #2, 3 conductor	MF	8,225.81	1,104.12
1891	For 14'-20' Installed Elevation, Add		217.55	
1892	For 21'-25' Installed Elevation, Add		435.09	
1893	For 26'-30' Installed Eleavtion, Add		543.87	
1894	For 31'-35' Installed Elevation, Add		652.64	
1895	For 36'-40' Installed Elevation, Add		761.41	
1896	For Over 40' Installed Elevation, Add		870.18	
16109 2400 15 KV, copper				
2500	Armored cable, 15KV, #2, cu, 3 cnct w/PVC jacket grounded, galv	LF	12.93	0.89
1891	For 14'-20' Installed Elevation, Add		0.19	
1892	For 21'-25' Installed Elevation, Add		0.38	
1893	For 26'-30' Installed Eleavtion, Add		0.47	
1894	For 31'-35' Installed Elevation, Add		0.57	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1895	For 36'-40' Installed Elevation, Add		0.66	
1896	For Over 40' Installed Elevation, Add		0.76	
2800	Armored cable, 15KV, 1/0, cu, 3 condct w/PVC jacket grounded, galv	LF	16.27	1.10
1891	For 14'-20' Installed Elevation, Add		0.22	
1892	For 21'-25' Installed Elevation, Add		0.44	
1893	For 26'-30' Installed Eleavtion, Add		0.55	
1894	For 31'-35' Installed Elevation, Add		0.65	
1895	For 36'-40' Installed Elevation, Add		0.76	
1896	For Over 40' Installed Elevation, Add		0.87	
3220	Armored cable, 15KV, #2, cu, 3 condct w/PVC jacket grounded, in cable	LF	12.93	0.89
1891	For 14'-20' Installed Elevation, Add		0.19	
1892	For 21'-25' Installed Elevation, Add		0.38	
1893	For 26'-30' Installed Eleavtion, Add		0.47	
1894	For 31'-35' Installed Elevation, Add		0.57	
1895	For 36'-40' Installed Elevation, Add		0.66	
1896	For Over 40' Installed Elevation, Add		0.76	
3230	Armored cable, 15KV, 1/0, cu, 3 condct w/PVC jacket grounded, in	LF	16.27	1.06
1891	For 14'-20' Installed Elevation, Add		0.22	
1892	For 21'-25' Installed Elevation, Add		0.44	
1893	For 26'-30' Installed Eleavtion, Add		0.55	
1894	For 31'-35' Installed Elevation, Add		0.65	
1895	For 36'-40' Installed Elevation, Add		0.76	
1896	For Over 40' Installed Elevation, Add		0.87	
16111 0010 Fiber optics				
16111 0999 Cable				
1000	Fiber optic sys, 4 fiber, cable, 62.5 microns, direct burial	LF	2.55	0.76
1020	Fiber optic sys, cable, 62.5 microns, indoor, 2 fiber	LF	1.11	0.39
1040	Fiber optic sys, aerial/duct, cable, 62.5 microns, outdoor	LF	2.63	0.22
1060	Fiber optic sys, 8 fiber, cable, 50 microns, direct burial	LF	2.11	0.17
1080	Fiber optic sys, 12 fiber, cable, 50 microns, direct burial	LF	2.75	0.17
1100	Fiber optic sys, cable, 50 microns, indoor, 12 fiber	LF	3.56	0.80
16111 1119 Connectors				
1120	Fiber optic sys, transmission, connectors, 62.5 micron cable	EA	28.44	
1801	For 14'-20' Installed Elevation, Add		1.78	
1802	For 21'-25' Installed Elevation, Add		3.57	
1803	For 26'-30' Installed Elevation, Add		4.46	
1804	For 31'-35' Installed Elevation, Add		5.35	
1805	For 36'-40' Installed Elevation, Add		6.24	
1806	For Over 40' Installed Elevation, Add		7.13	
1140	Fiber optic sys, cable splice, connectors, 62.5 micron cable	EA	25.30	
1801	For 14'-20' Installed Elevation, Add		1.78	
1802	For 21'-25' Installed Elevation, Add		3.57	
1803	For 26'-30' Installed Elevation, Add		4.46	
1804	For 31'-35' Installed Elevation, Add		5.35	
1805	For 36'-40' Installed Elevation, Add		6.24	
1806	For Over 40' Installed Elevation, Add		7.13	
1160	Fiber optic sys, transmission, connectors, 125 micron cable	EA	54.81	
1801	For 14'-20' Installed Elevation, Add		4.46	
1802	For 21'-25' Installed Elevation, Add		8.92	
1803	For 26'-30' Installed Elevation, Add		11.15	
1804	For 31'-35' Installed Elevation, Add		13.37	
1805	For 36'-40' Installed Elevation, Add		15.60	
1806	For Over 40' Installed Elevation, Add		17.83	
16111 1179 Receiver				
1180	Fiber optic sys, receiver, 1.2 mile range	EA	367.98	
1801	For 14'-20' Installed Elevation, Add		3.57	
1802	For 21'-25' Installed Elevation, Add		7.13	
1803	For 26'-30' Installed Elevation, Add		8.92	
1804	For 31'-35' Installed Elevation, Add		10.70	
1805	For 36'-40' Installed Elevation, Add		12.48	
1806	For Over 40' Installed Elevation, Add		14.26	
1200	Fiber optic sys, receiver, 1.9 mile range	EA	899.00	
1801	For 14'-20' Installed Elevation, Add		3.57	
1802	For 21'-25' Installed Elevation, Add		7.13	
1803	For 26'-30' Installed Elevation, Add		8.92	
1804	For 31'-35' Installed Elevation, Add		10.70	
1805	For 36'-40' Installed Elevation, Add		12.48	
1806	For Over 40' Installed Elevation, Add		14.26	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1220	Fiber optic sys, receiver, 6.2 mile range	EA	1,470.77	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
16111 1239	Transmitter			
1240	Fiber optic sys, transmitter, 1.2 mile range	EA	367.98	
1801	For 14'-20' Installed Elevation, Add		3.57	
1802	For 21'-25' Installed Elevation, Add		7.13	
1803	For 26'-30' Installed Elevation, Add		8.92	
1804	For 31'-35' Installed Elevation, Add		10.70	
1805	For 36'-40' Installed Elevation, Add		12.48	
1806	For Over 40' Installed Elevation, Add		14.26	
1260	Fiber optic sys, transmitter, 1.9 mile range	EA	899.00	
1801	For 14'-20' Installed Elevation, Add		3.57	
1802	For 21'-25' Installed Elevation, Add		7.13	
1803	For 26'-30' Installed Elevation, Add		8.92	
1804	For 31'-35' Installed Elevation, Add		10.70	
1805	For 36'-40' Installed Elevation, Add		12.48	
1806	For Over 40' Installed Elevation, Add		14.26	
1280	Fiber optic sys, transmitter, 6.2 mile range	EA	1,470.77	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
16111 1299	Modem			
1300	Fiber optic sys, modem, 1.2 mile range	EA	491.23	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
1320	Fiber optic sys, modem, 6.2 mile range	EA	1,188.41	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
1340	Fiber optic sys, modem, 1.9 mile range, 12 channel	EA	2,228.37	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
16111 1359	Repeater			
Note: And Receiver, Back To Back) Does Not Include Power Source				
1360	Fiber optic sys, repeater, 1.2 mile range	EA	791.74	
1801	For 14'-20' Installed Elevation, Add		7.13	
1802	For 21'-25' Installed Elevation, Add		14.26	
1803	For 26'-30' Installed Elevation, Add		17.83	
1804	For 31'-35' Installed Elevation, Add		21.40	
1805	For 36'-40' Installed Elevation, Add		24.96	
1806	For Over 40' Installed Elevation, Add		28.53	
1380	Fiber optic sys, repeater, 1.9 mile range	EA	791.74	
1801	For 14'-20' Installed Elevation, Add		7.13	
1802	For 21'-25' Installed Elevation, Add		14.26	
1803	For 26'-30' Installed Elevation, Add		17.83	
1804	For 31'-35' Installed Elevation, Add		21.40	
1805	For 36'-40' Installed Elevation, Add		24.96	
1806	For Over 40' Installed Elevation, Add		28.53	
1400	Fiber optic sys, repeater, 6.2 mile range	EA	1,420.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
1420	Fiber optic sys, repeater, 1.2 mile range, digital	EA	863.06	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
16111 1439	Transceiver			
1440	Fiber optic sys, transceiver, 1.9 mile range	EA	1,005.98	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
1460	Fiber optic sys, transceiver, 1.2 mile range, digital	EA	474.96	
1411	For Angle Connector, Add		69.79	
1801	For 14'-20' Installed Elevation, Add		14.26	
1802	For 21'-25' Installed Elevation, Add		28.53	
1803	For 26'-30' Installed Elevation, Add		35.66	
1804	For 31'-35' Installed Elevation, Add		42.79	
1805	For 36'-40' Installed Elevation, Add		49.92	
1806	For Over 40' Installed Elevation, Add		57.06	
16111 1479	Cable enclosure			
1480	Fiber optic sys, cable enclosure, interior NEMA 13	EA	267.82	
1801	For 14'-20' Installed Elevation, Add		10.19	
1802	For 21'-25' Installed Elevation, Add		20.38	
1803	For 26'-30' Installed Elevation, Add		25.47	
1804	For 31'-35' Installed Elevation, Add		30.57	
1805	For 36'-40' Installed Elevation, Add		35.66	
1806	For Over 40' Installed Elevation, Add		40.76	
1500	Fiber optic sys, splice w/enclosure encapsulant, cable	EA	281.27	
1801	For 14'-20' Installed Elevation, Add		4.46	
1802	For 21'-25' Installed Elevation, Add		8.92	
1803	For 26'-30' Installed Elevation, Add		11.15	
1804	For 31'-35' Installed Elevation, Add		13.37	
1805	For 36'-40' Installed Elevation, Add		15.60	
1806	For Over 40' Installed Elevation, Add		17.83	
16111 2000	Fiber Optic Cable 50 Mcrons			
2001	Fib Optic Dir Burial Ca, 8 Fiber 50 Mcrons Cable		2.85	0.35
2002	Fib Optic Dir Burial Ca, 12 Fiber 50 Mcrons Cable		3.66	0.35
2003	Fib Optic Indoor Cable, 12 Fiber 50 Mcrons Cable		4.90	0.71
16111 3000	Fiber Optic Cable 125 Mcrons			
16111 3010	Fiber Optic Connectors For 125 Mcrons Cable SST			
3011	Fib Optic Conn f/Transmission Eq Stain Stl f/125 Mcrons Cable		68.22	23.56
16111 5070	Heavy Duty Enclosed Floodlight Wth Asymmetrica-			
5074	250W H.P.S. Flood Light	EA	557.72	
5075	400W H.P.S. Flood Light	EA	574.90	
5076	1000W H.P.S. Flood Light	EA	830.13	
16111 8000	Residential Fixtures			
8001	Wall Lantern P-5802-11	EA	59.69	
8002	Vanity Light P-3290	EA	89.91	
8003	Foyer Fixture P-3655-10	EA	84.67	
8004	Kitchen Flo. Fixture P-7215 ES, P-7251-35	EA	334.62	
8005	Dining Fixture P-3657-10	EA	121.19	
8006	Family Room Fixture P-3654-10	EA	134.86	
8007	Bedroom Fixture P-4944	EA	45.28	
8008	Hallway Fixture P-3599-10	EA	27.52	
8009	Utility Fixture (Pullchain)	EA	10.60	
8010	Closet Fixture P-3605-30	EA	22.31	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8011	Kitchen Cabinet Fixture (Strip)	EA	45.42	
8012	Porch Fixture P-3518-30	EA	35.44	
8013	5 Blade Paddle Fan	EA	196.66	
16113 0010	Portable cord, 600 volt			
16113 0099	Type S0			
	Note: Includes Handling, Unrolling, Laying In Tray Or Fastening To Wall, And Cutting To Length.			
16113 0099 #18				
0100	Portable cord, type S0, 600 volt, #18, 2 conductor	LF	0.53	0.21
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.06	
1893	For 26'-30' Installed Elevation, Add		0.07	
1894	For 31'-35' Installed Elevation, Add		0.09	
1895	For 36'-40' Installed Elevation, Add		0.10	
1896	For Over 40' Installed Elevation, Add		0.12	
0110	Portable cord, type S0, 600 volt, #18, 3 conductor	LF	0.57	0.21
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.06	
1893	For 26'-30' Installed Elevation, Add		0.07	
1894	For 31'-35' Installed Elevation, Add		0.09	
1895	For 36'-40' Installed Elevation, Add		0.10	
1896	For Over 40' Installed Elevation, Add		0.12	
16113 0119 #16				
0120	Portable cord, type S0, 600 volt, #16, 2 conductor	LF	0.61	0.25
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0130	Portable cord, type S0, 600 volt, #16, 3 conductor	LF	0.65	0.25
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0140	Portable cord, type S0, 600 volt, #16, 4 conductor	LF	0.77	0.25
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0150	Portable cord, type S0, 600 volt, #16, 5 conductor	LF	0.95	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
0160	Portable cord, type S0, 600 volt, #16, 6 conductor	LF	1.08	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
0170	Portable cord, type S0, 600 volt, #16, 7 conductor	LF	1.20	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.08	
1893	For 26'-30' Installed Elevation, Add		0.10	
1894	For 31'-35' Installed Elevation, Add		0.12	
1895	For 36'-40' Installed Elevation, Add		0.14	
1896	For Over 40' Installed Elevation, Add		0.16	
0180	Portable cord, type S0, 600 volt, #16, 8 conductor	LF	1.27	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.08	
1893	For 26'-30' Installed Elevation, Add		0.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1894	For 31' - 35' Installed Elevation, Add		0.12	
1895	For 36' - 40' Installed Elevation, Add		0.14	
1896	For Over 40' Installed Elevation, Add		0.16	
0190	Portable cord, type S0, 600 volt, #16, 9 conductor	LF	1.43	0.35
1891	For 14' - 20' Installed Elevation, Add		0.05	
1892	For 21' - 25' Installed Elevation, Add		0.09	
1893	For 26' - 30' Installed Elevation, Add		0.11	
1894	For 31' - 35' Installed Elevation, Add		0.14	
1895	For 36' - 40' Installed Elevation, Add		0.16	
1896	For Over 40' Installed Elevation, Add		0.18	
0200	Portable cord, type S0, 600 volt, #16, 10 conductor	LF	1.58	0.36
1891	For 14' - 20' Installed Elevation, Add		0.05	
1892	For 21' - 25' Installed Elevation, Add		0.10	
1893	For 26' - 30' Installed Elevation, Add		0.13	
1894	For 31' - 35' Installed Elevation, Add		0.15	
1895	For 36' - 40' Installed Elevation, Add		0.18	
1896	For Over 40' Installed Elevation, Add		0.20	
0210	Portable cord, type S0, 600 volt, #16, 12 conductor	LF	1.82	0.36
1891	For 14' - 20' Installed Elevation, Add		0.06	
1892	For 21' - 25' Installed Elevation, Add		0.12	
1893	For 26' - 30' Installed Elevation, Add		0.15	
1894	For 31' - 35' Installed Elevation, Add		0.17	
1895	For 36' - 40' Installed Elevation, Add		0.20	
1896	For Over 40' Installed Elevation, Add		0.23	
0220	Portable cord, type S0, 600 volt, #16, 14 conductor	LF	2.31	0.39
1891	For 14' - 20' Installed Elevation, Add		0.07	
1892	For 21' - 25' Installed Elevation, Add		0.14	
1893	For 26' - 30' Installed Elevation, Add		0.17	
1894	For 31' - 35' Installed Elevation, Add		0.20	
1895	For 36' - 40' Installed Elevation, Add		0.24	
1896	For Over 40' Installed Elevation, Add		0.27	
0230	Portable cord, type S0, 600 volt, #16, 16 conductor	LF	2.56	0.39
1891	For 14' - 20' Installed Elevation, Add		0.09	
1892	For 21' - 25' Installed Elevation, Add		0.17	
1893	For 26' - 30' Installed Elevation, Add		0.21	
1894	For 31' - 35' Installed Elevation, Add		0.26	
1895	For 36' - 40' Installed Elevation, Add		0.30	
1896	For Over 40' Installed Elevation, Add		0.34	
16113 0239 #14				
0240	Portable cord, type S0, 600 volt, #14, 2 conductor	LF	0.80	0.11
1891	For 14' - 20' Installed Elevation, Add		0.03	
1892	For 21' - 25' Installed Elevation, Add		0.07	
1893	For 26' - 30' Installed Elevation, Add		0.09	
1894	For 31' - 35' Installed Elevation, Add		0.10	
1895	For 36' - 40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0250	Portable cord, type S0, 600 volt, #14, 3 conductor	LF	0.85	0.21
1891	For 14' - 20' Installed Elevation, Add		0.03	
1892	For 21' - 25' Installed Elevation, Add		0.07	
1893	For 26' - 30' Installed Elevation, Add		0.09	
1894	For 31' - 35' Installed Elevation, Add		0.10	
1895	For 36' - 40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0260	Portable cord, type S0, 600 volt, #14, 4 conductor	LF	0.99	0.25
1891	For 14' - 20' Installed Elevation, Add		0.03	
1892	For 21' - 25' Installed Elevation, Add		0.07	
1893	For 26' - 30' Installed Elevation, Add		0.09	
1894	For 31' - 35' Installed Elevation, Add		0.10	
1895	For 36' - 40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0270	Portable cord, type S0, 600 volt, #14, 5 conductor	LF	1.09	0.18
1891	For 14' - 20' Installed Elevation, Add		0.04	
1892	For 21' - 25' Installed Elevation, Add		0.07	
1893	For 26' - 30' Installed Elevation, Add		0.09	
1894	For 31' - 35' Installed Elevation, Add		0.11	
1895	For 36' - 40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
16113 0279 #12				
0280	Portable cord, type S0, 600 volt, #12, 2 conductor	LF	0.92	0.25

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0290	Portable cord, type S0, 600 volt, #12, 3 conductor	LF	1.06	0.21
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0300	Portable cord, type S0, 600 volt, #12, 4 conductor	LF	1.12	0.25
1891	For 14'-20' Installed Elevation, Add		0.03	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.10	
1895	For 36'-40' Installed Elevation, Add		0.12	
1896	For Over 40' Installed Elevation, Add		0.14	
0310	Portable cord, type S0, 600 volt, #12, 5 conductor	LF	1.47	0.21
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
16113 0319 #10				
0320	Portable cord, type S0, 600 volt, #10, 2 conductor	LF	1.08	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
0330	Portable cord, type S0, 600 volt, #10, 3 conductor	LF	1.20	0.21
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
0340	Portable cord, type S0, 600 volt, #10, 4 conductor	LF	1.32	0.25
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.07	
1893	For 26'-30' Installed Elevation, Add		0.09	
1894	For 31'-35' Installed Elevation, Add		0.11	
1895	For 36'-40' Installed Elevation, Add		0.13	
1896	For Over 40' Installed Elevation, Add		0.15	
0350	Portable cord, type S0, 600 volt, #10, 5 conductor	LF	1.83	0.21
1891	For 14'-20' Installed Elevation, Add		0.04	
1892	For 21'-25' Installed Elevation, Add		0.08	
1893	For 26'-30' Installed Elevation, Add		0.10	
1894	For 31'-35' Installed Elevation, Add		0.12	
1895	For 36'-40' Installed Elevation, Add		0.14	
1896	For Over 40' Installed Elevation, Add		0.16	
16113 0359 #8				
0360	Portable cord, type S0, 600 volt, #8, 2 conductor	LF	1.72	0.35
1891	For 14'-20' Installed Elevation, Add		0.05	
1892	For 21'-25' Installed Elevation, Add		0.10	
1893	For 26'-30' Installed Elevation, Add		0.13	
1894	For 31'-35' Installed Elevation, Add		0.15	
1895	For 36'-40' Installed Elevation, Add		0.18	
1896	For Over 40' Installed Elevation, Add		0.20	
0370	Portable cord, type S0, 600 volt, #8, 3 conductor	LF	2.03	0.36
1891	For 14'-20' Installed Elevation, Add		0.05	
1892	For 21'-25' Installed Elevation, Add		0.11	
1893	For 26'-30' Installed Elevation, Add		0.13	
1894	For 31'-35' Installed Elevation, Add		0.16	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
	1895 For 36'-40' Installed Elevation, Add		0.19	
	1896 For Over 40' Installed Elevation, Add		0.21	
0380	Portable cord, type S0, 600 volt, #8, 4 conductor	LF	2.35	0.32
	1891 For 14'-20' Installed Elevation, Add		0.05	
	1892 For 21'-25' Installed Elevation, Add		0.11	
	1893 For 26'-30' Installed Elevation, Add		0.14	
	1894 For 31'-35' Installed Elevation, Add		0.16	
	1895 For 36'-40' Installed Elevation, Add		0.19	
	1896 For Over 40' Installed Elevation, Add		0.22	
0390	Portable cord, type S0, 600 volt, #8, 5 conductor	LF	2.47	0.32
	1891 For 14'-20' Installed Elevation, Add		0.06	
	1892 For 21'-25' Installed Elevation, Add		0.12	
	1893 For 26'-30' Installed Elevation, Add		0.15	
	1894 For 31'-35' Installed Elevation, Add		0.17	
	1895 For 36'-40' Installed Elevation, Add		0.20	
	1896 For Over 40' Installed Elevation, Add		0.23	
16113 0399 #6				
0400	Portable cord, type S0, 600 volt, #6, 2 conductor	LF	2.00	0.28
	1891 For 14'-20' Installed Elevation, Add		0.05	
	1892 For 21'-25' Installed Elevation, Add		0.11	
	1893 For 26'-30' Installed Elevation, Add		0.14	
	1894 For 31'-35' Installed Elevation, Add		0.16	
	1895 For 36'-40' Installed Elevation, Add		0.19	
	1896 For Over 40' Installed Elevation, Add		0.22	
0410	Portable cord, type S0, 600 volt, #6, 3 conductor	LF	2.44	0.32
	1891 For 14'-20' Installed Elevation, Add		0.06	
	1892 For 21'-25' Installed Elevation, Add		0.12	
	1893 For 26'-30' Installed Elevation, Add		0.15	
	1894 For 31'-35' Installed Elevation, Add		0.17	
	1895 For 36'-40' Installed Elevation, Add		0.20	
	1896 For Over 40' Installed Elevation, Add		0.23	
0420	Portable cord, type S0, 600 volt, #6, 4 conductor	LF	3.00	0.46
	1891 For 14'-20' Installed Elevation, Add		0.07	
	1892 For 21'-25' Installed Elevation, Add		0.14	
	1893 For 26'-30' Installed Elevation, Add		0.17	
	1894 For 31'-35' Installed Elevation, Add		0.20	
	1895 For 36'-40' Installed Elevation, Add		0.24	
	1896 For Over 40' Installed Elevation, Add		0.27	
0430	Portable cord, type S0, 600 volt, #6, 5 conductor	LF	4.04	0.50
	1891 For 14'-20' Installed Elevation, Add		0.08	
	1892 For 21'-25' Installed Elevation, Add		0.16	
	1893 For 26'-30' Installed Elevation, Add		0.20	
	1894 For 31'-35' Installed Elevation, Add		0.24	
	1895 For 36'-40' Installed Elevation, Add		0.28	
	1896 For Over 40' Installed Elevation, Add		0.32	
16113 0439 #4				
0440	Portable cord, type S0, 600 volt, #4, 2 conductor	LF	3.00	0.42
	1891 For 14'-20' Installed Elevation, Add		0.07	
	1892 For 21'-25' Installed Elevation, Add		0.14	
	1893 For 26'-30' Installed Elevation, Add		0.17	
	1894 For 31'-35' Installed Elevation, Add		0.20	
	1895 For 36'-40' Installed Elevation, Add		0.24	
	1896 For Over 40' Installed Elevation, Add		0.27	
0450	Portable cord, type S0, 600 volt, #4, 3 conductor	LF	4.35	0.50
	1891 For 14'-20' Installed Elevation, Add		0.08	
	1892 For 21'-25' Installed Elevation, Add		0.16	
	1893 For 26'-30' Installed Elevation, Add		0.20	
	1894 For 31'-35' Installed Elevation, Add		0.24	
	1895 For 36'-40' Installed Elevation, Add		0.28	
	1896 For Over 40' Installed Elevation, Add		0.32	
0460	Portable cord, type S0, 600 volt, #4, 4 conductor	LF	5.03	0.46
	1891 For 14'-20' Installed Elevation, Add		0.09	
	1892 For 21'-25' Installed Elevation, Add		0.17	
	1893 For 26'-30' Installed Elevation, Add		0.22	
	1894 For 31'-35' Installed Elevation, Add		0.26	
	1895 For 36'-40' Installed Elevation, Add		0.30	
	1896 For Over 40' Installed Elevation, Add		0.34	
0470	Portable cord, type S0, 600 volt, #4, 5 conductor	LF	5.98	0.57
	1891 For 14'-20' Installed Elevation, Add		0.10	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1892	For 21'-25' Installed Elevation, Add		0.19	
1893	For 26'-30' Installed Elevation, Add		0.24	
1894	For 31'-35' Installed Elevation, Add		0.29	
1895	For 36'-40' Installed Elevation, Add		0.34	
1896	For Over 40' Installed Elevation, Add		0.38	
16113 0479 #2				
0480	Portable cord, type S0, 600 volt, #2, 2 conductor	LF	4.69	0.67
1891	For 14'-20' Installed Elevation, Add		0.13	
1892	For 21'-25' Installed Elevation, Add		0.25	
1893	For 26'-30' Installed Elevation, Add		0.32	
1894	For 31'-35' Installed Elevation, Add		0.38	
1895	For 36'-40' Installed Elevation, Add		0.44	
1896	For Over 40' Installed Elevation, Add		0.50	
0490	Portable cord, type S0, 600 volt, #2, 3 conductor	LF	5.83	0.96
1891	For 14'-20' Installed Elevation, Add		0.16	
1892	For 21'-25' Installed Elevation, Add		0.32	
1893	For 26'-30' Installed Elevation, Add		0.41	
1894	For 31'-35' Installed Elevation, Add		0.49	
1895	For 36'-40' Installed Elevation, Add		0.57	
1896	For Over 40' Installed Elevation, Add		0.65	
0500	Portable cord, type S0, 600 volt, #2, 4 conductor	LF	7.21	1.46
1891	For 14'-20' Installed Elevation, Add		0.20	
1892	For 21'-25' Installed Elevation, Add		0.41	
1893	For 26'-30' Installed Elevation, Add		0.51	
1894	For 31'-35' Installed Elevation, Add		0.61	
1895	For 36'-40' Installed Elevation, Add		0.71	
1896	For Over 40' Installed Elevation, Add		0.81	
0510	Portable cord, type S0, 600 volt, #2, 5 conductor	LF	9.33	1.35
1891	For 14'-20' Installed Elevation, Add		0.27	
1892	For 21'-25' Installed Elevation, Add		0.54	
1893	For 26'-30' Installed Elevation, Add		0.68	
1894	For 31'-35' Installed Elevation, Add		0.81	
1895	For 36'-40' Installed Elevation, Add		0.95	
1896	For Over 40' Installed Elevation, Add		1.08	
16113 0999 Cord grip, with watertight connector				
1000	Portable cord, cord grip, zinc plate stl, 3/4" NP, w/watertight	EA	23.29	10.59
1891	For 14'-20' Installed Elevation, Add		2.16	
1892	For 21'-25' Installed Elevation, Add		4.32	
1893	For 26'-30' Installed Elevation, Add		5.40	
1894	For 31'-35' Installed Elevation, Add		6.48	
1895	For 36'-40' Installed Elevation, Add		7.56	
1896	For Over 40' Installed Elevation, Add		8.64	
1050	Portable cord, cord grip, zinc plate stl, 1/2" NP, w/watertight	EA	23.16	10.62
1891	For 14'-20' Installed Elevation, Add		2.16	
1892	For 21'-25' Installed Elevation, Add		4.32	
1893	For 26'-30' Installed Elevation, Add		5.40	
1894	For 31'-35' Installed Elevation, Add		6.48	
1895	For 36'-40' Installed Elevation, Add		7.56	
1896	For Over 40' Installed Elevation, Add		8.64	
16113 2200 Cable Reel Includes Handling, Mounting,				
Note: Electrical Connections, Installing Cord. See 16122 1000 For Cords.				
2201	Extension Cord Reel (yellow SJO) up To 25 Feet, 16-3	EA	245.12	14.69
1891	For 14'-20' Installed Elevation, Add		3.57	
1892	For 21'-25' Installed Elevation, Add		7.13	
1893	For 26'-30' Installed Elevation, Add		8.92	
1894	For 31'-35' Installed Elevation, Add		10.70	
1895	For 36'-40' Installed Elevation, Add		12.48	
1896	For Over 40' Installed Elevation, Add		14.26	
2202	Hvy Dty Power Cable Reel, w/P 55' 5/C #10 SJO, w/Anchor	EA	471.50	60.66
1891	For 14'-20' Installed Elevation, Add		14.26	
1892	For 21'-25' Installed Elevation, Add		28.53	
1893	For 26'-30' Installed Elevation, Add		35.66	
1894	For 31'-35' Installed Elevation, Add		42.79	
1895	For 36'-40' Installed Elevation, Add		49.92	
1896	For Over 40' Installed Elevation, Add		57.06	
2203	Control Cable Reel For 60' Of 16/C #16 S0 Cord	EA	1,001.12	89.33
1891	For 14'-20' Installed Elevation, Add		21.42	
1892	For 21'-25' Installed Elevation, Add		42.83	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1893	For 26'-30' Installed Elevation, Add		53.54	
1894	For 31'-35' Installed Elevation, Add		64.25	
1895	For 36'-40' Installed Elevation, Add		74.95	
1896	For Over 40' Installed Elevation, Add		85.66	
16114 0010	Non-metallic sheathed cable, 600 volt			
16114 0100	Copper with ground wire, (Romex)			
0250	Non-metallic sheathed cable, 2 conductor, 600V, cu w/ground, #12	MF	1,423.40	549.81
1891	For 14'-20' Installed Elevation, Add		113.29	
1892	For 21'-25' Installed Elevation, Add		226.58	
1893	For 26'-30' Installed Elevation, Add		283.23	
1894	For 31'-35' Installed Elevation, Add		339.87	
1895	For 36'-40' Installed Elevation, Add		396.52	
1896	For Over 40' Installed Elevation, Add		453.16	
0252	# 12-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	1,446.61	583.87
1891	For 14'-20' Installed Elevation, Add		116.77	
1892	For 21'-25' Installed Elevation, Add		233.54	
1893	For 26'-30' Installed Elevation, Add		291.93	
1894	For 31'-35' Installed Elevation, Add		350.32	
1895	For 36'-40' Installed Elevation, Add		408.70	
1896	For Over 40' Installed Elevation, Add		467.09	
0350	Non-metallic sheathed cable, 2 conductor, 600V, cu w/ground, #10	MF	1,771.67	644.73
1891	For 14'-20' Installed Elevation, Add		128.95	
1892	For 21'-25' Installed Elevation, Add		257.89	
1893	For 26'-30' Installed Elevation, Add		322.36	
1894	For 31'-35' Installed Elevation, Add		386.84	
1895	For 36'-40' Installed Elevation, Add		451.31	
1896	For Over 40' Installed Elevation, Add		515.78	
0400	Non-metallic sheathed cable, 3 conductor, 600V, cu w/ground, #10	MF	2,400.99	826.18
1891	For 14'-20' Installed Elevation, Add		157.60	
1892	For 21'-25' Installed Elevation, Add		315.20	
1893	For 26'-30' Installed Elevation, Add		394.00	
1894	For 31'-35' Installed Elevation, Add		472.80	
1895	For 36'-40' Installed Elevation, Add		551.60	
1896	For Over 40' Installed Elevation, Add		630.40	
0500	# 14-2 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	1,016.55	458.46
1891	For 14'-20' Installed Elevation, Add		91.70	
1892	For 21'-25' Installed Elevation, Add		183.39	
1893	For 26'-30' Installed Elevation, Add		229.24	
1894	For 31'-35' Installed Elevation, Add		275.09	
1895	For 36'-40' Installed Elevation, Add		320.93	
1896	For Over 40' Installed Elevation, Add		366.78	
0510	# 14-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	1,271.10	541.75
1891	For 14'-20' Installed Elevation, Add		108.39	
1892	For 21'-25' Installed Elevation, Add		216.77	
1893	For 26'-30' Installed Elevation, Add		270.96	
1894	For 31'-35' Installed Elevation, Add		325.16	
1895	For 36'-40' Installed Elevation, Add		379.35	
1896	For Over 40' Installed Elevation, Add		433.54	
0600	# 8-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	2,929.38	1,000.15
1891	For 14'-20' Installed Elevation, Add		200.03	
1892	For 21'-25' Installed Elevation, Add		400.06	
1893	For 26'-30' Installed Elevation, Add		500.08	
1894	For 31'-35' Installed Elevation, Add		600.09	
1895	For 36'-40' Installed Elevation, Add		700.11	
1896	For Over 40' Installed Elevation, Add		800.12	
0700	# 6-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	3,704.87	1,208.57
1891	For 14'-20' Installed Elevation, Add		241.72	
1892	For 21'-25' Installed Elevation, Add		483.43	
1893	For 26'-30' Installed Elevation, Add		604.29	
1894	For 31'-35' Installed Elevation, Add		725.15	
1895	For 36'-40' Installed Elevation, Add		846.01	
1896	For Over 40' Installed Elevation, Add		966.86	
0800	# 4-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	4,769.84	1,418.09
1891	For 14'-20' Installed Elevation, Add		283.62	
1892	For 21'-25' Installed Elevation, Add		567.24	
1893	For 26'-30' Installed Elevation, Add		709.05	
1894	For 31'-35' Installed Elevation, Add		850.86	
1895	For 36'-40' Installed Elevation, Add		992.67	
1896	For Over 40' Installed Elevation, Add		1,134.48	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0850	# 2-3 w/Gnd Cable, Type NM Copper Non-Metalic Sheathed	MF	6,080.00	1,625.18
1891	For 14'-20' Installed Elevation, Add		325.15	
1892	For 21'-25' Installed Elevation, Add		650.31	
1893	For 26'-30' Installed Elevation, Add		812.89	
1894	For 31'-35' Installed Elevation, Add		975.46	
1895	For 36'-40' Installed Elevation, Add		1,138.04	
1896	For Over 40' Installed Elevation, Add		1,300.62	
16114 1449	Underground feeder cable, copper with ground			
1450	Non-metallic sheathed cable, #14, 2 cndct, UF ugn'd fdr cable,	MF	905.57	
1750	Non-metallic sheathed cable, #14, 1 cndct, UF ugn'd fdr cable,	MF	453.92	
1800	Non-metallic sheathed cable, #12, 1 cndct, UF ugn'd fdr cable,	MF	557.82	
1850	Non-metallic sheathed cable, #10, 1 cndct, UF ugn'd fdr cable,	MF	650.90	
1900	Non-metallic sheathed cable, #8, 1 cndct, UF ugn'd fdr cable, CU	MF	831.81	
1950	Non-metallic sheathed cable, #6, 1 cndct, UF ugn'd fdr cable, CU	MF	1,031.04	
2000	Non-metallic sheathed cable, #4, 1 cndct, UF ugn'd fdr cable, CU	MF	1,367.67	
2100	Non-metallic sheathed cable, #2, 1 cndct, UF ugn'd fdr cable, CU	MF	1,704.94	
16115 0010	Shielded cable			
16115 0039	Copper, XLP shielding, 5 KV Conductor Pulled In Duct 133 Pct Insulation			
0040	Shielded cable, 5KV, #6, no splice/term, copper, XLP	MF	2,265.50	307.51
1891	For 14'-20' Installed Elevation, Add		128.95	
1892	For 21'-25' Installed Elevation, Add		257.89	
1893	For 26'-30' Installed Elevation, Add		322.36	
1894	For 31'-35' Installed Elevation, Add		386.84	
1895	For 36'-40' Installed Elevation, Add		451.31	
1896	For Over 40' Installed Elevation, Add		515.78	
0050	Shielded cable, 5KV, #4, no splice/term, copper, XLP	MF	2,445.60	293.68
1891	For 14'-20' Installed Elevation, Add		128.95	
1892	For 21'-25' Installed Elevation, Add		257.89	
1893	For 26'-30' Installed Elevation, Add		322.36	
1894	For 31'-35' Installed Elevation, Add		386.84	
1895	For 36'-40' Installed Elevation, Add		451.31	
1896	For Over 40' Installed Elevation, Add		515.78	
0100	Shielded cable, 5KV, #2, no splice/term, copper, XLP	MF	2,783.71	308.36
1891	For 14'-20' Installed Elevation, Add		141.84	
1892	For 21'-25' Installed Elevation, Add		283.68	
1893	For 26'-30' Installed Elevation, Add		354.60	
1894	For 31'-35' Installed Elevation, Add		425.52	
1895	For 36'-40' Installed Elevation, Add		496.44	
1896	For Over 40' Installed Elevation, Add		567.36	
0400	Shielded cable, 5KV, 1/0, no splice/term, copper, XLP	MF	3,297.24	339.64
1891	For 14'-20' Installed Elevation, Add		149.62	
1892	For 21'-25' Installed Elevation, Add		299.24	
1893	For 26'-30' Installed Elevation, Add		374.05	
1894	For 31'-35' Installed Elevation, Add		448.86	
1895	For 36'-40' Installed Elevation, Add		523.67	
1896	For Over 40' Installed Elevation, Add		598.48	
0600	Shielded cable, 5KV, 2/0, no splice/term, copper, XLP	MF	3,696.58	375.17
1891	For 14'-20' Installed Elevation, Add		157.60	
1892	For 21'-25' Installed Elevation, Add		315.20	
1893	For 26'-30' Installed Elevation, Add		394.00	
1894	For 31'-35' Installed Elevation, Add		472.80	
1895	For 36'-40' Installed Elevation, Add		551.60	
1896	For Over 40' Installed Elevation, Add		630.40	
0700	Shielded cable, 5KV, 3/0, no splice/term, copper, XLP	MF	4,424.46	391.05
1891	For 14'-20' Installed Elevation, Add		166.48	
1892	For 21'-25' Installed Elevation, Add		332.96	
1893	For 26'-30' Installed Elevation, Add		416.20	
1894	For 31'-35' Installed Elevation, Add		499.44	
1895	For 36'-40' Installed Elevation, Add		582.68	
1896	For Over 40' Installed Elevation, Add		665.92	
0800	Shielded cable, 5KV, 4/0, no splice/term, copper, XLP	MF	4,619.81	407.15
1891	For 14'-20' Installed Elevation, Add		177.30	
1892	For 21'-25' Installed Elevation, Add		354.60	
1893	For 26'-30' Installed Elevation, Add		443.25	
1894	For 31'-35' Installed Elevation, Add		531.90	
1895	For 36'-40' Installed Elevation, Add		620.55	
1896	For Over 40' Installed Elevation, Add		709.20	
1000	Shielded cable, 5KV, 250 MCM no splice/term, copper, XLP	MF	5,511.50	445.73

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1891	For 14'-20' Installed Elevation, Add		188.62	
1892	For 21'-25' Installed Elevation, Add		377.23	
1893	For 26'-30' Installed Elevation, Add		471.54	
1894	For 31'-35' Installed Elevation, Add		565.85	
1895	For 36'-40' Installed Elevation, Add		660.16	
1896	For Over 40' Installed Elevation, Add		754.47	
1200	Shielded cable, 5KV, 350 MCM no splice/term, copper, XLP	MF	6,649.02	555.80
1891	For 14'-20' Installed Elevation, Add		217.55	
1892	For 21'-25' Installed Elevation, Add		435.09	
1893	For 26'-30' Installed Elevation, Add		543.87	
1894	For 31'-35' Installed Elevation, Add		652.64	
1895	For 36'-40' Installed Elevation, Add		761.41	
1896	For Over 40' Installed Elevation, Add		870.18	
1400	Shielded cable, 5KV, 500 MCM no splice/term, copper, XLP	MF	7,976.29	608.14
1891	For 14'-20' Installed Elevation, Add		236.40	
1892	For 21'-25' Installed Elevation, Add		472.80	
1893	For 26'-30' Installed Elevation, Add		591.00	
1894	For 31'-35' Installed Elevation, Add		709.20	
1895	For 36'-40' Installed Elevation, Add		827.40	
1896	For Over 40' Installed Elevation, Add		945.60	
1450	Shielded cable, 5KV, 750 MCM no splice/term, copper, XLP	MF	9,789.90	748.10
1891	For 14'-20' Installed Elevation, Add		299.24	
1892	For 21'-25' Installed Elevation, Add		598.48	
1893	For 26'-30' Installed Elevation, Add		748.10	
1894	For 31'-35' Installed Elevation, Add		897.72	
1895	For 36'-40' Installed Elevation, Add		1,047.34	
1896	For Over 40' Installed Elevation, Add		1,196.96	
1500	Shielded cable, 5KV, 1000 MCM no splice/term, copper, XLP	MF	14,604.70	1,181.99
1891	For 14'-20' Installed Elevation, Add		472.80	
1892	For 21'-25' Installed Elevation, Add		945.60	
1893	For 26'-30' Installed Elevation, Add		1,182.00	
1894	For 31'-35' Installed Elevation, Add		1,418.40	
1895	For 36'-40' Installed Elevation, Add		1,654.80	
1896	For Over 40' Installed Elevation, Add		1,891.20	
16115 6009 Copper, XLP shielding, 5 KV, buried in trench				
Note: Buried In Trench, Excavation Not Included 133 Pct Insulation				
6010	Shielded cable, in trench, #6, no splice/term, copper, XLP, 5	MF	1,676.43	
6020	Shielded cable, in trench, #4, no splice/term, copper, XLP, 5	MF	1,856.53	
6030	Shielded cable, in trench, #2, no splice/term, copper, XLP, 5	MF	2,065.69	
6040	Shielded cable, in trench, 1/0, no splice/term, copper, XLP, 5	MF	2,582.24	
6050	Shielded cable, in trench, 2/0, no splice/term, copper, XLP, 5	MF	2,901.78	
6060	Shielded cable, in trench, 3/0, no splice/term, copper, XLP, 5	MF	3,605.96	
6070	Shielded cable, in trench, 4/0, no splice/term, copper, XLP, 5	MF	3,693.10	
6080	Shielded cable, in trench, 250 MCM no splice/term, copper,	MF	4,548.56	
6090	Shielded cable, in trench, 350 MCM no splice/term, copper,	MF	5,418.08	
6100	Shielded cable, in trench, 500 MCM no splice/term, copper,	MF	6,603.27	
16115 6199 Copper, XLP shielding, 5 KV, installed on poles Aerially 133 Pct Insulation				
6200	Shielded cable, on poles, #6, no splice/term, copper, XLP, 5 KV	MF	1,448.50	251.44
6210	Shielded cable, on poles, #4, no splice/term, copper, XLP, 5 KV	MF	1,665.65	246.57
6220	Shielded cable, on poles, #2, no splice/term, copper, XLP, 5 KV	MF	2,006.84	292.94
6230	Shielded cable, on poles, 1/0, no splice/term, copper, XLP, 5	MF	2,576.80	342.19
6240	Shielded cable, on poles, 2/0, no splice/term, copper, XLP, 5	MF	3,032.45	407.92
6250	Shielded cable, on poles, 3/0, no splice/term, copper, XLP, 5	MF	3,799.06	448.81
6260	Shielded cable, on poles, 4/0, no splice/term, copper, XLP, 5	MF	4,055.17	488.96
6270	Shielded cable, on poles, 250 MCM no splice/term, copper,	MF	5,153.84	604.39
6280	Shielded cable, on poles, 350 MCM no splice/term, copper,	MF	6,397.78	834.76
6290	Shielded cable, on poles, 500 MCM no splice/term, copper,	MF	8,087.97	1,008.53
16115 6299 Copper, XLP shielding, 15 KV				
16115 6299 Pulled in duct Conductor Pulled In Duct 133 Pct Insulation				
6300	Shielded cable, in duct, #1, no splice/term, copper, XLP, 15KV	MF	3,618.86	690.11
6310	Shielded cable, in duct, 1/0, no splice/term, copper, XLP, 15KV	MF	3,920.97	665.99
6320	Shielded cable, in duct, 2/0, no splice/term, copper, XLP, 15KV	MF	4,211.46	648.22
6330	Shielded cable, in duct, 3/0, no splice/term, copper, XLP, 15KV	MF	4,583.50	628.42
6340	Shielded cable, in duct, 4/0, no splice/term, copper, XLP, 15KV	MF	5,245.82	699.21
6350	Shielded cable, in duct, 250 MCM no splice/term, copper,	MF	5,842.30	690.75
6360	Shielded cable, in duct, 350 MCM no splice/term, copper,	MF	6,729.71	703.86

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6370	Shielded cable, in duct, 500 MCM no splice/term, copper,	MF	7,630.23	663.50
16115 6399	Direct burial			
Note: Conductor Buried In Trench 15KV, Excavation Not Included, 133 Pct Insulation				
6400	Shielded cable, dir burial, #1, no splc/term copper, XLP, 15KV	MF	2,961.07	
6410	Shielded cable, dir burial, 1/0, no splc/term copper, XLP, 15KV	MF	3,263.18	
6420	Shielded cable, dir burial, 2/0, no splc/term copper, XLP, 15KV	MF	3,553.67	
6430	Shielded cable, dir burial, 3/0, no splc/term copper, XLP, 15KV	MF	3,944.34	
6440	Shielded cable, dir burial, 4/0, no splc/term, copper, XLP, 15KV	MF	4,606.66	
6450	Shielded cable, dir burl, 250 MCM no splc/trm copper, XLP, 15KV	MF	5,233.48	
6460	Shielded cable, dir burl, 350 MCM no splc/trm copper, XLP, 15KV	MF	6,106.12	
6470	Shielded cable, dir burl, 500 MCM no splc/trm copper, XLP, 15KV	MF	7,035.30	
16115 6499	Conductor Installed On Poles , Aerially 133 Pct Insulation			
6500	Shielded cable, on poles, #1, no splice/term, copper, XLP, 15KV	MF	2,789.78	355.14
6510	Shielded cable, on poles, 1/0, no splc/trm copper, XLP, 15KV	MF	3,192.65	425.70
6520	Shielded cable, on poles, 2/0, no splc/trm copper, XLP, 15KV	MF	3,619.25	488.51
6530	Shielded cable, on poles, 3/0, no splc/trm copper, XLP, 15KV	MF	4,060.50	480.31
6540	Shielded cable, on poles, 4/0, no splc/trm copper, XLP, 15KV	MF	4,891.79	591.96
6550	Shielded cable, on poles, 250 MCM no splc/trm copper, XLP, 15KV	MF	5,622.21	622.50
6560	Shielded cable, on poles, 350 MCM no splc/trm copper, XLP, 15KV	MF	6,661.16	771.99
6570	Shielded cable, on poles, 500 MCM no splc/trm copper, XLP, 15KV	MF	7,861.86	816.81
16115 6599	Direct Burial			
Note: Conductor Buried In Trench 25KV, Excavation Not Included, 133 Pct Insulation.				
6600	Shielded cable, dir burial, 1/0, no splc/term copper, XLP, 25KV	MF	565.72	
6602	Shielded cable, dir burial, 2/0, no splc/term copper, XLP, 25KV	MF	600.97	
6604	Shielded cable, dir burial, 4/0, no splc/term copper, XLP, 25KV	MF	728.24	
6606	Shielded cable, dir burl, 250 MCM no splc/trm copper, XLP, 25KV	MF	862.44	
6608	Shielded cable, dir burl, 350 MCM no splc/trm copper, XLP, 25KV	MF	1,010.51	
6610	Shielded cable, dir burl, 500 MCM no splc/trm copper, XLP, 25KV	MF	1,160.99	
16115 6999	Copper, XLP shielding, 35 KV			
7000	Shielded cable, dir burial, 1/0, no splc/term copper, XLP, 35KV	MF	589.35	
7020	Shielded cable, dir burial, 2/0, no splc/term copper, XLP, 35KV	MF	666.76	
7030	Shielded cable, dir burial, 4/0, no splc/term copper, XLP, 35KV	MF	810.15	
7040	Shielded cable, dir burl, 250 MCM no splc/trm copper, XLP, 35KV	MF	922.60	
7050	Shielded cable, dir burl, 350 MCM no splc/trm copper, XLP, 35KV	MF	1,102.90	
7060	Shielded cable, dir burl, 500 MCM no splc/trm copper, XLP, 35KV	MF	1,275.36	
16116 4000	Mneral Insulated Cable			
4001	Mneral insulated cable, 600 vol t, 1 conductor, #12	CLF	316.14	
4002	Mneral insulated cable, 600 vol t, 1 conductor, #10	CLF	328.92	
4003	Mneral insulated cable, 600 vol t, 1 conductor, #8	CLF	371.07	
4004	Mneral insulated cable, 600 vol t, 1 conductor, #6	CLF	414.59	
4005	Mneral insulated cable, 600 vol t, 1 conductor, #4	CLF	569.86	
4006	Mneral insulated cable, 600 vol t, 1 conductor, #2	CLF	752.66	
4007	Mneral insulated cable, 600 vol t, 1 conductor, #1	CLF	858.76	
4008	Mneral insulated cable, 600 vol t, 1 conductor, 1/0	CLF	982.46	
4009	Mneral insulated cable, 600 vol t, 1 conductor, 2/0	CLF	1,170.25	
4010	Mneral insulated cable, 600 vol t, 1 conductor, 3/0	CLF	1,375.66	
4011	Mneral insulated cable, 600 vol t, 1 conductor, 4/0	CLF	1,583.93	
4012	Mneral insulated cable, 600 vol t, 1 conductor, 250 kcmil	CLF	1,787.28	
4013	Mneral insulated cable, 600 vol t, 1 conductor, 350 kcmil	CLF	2,000.84	
4014	Mneral insulated cable, 600 vol t, 1 conductor, 500 kcmil	CLF	2,494.68	
4015	Mneral insulated cable, 600 vol t, 2 conductor, #12	CLF	495.93	
4016	Mneral insulated cable, 600 vol t, 2 conductor, #10	CLF	598.91	
4017	Mneral insulated cable, 600 vol t, 2 conductor, #8	CLF	741.04	
4018	Mneral insulated cable, 600 vol t, 2 conductor, #6	CLF	934.29	
4019	Mneral insulated cable, 600 vol t, 2 conductor, #4	CLF	1,226.47	
4020	Mneral insulated cable, 600 vol t, 3 conductor, #12	CLF	575.67	
4021	Mneral insulated cable, 600 vol t, 3 conductor, #10	CLF	711.99	
4022	Mneral insulated cable, 600 vol t, 3 conductor, #8	CLF	858.76	
4023	Mneral insulated cable, 600 vol t, 3 conductor, #6	CLF	1,104.47	
4024	Mneral insulated cable, 600 vol t, 3 conductor, #4	CLF	1,433.76	
4025	Mneral insulated cable, 600 vol t, 4 conductor, #12	CLF	657.01	
4026	Mneral insulated cable, 600 vol t, 4 conductor, #10	CLF	775.90	
4027	Mneral insulated cable, 600 vol t, 4 conductor, #8	CLF	1,005.70	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4028	Mneral insulated cable, 600 vol t, 4 conductor, #6	CLF	1,259.46	
4029	Mneral insulated cable, 600 vol t, 7 conductor, #12	CLF	828.19	
4030	Mneral insulated cable, 600 vol t, 7 conductor, #10	CLF	1,028.94	
4031	MI. terminations, 600 V, 1 con ductor, #12	EA	13.96	
4032	MI. terminations, 600 V, 1 con ductor, #10	EA	14.20	
4033	MI. terminations, 600 volt, 1 conductor, #8	EA	14.39	
4034	MI. terminations, 600 volt, 1 conductor, #6	EA	14.82	
4035	MI. terminations, 600 volt, 1 conductor, #4	EA	15.25	
4036	MI. terminations, 600 volt, 1 conductor, #2	EA	20.57	
4037	MI. terminations, 600 volt, 1 conductor, #1	EA	21.04	
4038	MI. terminations, 600 V, 1 con ductor, 1/0	EA	21.44	
4039	MI. terminations, 600 V, 1 con ductor, 2/0	EA	21.89	
4040	MI. terminations, 600 V, 1 con ductor, 3/0	EA	22.59	
4041	MI. terminations, 600 V, 1 con ductor, 4/0	EA	40.82	
4042	Mneral insul cable, MI. termn, 600 V, 1 conductor, 250 kcmil	EA	40.82	
4043	MI. termn, 600 V, 1 conductor, 350 kcmil	EA	103.57	
4044	MI. termn, 600 V, 1 conductor, 500 kcmil	EA	103.57	
4045	MI. terminations, 600 V, 2 con ductor, #12	EA	15.86	
4046	MI. terminations, 600 V, 2 con ductor, #10	EA	19.25	
4047	MI. terminations, 600 volt, 2 conductor, #8	EA	19.43	
4048	MI. terminations, 600 volt, 2 conductor, #6	EA	19.93	
4049	MI. terminations, 600 volt, 2 conductor, #4	EA	38.64	
4050	MI. terminations, 600 V, 3 con ductor, #12	EA	18.13	
4051	MI. terminations, 600 V, 3 con ductor, #10	EA	21.27	
4052	MI. terminations, 600 volt, 3 conductor, #8	EA	21.64	
4053	MI. terminations, 600 volt, 3 conductor, #6	EA	22.21	
4054	MI. terminations, 600 volt, 3 conductor, #4	EA	40.25	
4055	MI. terminations, 600 V, 4 con ductor, #12	EA	23.63	
4056	MI. terminations, 600 V, 4 con ductor, #10	EA	23.98	
4057	MI. terminations, 600 volt, 4 conductor, #8	EA	24.36	
4058	MI. terminations, 600 volt, 4 conductor, #6	EA	42.57	
4059	MI. terminations, 600 V, 7 con ductor, #12	EA	30.35	
4060	MI. terminations, 600 V, 7 con ductor, #10	EA	49.00	
4061	MI. terminations, crimping too l, plier type	EA	66.23	
4062	Mneral insulated cable, MI. te rminations, stripping tool	EA	98.77	
4063	Mneral insulated cable, MI. te rminations, hand vise	EA	42.99	
16116 7550 Modular Flexible Wiring System				
7551	std selor cable, 3 conductor, 1 5' long	EA	45.63	
7552	Modular flexible wiring system, conversion module	EA	18.49	
7553	Modular flexible wiring system cable set, 3 conductor, 15' long	EA	18.91	
7554	switching assy, 3 conductor, 10 ' long	EA	35.39	
16117 0010 Special wires & fittings				
16117 0099 Fixture TFFN 600 volt 90_C stranded				
0100	Special wires & fittings, stranded, #18, fixture TFFN, 600	MF	278.41	63.65
1891	For 14'-20' Installed Elevation, Add		21.82	
1892	For 21'-25' Installed Elevation, Add		43.64	
1893	For 26'-30' Installed Elevation, Add		54.56	
1894	For 31'-35' Installed Elevation, Add		65.47	
1895	For 36'-40' Installed Elevation, Add		76.38	
1896	For Over 40' Installed Elevation, Add		87.29	
0150	Special wires & fittings, 600 V 90 deg C stranded, #16, fixture	MF	296.07	63.65
1891	For 14'-20' Installed Elevation, Add		21.82	
1892	For 21'-25' Installed Elevation, Add		43.64	
1893	For 26'-30' Installed Elevation, Add		54.56	
1894	For 31'-35' Installed Elevation, Add		65.47	
1895	For 36'-40' Installed Elevation, Add		76.38	
1896	For Over 40' Installed Elevation, Add		87.29	
16117 1099 Sound, shielded with drain				
Note: 1 Pair, Stranded Or Solid, Copper, PVC Jacketed, Sizes As Indicated On Line Items.				
1100	Special wires & fittings, #22-2 conductor, sound, shielded with	MF	563.75	103.40
1891	For 14'-20' Installed Elevation, Add		35.46	
1892	For 21'-25' Installed Elevation, Add		70.92	
1893	For 26'-30' Installed Elevation, Add		88.65	
1894	For 31'-35' Installed Elevation, Add		106.38	
1895	For 36'-40' Installed Elevation, Add		124.11	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1896	For Over 40' Installed Elevation, Add		141.84	
1210	Special wires & fittings, #20-2 conductor, sound, shielded with	MF	1,799.24	240.71
1891	For 14'-20' Installed Elevation, Add		80.24	
1892	For 21'-25' Installed Elevation, Add		160.48	
1893	For 26'-30' Installed Elevation, Add		200.60	
1894	For 31'-35' Installed Elevation, Add		240.72	
1895	For 36'-40' Installed Elevation, Add		280.84	
1896	For Over 40' Installed Elevation, Add		320.96	
1220	Special wires & fittings, #14-2 conductor, sound, shielded with	MF	2,374.06	240.71
1891	For 14'-20' Installed Elevation, Add		80.24	
1892	For 21'-25' Installed Elevation, Add		160.48	
1893	For 26'-30' Installed Elevation, Add		200.60	
1894	For 31'-35' Installed Elevation, Add		240.72	
1895	For 36'-40' Installed Elevation, Add		280.84	
1896	For Over 40' Installed Elevation, Add		320.96	
1225	Special wires & fittings, #18-6 conductor, sound, shielded with	MF	1,076.35	138.11
1891	For 14'-20' Installed Elevation, Add		46.05	
1892	For 21'-25' Installed Elevation, Add		92.10	
1893	For 26'-30' Installed Elevation, Add		115.13	
1894	For 31'-35' Installed Elevation, Add		138.15	
1895	For 36'-40' Installed Elevation, Add		161.18	
1896	For Over 40' Installed Elevation, Add		184.20	
1230	Special wires & fittings, #16-3 conductor, sound, shielded with	MF	558.27	157.15
1891	For 14'-20' Installed Elevation, Add		0.05	
1892	For 21'-25' Installed Elevation, Add		0.11	
1893	For 26'-30' Installed Elevation, Add		0.13	
1894	For 31'-35' Installed Elevation, Add		0.16	
1895	For 36'-40' Installed Elevation, Add		0.19	
1896	For Over 40' Installed Elevation, Add		0.21	
16117 4000 Coaxial cable, copper cov aluminum center core				
Note: Aluminum Center Core, Corrugated Steel Armr Jacket				
4020	Coaxial cable, 3/4" dia, trunk, dir burial, cu covered al core	MF	1,804.10	381.22
1891	For 14'-20' Installed Elevation, Add		124.34	
1892	For 21'-25' Installed Elevation, Add		248.68	
1893	For 26'-30' Installed Elevation, Add		310.85	
1894	For 31'-35' Installed Elevation, Add		373.02	
1895	For 36'-40' Installed Elevation, Add		435.19	
1896	For Over 40' Installed Elevation, Add		497.36	
4040	Coaxial cable, 3/8" dia, distribution, dir burial, cu	MF	744.66	150.25
1891	For 14'-20' Installed Elevation, Add		51.81	
1892	For 21'-25' Installed Elevation, Add		103.62	
1893	For 26'-30' Installed Elevation, Add		129.52	
1894	For 31'-35' Installed Elevation, Add		155.42	
1895	For 36'-40' Installed Elevation, Add		181.33	
1896	For Over 40' Installed Elevation, Add		207.23	
4060	Coaxial cable, 1/2" dia, distribution, dir burial, cu	MF	1,467.66	293.07
1891	For 14'-20' Installed Elevation, Add		88.81	
1892	For 21'-25' Installed Elevation, Add		177.63	
1893	For 26'-30' Installed Elevation, Add		222.03	
1894	For 31'-35' Installed Elevation, Add		266.44	
1895	For 36'-40' Installed Elevation, Add		310.85	
1896	For Over 40' Installed Elevation, Add		355.25	
4080	Coaxial cable, 1/4" dia, cable drop, dir burial, cu covered al	MF	930.71	150.25
1891	For 14'-20' Installed Elevation, Add		51.81	
1892	For 21'-25' Installed Elevation, Add		103.62	
1893	For 26'-30' Installed Elevation, Add		129.52	
1894	For 31'-35' Installed Elevation, Add		155.42	
1895	For 36'-40' Installed Elevation, Add		181.33	
1896	For Over 40' Installed Elevation, Add		207.23	
4100	Coaxial cable, 1/4" dia, cable drop, in conduit, cu covered al	MF	2,247.35	272.82
1891	For 14'-20' Installed Elevation, Add		80.24	
1892	For 21'-25' Installed Elevation, Add		160.48	
1893	For 26'-30' Installed Elevation, Add		200.60	
1894	For 31'-35' Installed Elevation, Add		240.72	
1895	For 36'-40' Installed Elevation, Add		280.84	
1896	For Over 40' Installed Elevation, Add		320.96	
16118 0010 Hspital Grade MC Cable 600V Copper, Steel Clad				
0010	#14 Wire 2 Conductor	MF	1,464.27	
0020	#14 Wire 3 Conductor	MF	1,681.20	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0030	#14 Wire 4 Conductors	MF	1,896.70	
0120	#12 Wire 2 Conductors	MF	1,522.43	
0130	#12 Wire 3 Conductors	MF	1,739.36	
0140	#12 Wire 4 Conductors	MF	1,954.85	
0220	#10 Wire 2 Conductors	MF	1,580.58	
0230	#10 Wire 3 Conductors	MF	1,797.52	
0240	#10 Wire 4 Conductors	MF	2,013.01	
0320	#8 Wire 2 Conductors	MF	1,739.36	
0330	#8 Wire 3 Conductors	MF	1,954.85	
0340	#8 Wire 4 Conductors	MF	2,173.19	
16119 0010	Wire			
16119 0019	600 volt, type THW			
16119 0019	Copper, solid			
0020	Wire, 600 volt, type THW copper, solid, #14	MF	265.86	107.45
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	
1296	For Over 40' Installed Elevation, Add		87.29	
0030	Wire, 600 volt, type THW copper, solid, #12	MF	328.77	144.75
1291	For 14'-20' Installed Elevation, Add		25.79	
1292	For 21'-25' Installed Elevation, Add		51.58	
1293	For 26'-30' Installed Elevation, Add		64.47	
1294	For 31'-35' Installed Elevation, Add		77.37	
1295	For 36'-40' Installed Elevation, Add		90.26	
1296	For Over 40' Installed Elevation, Add		103.16	
0040	Wire, 600 volt, type THW copper, solid, #10	MF	393.49	133.01
1291	For 14'-20' Installed Elevation, Add		28.37	
1292	For 21'-25' Installed Elevation, Add		56.74	
1293	For 26'-30' Installed Elevation, Add		70.92	
1294	For 31'-35' Installed Elevation, Add		85.10	
1295	For 36'-40' Installed Elevation, Add		99.29	
1296	For Over 40' Installed Elevation, Add		113.47	
16119 0049	Copper, stranded			
0050	Wire, 600 volt, type THW copper, stranded #14	MF	282.13	109.11
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	
1296	For Over 40' Installed Elevation, Add		87.29	
0100	Wire, 600 volt, type THW copper, stranded, #12	MF	333.42	149.46
1291	For 14'-20' Installed Elevation, Add		25.79	
1292	For 21'-25' Installed Elevation, Add		51.58	
1293	For 26'-30' Installed Elevation, Add		64.47	
1294	For 31'-35' Installed Elevation, Add		77.37	
1295	For 36'-40' Installed Elevation, Add		90.26	
1296	For Over 40' Installed Elevation, Add		103.16	
0120	Wire, 600 volt, type THW copper, stranded, #10	MF	399.88	139.46
1291	For 14'-20' Installed Elevation, Add		28.37	
1292	For 21'-25' Installed Elevation, Add		56.74	
1293	For 26'-30' Installed Elevation, Add		70.92	
1294	For 31'-35' Installed Elevation, Add		85.10	
1295	For 36'-40' Installed Elevation, Add		99.29	
1296	For Over 40' Installed Elevation, Add		113.47	
0140	Wire, 600 volt, type THW copper, stranded, #8	MF	561.43	177.30
1291	For 14'-20' Installed Elevation, Add		35.46	
1292	For 21'-25' Installed Elevation, Add		70.92	
1293	For 26'-30' Installed Elevation, Add		88.65	
1294	For 31'-35' Installed Elevation, Add		106.38	
1295	For 36'-40' Installed Elevation, Add		124.11	
1296	For Over 40' Installed Elevation, Add		141.84	
0160	Wire, 600 volt, type THW copper, stranded, #6	MF	738.81	280.38
1291	For 14'-20' Installed Elevation, Add		43.67	
1292	For 21'-25' Installed Elevation, Add		87.34	
1293	For 26'-30' Installed Elevation, Add		109.18	
1294	For 31'-35' Installed Elevation, Add		131.01	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
	1295 For 36'-40' Installed Elevation, Add		152.85	
	1296 For Over 40' Installed Elevation, Add		174.68	
0180	Wire, 600 volt, type THW copper, stranded, #4	MF	994.63	284.18
	1291 For 14'-20' Installed Elevation, Add		53.57	
	1292 For 21'-25' Installed Elevation, Add		107.13	
	1293 For 26'-30' Installed Elevation, Add		133.91	
	1294 For 31'-35' Installed Elevation, Add		160.70	
	1295 For 36'-40' Installed Elevation, Add		187.48	
	1296 For Over 40' Installed Elevation, Add		214.26	
0220	Wire, 600 volt, type THW copper, stranded, #2	MF	1,374.62	275.98
	1291 For 14'-20' Installed Elevation, Add		63.10	
	1292 For 21'-25' Installed Elevation, Add		126.19	
	1293 For 26'-30' Installed Elevation, Add		157.74	
	1294 For 31'-35' Installed Elevation, Add		189.29	
	1295 For 36'-40' Installed Elevation, Add		220.84	
	1296 For Over 40' Installed Elevation, Add		252.38	
0240	Wire, 600 volt, type THW copper, stranded, #1	MF	1,696.87	271.62
	1291 For 14'-20' Installed Elevation, Add		70.92	
	1292 For 21'-25' Installed Elevation, Add		141.84	
	1293 For 26'-30' Installed Elevation, Add		177.30	
	1294 For 31'-35' Installed Elevation, Add		212.76	
	1295 For 36'-40' Installed Elevation, Add		248.22	
	1296 For Over 40' Installed Elevation, Add		283.68	
0260	Wire, 600 volt, type THW copper, stranded, 1/0	MF	2,003.13	483.57
	1291 For 14'-20' Installed Elevation, Add		85.86	
	1292 For 21'-25' Installed Elevation, Add		171.72	
	1293 For 26'-30' Installed Elevation, Add		214.65	
	1294 For 31'-35' Installed Elevation, Add		257.58	
	1295 For 36'-40' Installed Elevation, Add		300.51	
	1296 For Over 40' Installed Elevation, Add		343.44	
0280	Wire, 600 volt, type THW copper, stranded, 2/0	MF	2,371.22	491.83
	1291 For 14'-20' Installed Elevation, Add		97.69	
	1292 For 21'-25' Installed Elevation, Add		195.37	
	1293 For 26'-30' Installed Elevation, Add		244.22	
	1294 For 31'-35' Installed Elevation, Add		293.06	
	1295 For 36'-40' Installed Elevation, Add		341.90	
	1296 For Over 40' Installed Elevation, Add		390.74	
0300	Wire, 600 volt, type THW copper, stranded, 3/0	MF	2,887.48	488.29
	1291 For 14'-20' Installed Elevation, Add		113.29	
	1292 For 21'-25' Installed Elevation, Add		226.58	
	1293 For 26'-30' Installed Elevation, Add		283.23	
	1294 For 31'-35' Installed Elevation, Add		339.87	
	1295 For 36'-40' Installed Elevation, Add		396.52	
	1296 For Over 40' Installed Elevation, Add		453.16	
0350	Wire, 600 volt, type THW copper, stranded, 4/0	MF	3,532.04	653.88
	1291 For 14'-20' Installed Elevation, Add		128.95	
	1292 For 21'-25' Installed Elevation, Add		257.89	
	1293 For 26'-30' Installed Elevation, Add		322.36	
	1294 For 31'-35' Installed Elevation, Add		386.84	
	1295 For 36'-40' Installed Elevation, Add		451.31	
	1296 For Over 40' Installed Elevation, Add		515.78	
0400	Wire, 600 volt, type THW copper, stranded, 250 MCM	MF	4,009.58	646.61
	1291 For 14'-20' Installed Elevation, Add		141.84	
	1292 For 21'-25' Installed Elevation, Add		283.68	
	1293 For 26'-30' Installed Elevation, Add		354.60	
	1294 For 31'-35' Installed Elevation, Add		425.52	
	1295 For 36'-40' Installed Elevation, Add		496.44	
	1296 For Over 40' Installed Elevation, Add		567.36	
0420	Wire, 600 volt, type THW copper, stranded, 300 MCM	MF	4,621.88	638.56
	1291 For 14'-20' Installed Elevation, Add		149.62	
	1292 For 21'-25' Installed Elevation, Add		299.24	
	1293 For 26'-30' Installed Elevation, Add		374.05	
	1294 For 31'-35' Installed Elevation, Add		448.86	
	1295 For 36'-40' Installed Elevation, Add		523.67	
	1296 For Over 40' Installed Elevation, Add		598.48	
0450	Wire, 600 volt, type THW copper, stranded, 350 MCM	MF	5,050.27	826.96
	1291 For 14'-20' Installed Elevation, Add		157.60	
	1292 For 21'-25' Installed Elevation, Add		315.20	
	1293 For 26'-30' Installed Elevation, Add		394.00	
	1294 For 31'-35' Installed Elevation, Add		472.80	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
	1295 For 36'-40' Installed Elevation, Add		551.60	
	1296 For Over 40' Installed Elevation, Add		630.40	
0480	Wire, 600 volt, type THW copper, stranded, 400 MCM	MF	5,847.86	826.86
	1291 For 14'-20' Installed Elevation, Add		166.48	
	1292 For 21'-25' Installed Elevation, Add		332.96	
	1293 For 26'-30' Installed Elevation, Add		416.20	
	1294 For 31'-35' Installed Elevation, Add		499.44	
	1295 For 36'-40' Installed Elevation, Add		582.68	
	1296 For Over 40' Installed Elevation, Add		665.92	
0490	Wire, 600 volt, type THW copper, stranded, 500 MCM	MF	6,653.25	799.09
	1291 For 14'-20' Installed Elevation, Add		177.30	
	1292 For 21'-25' Installed Elevation, Add		354.60	
	1293 For 26'-30' Installed Elevation, Add		443.25	
	1294 For 31'-35' Installed Elevation, Add		531.90	
	1295 For 36'-40' Installed Elevation, Add		620.55	
	1296 For Over 40' Installed Elevation, Add		709.20	
16119 0529	Aluminum stranded			
0530	Wire, 600 volt, type THW aluminum stranded, #8	MF	445.34	116.63
	1291 For 14'-20' Installed Elevation, Add		31.52	
	1292 For 21'-25' Installed Elevation, Add		63.04	
	1293 For 26'-30' Installed Elevation, Add		78.80	
	1294 For 31'-35' Installed Elevation, Add		94.56	
	1295 For 36'-40' Installed Elevation, Add		110.32	
	1296 For Over 40' Installed Elevation, Add		126.08	
0540	Wire, 600 volt, type THW aluminum stranded, #6	MF	517.28	160.46
	1291 For 14'-20' Installed Elevation, Add		35.46	
	1292 For 21'-25' Installed Elevation, Add		70.92	
	1293 For 26'-30' Installed Elevation, Add		88.65	
	1294 For 31'-35' Installed Elevation, Add		106.38	
	1295 For 36'-40' Installed Elevation, Add		124.11	
	1296 For Over 40' Installed Elevation, Add		141.84	
0560	Wire, 600 volt, type THW aluminum stranded, #4	MF	641.79	150.21
	1291 For 14'-20' Installed Elevation, Add		43.67	
	1292 For 21'-25' Installed Elevation, Add		87.34	
	1293 For 26'-30' Installed Elevation, Add		109.18	
	1294 For 31'-35' Installed Elevation, Add		131.01	
	1295 For 36'-40' Installed Elevation, Add		152.85	
	1296 For Over 40' Installed Elevation, Add		174.68	
0580	Wire, 600 volt, type THW aluminum stranded, #2	MF	811.62	200.99
	1291 For 14'-20' Installed Elevation, Add		53.57	
	1292 For 21'-25' Installed Elevation, Add		107.13	
	1293 For 26'-30' Installed Elevation, Add		133.91	
	1294 For 31'-35' Installed Elevation, Add		160.70	
	1295 For 36'-40' Installed Elevation, Add		187.48	
	1296 For Over 40' Installed Elevation, Add		214.26	
0600	Wire, 600 volt, type THW aluminum stranded, #1	MF	1,037.65	207.62
	1291 For 14'-20' Installed Elevation, Add		63.10	
	1292 For 21'-25' Installed Elevation, Add		126.19	
	1293 For 26'-30' Installed Elevation, Add		157.74	
	1294 For 31'-35' Installed Elevation, Add		189.29	
	1295 For 36'-40' Installed Elevation, Add		220.84	
	1296 For Over 40' Installed Elevation, Add		252.38	
0620	Wire, 600 volt, type THW aluminum stranded, 1/0	MF	1,173.99	252.76
	1291 For 14'-20' Installed Elevation, Add		70.92	
	1292 For 21'-25' Installed Elevation, Add		141.84	
	1293 For 26'-30' Installed Elevation, Add		177.30	
	1294 For 31'-35' Installed Elevation, Add		212.76	
	1295 For 36'-40' Installed Elevation, Add		248.22	
	1296 For Over 40' Installed Elevation, Add		283.68	
0640	Wire, 600 volt, type THW aluminum stranded, 2/0	MF	1,334.12	243.93
	1291 For 14'-20' Installed Elevation, Add		78.80	
	1292 For 21'-25' Installed Elevation, Add		157.60	
	1293 For 26'-30' Installed Elevation, Add		197.00	
	1294 For 31'-35' Installed Elevation, Add		236.40	
	1295 For 36'-40' Installed Elevation, Add		275.80	
	1296 For Over 40' Installed Elevation, Add		315.20	
0680	Wire, 600 volt, type THW aluminum stranded, 3/0	MF	1,544.16	295.17
	1291 For 14'-20' Installed Elevation, Add		85.86	
	1292 For 21'-25' Installed Elevation, Add		171.72	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1293	For 26'-30' Installed Elevation, Add		214.65	
1294	For 31'-35' Installed Elevation, Add		257.58	
1295	For 36'-40' Installed Elevation, Add		300.51	
1296	For Over 40' Installed Elevation, Add		343.44	
0700	Wire, 600 volt, type THW, aluminum, stranded, 4/0	MF	1,686.63	269.00
1291	For 14'-20' Installed Elevation, Add		91.39	
1292	For 21'-25' Installed Elevation, Add		182.78	
1293	For 26'-30' Installed Elevation, Add		228.48	
1294	For 31'-35' Installed Elevation, Add		274.18	
1295	For 36'-40' Installed Elevation, Add		319.87	
1296	For Over 40' Installed Elevation, Add		365.57	
0720	Wire, 600 volt, type THW, aluminum, stranded, 250 MCM	MF	1,906.43	256.91
1291	For 14'-20' Installed Elevation, Add		97.69	
1292	For 21'-25' Installed Elevation, Add		195.37	
1293	For 26'-30' Installed Elevation, Add		244.22	
1294	For 31'-35' Installed Elevation, Add		293.06	
1295	For 36'-40' Installed Elevation, Add		341.90	
1296	For Over 40' Installed Elevation, Add		390.74	
0740	Wire, 600 volt, type THW, aluminum, stranded, 300 MCM	MF	2,315.65	303.68
1291	For 14'-20' Installed Elevation, Add		104.91	
1292	For 21'-25' Installed Elevation, Add		209.82	
1293	For 26'-30' Installed Elevation, Add		262.28	
1294	For 31'-35' Installed Elevation, Add		314.73	
1295	For 36'-40' Installed Elevation, Add		367.19	
1296	For Over 40' Installed Elevation, Add		419.64	
0760	Wire, 600 volt, type THW, aluminum, stranded, 350 MCM	MF	2,445.93	378.25
1291	For 14'-20' Installed Elevation, Add		113.29	
1292	For 21'-25' Installed Elevation, Add		226.58	
1293	For 26'-30' Installed Elevation, Add		283.23	
1294	For 31'-35' Installed Elevation, Add		339.87	
1295	For 36'-40' Installed Elevation, Add		396.52	
1296	For Over 40' Installed Elevation, Add		453.16	
0780	Wire, 600 volt, type THW, aluminum, stranded, 400 MCM	MF	2,734.47	338.50
1291	For 14'-20' Installed Elevation, Add		123.55	
1292	For 21'-25' Installed Elevation, Add		247.11	
1293	For 26'-30' Installed Elevation, Add		308.89	
1294	For 31'-35' Installed Elevation, Add		370.66	
1295	For 36'-40' Installed Elevation, Add		432.44	
1296	For Over 40' Installed Elevation, Add		494.22	
0800	Wire, 600 volt, type THW, aluminum, stranded, 500 MCM	MF	3,103.25	351.76
1291	For 14'-20' Installed Elevation, Add		141.84	
1292	For 21'-25' Installed Elevation, Add		283.68	
1293	For 26'-30' Installed Elevation, Add		354.60	
1294	For 31'-35' Installed Elevation, Add		425.52	
1295	For 36'-40' Installed Elevation, Add		496.44	
1296	For Over 40' Installed Elevation, Add		567.36	
0802	750 MCM Type THW 600V A1, Sgl Strd, P1 in Cnd	MF	4,799.15	552.50
1291	For 14'-20' Installed Elevation, Add		212.66	
1292	For 21'-25' Installed Elevation, Add		425.33	
1293	For 26'-30' Installed Elevation, Add		531.66	
1294	For 31'-35' Installed Elevation, Add		637.99	
1295	For 36'-40' Installed Elevation, Add		744.32	
1296	For Over 40' Installed Elevation, Add		850.65	
16119 0919	600 volt, type THW-THN			
16119 0919	Copper, solid			
0920	Wire, 600 volt, type THW-THN, copper, solid, #14	MF	267.02	58.94
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	
1296	For Over 40' Installed Elevation, Add		87.29	
16119 0999	Copper, stranded			
1000	Wire, 600 volt, type THW-THN, copper, stranded, #14	MF	276.32	141.38
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1200	1296 For Over 40' Installed Elevation, Add Wire, 600 volt, type THWN-THHN, copper, stranded, #12	MF	87.29 342.13	148.36
	1291 For 14'-20' Installed Elevation, Add		25.79	
	1292 For 21'-25' Installed Elevation, Add		51.58	
	1293 For 26'-30' Installed Elevation, Add		64.47	
	1294 For 31'-35' Installed Elevation, Add		77.37	
	1295 For 36'-40' Installed Elevation, Add		90.26	
	1296 For Over 40' Installed Elevation, Add		103.16	
1250	Wire, 600 volt, type THWN-THHN, copper, stranded, #10	MF	422.53	142.23
	1291 For 14'-20' Installed Elevation, Add		28.37	
	1292 For 21'-25' Installed Elevation, Add		56.74	
	1293 For 26'-30' Installed Elevation, Add		70.92	
	1294 For 31'-35' Installed Elevation, Add		85.10	
	1295 For 36'-40' Installed Elevation, Add		99.29	
	1296 For Over 40' Installed Elevation, Add		113.47	
1300	Wire, 600 volt, type THWN-THHN, copper, stranded, #8	MF	571.31	202.19
	1291 For 14'-20' Installed Elevation, Add		35.46	
	1292 For 21'-25' Installed Elevation, Add		70.92	
	1293 For 26'-30' Installed Elevation, Add		88.65	
	1294 For 31'-35' Installed Elevation, Add		106.38	
	1295 For 36'-40' Installed Elevation, Add		124.11	
	1296 For Over 40' Installed Elevation, Add		141.84	
1350	Wire, 600 volt, type THWN-THHN, copper, stranded, #6	MF	738.81	270.42
	1291 For 14'-20' Installed Elevation, Add		43.67	
	1292 For 21'-25' Installed Elevation, Add		87.34	
	1293 For 26'-30' Installed Elevation, Add		109.18	
	1294 For 31'-35' Installed Elevation, Add		131.01	
	1295 For 36'-40' Installed Elevation, Add		152.85	
	1296 For Over 40' Installed Elevation, Add		174.68	
1400	Wire, 600 volt, type THWN-THHN, copper, stranded, #4	MF	1,000.44	270.14
	1291 For 14'-20' Installed Elevation, Add		53.57	
	1292 For 21'-25' Installed Elevation, Add		107.13	
	1293 For 26'-30' Installed Elevation, Add		133.91	
	1294 For 31'-35' Installed Elevation, Add		160.70	
	1295 For 36'-40' Installed Elevation, Add		187.48	
	1296 For Over 40' Installed Elevation, Add		214.26	
1450	Wire, 600 volt, type THWN-THHN, copper, stranded, #3	MF	1,171.58	323.89
	1291 For 14'-20' Installed Elevation, Add		56.74	
	1292 For 21'-25' Installed Elevation, Add		113.47	
	1293 For 26'-30' Installed Elevation, Add		141.84	
	1294 For 31'-35' Installed Elevation, Add		170.21	
	1295 For 36'-40' Installed Elevation, Add		198.58	
	1296 For Over 40' Installed Elevation, Add		226.94	
1500	Wire, 600 volt, type THWN-THHN, copper, stranded, #2	MF	1,386.24	382.97
	1291 For 14'-20' Installed Elevation, Add		63.10	
	1292 For 21'-25' Installed Elevation, Add		126.19	
	1293 For 26'-30' Installed Elevation, Add		157.74	
	1294 For 31'-35' Installed Elevation, Add		189.29	
	1295 For 36'-40' Installed Elevation, Add		220.84	
	1296 For Over 40' Installed Elevation, Add		252.38	
1550	Wire, 600 volt, type THWN-THHN, copper, stranded, #1	MF	1,731.73	375.52
	1291 For 14'-20' Installed Elevation, Add		70.92	
	1292 For 21'-25' Installed Elevation, Add		141.84	
	1293 For 26'-30' Installed Elevation, Add		177.30	
	1294 For 31'-35' Installed Elevation, Add		212.76	
	1295 For 36'-40' Installed Elevation, Add		248.22	
	1296 For Over 40' Installed Elevation, Add		283.68	
1600	Wire, 600 volt, type THWN-THHN, copper, stranded, 1/0	MF	2,078.66	520.59
	1291 For 14'-20' Installed Elevation, Add		85.86	
	1292 For 21'-25' Installed Elevation, Add		171.72	
	1293 For 26'-30' Installed Elevation, Add		214.65	
	1294 For 31'-35' Installed Elevation, Add		257.58	
	1295 For 36'-40' Installed Elevation, Add		300.51	
	1296 For Over 40' Installed Elevation, Add		343.44	
1650	Wire, 600 volt, type THWN-THHN, copper, stranded, 2/0	MF	2,406.08	516.12
	1291 For 14'-20' Installed Elevation, Add		97.69	
	1292 For 21'-25' Installed Elevation, Add		195.37	
	1293 For 26'-30' Installed Elevation, Add		244.22	
	1294 For 31'-35' Installed Elevation, Add		293.06	
	1295 For 36'-40' Installed Elevation, Add		341.90	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1296	<i>For Over 40' Installed Elevation, Add</i>		390.74	
1700	Wire, 600 volt, type THWN-THHN, copper, stranded, 3/0	MF	2,957.19	627.75
1291	<i>For 14'-20' Installed Elevation, Add</i>		113.29	
1292	<i>For 21'-25' Installed Elevation, Add</i>		226.58	
1293	<i>For 26'-30' Installed Elevation, Add</i>		283.23	
1294	<i>For 31'-35' Installed Elevation, Add</i>		339.87	
1295	<i>For 36'-40' Installed Elevation, Add</i>		396.52	
1296	<i>For Over 40' Installed Elevation, Add</i>		453.16	
2000	Wire, 600 volt, type THWN-THHN, copper, stranded, 4/0	MF	3,532.04	620.44
1291	<i>For 14'-20' Installed Elevation, Add</i>		128.95	
1292	<i>For 21'-25' Installed Elevation, Add</i>		257.89	
1293	<i>For 26'-30' Installed Elevation, Add</i>		322.36	
1294	<i>For 31'-35' Installed Elevation, Add</i>		386.84	
1295	<i>For 36'-40' Installed Elevation, Add</i>		451.31	
1296	<i>For Over 40' Installed Elevation, Add</i>		515.78	
2200	Wire, 600 volt, type THWN-THHN, copper, stranded, 250 MCM	MF	4,009.58	759.06
1291	<i>For 14'-20' Installed Elevation, Add</i>		141.84	
1292	<i>For 21'-25' Installed Elevation, Add</i>		283.68	
1293	<i>For 26'-30' Installed Elevation, Add</i>		354.60	
1294	<i>For 31'-35' Installed Elevation, Add</i>		425.52	
1295	<i>For 36'-40' Installed Elevation, Add</i>		496.44	
1296	<i>For Over 40' Installed Elevation, Add</i>		567.36	
2600	Wire, 600 volt, type THWN-THHN, copper, stranded, 350 MCM	MF	5,119.99	727.46
1291	<i>For 14'-20' Installed Elevation, Add</i>		157.60	
1292	<i>For 21'-25' Installed Elevation, Add</i>		315.20	
1293	<i>For 26'-30' Installed Elevation, Add</i>		394.00	
1294	<i>For 31'-35' Installed Elevation, Add</i>		472.80	
1295	<i>For 36'-40' Installed Elevation, Add</i>		551.60	
1296	<i>For Over 40' Installed Elevation, Add</i>		630.40	
2700	Wire, 600 volt, type THWN-THHN, copper, stranded, 400 MCM	MF	5,905.96	799.09
1291	<i>For 14'-20' Installed Elevation, Add</i>		166.48	
1292	<i>For 21'-25' Installed Elevation, Add</i>		332.96	
1293	<i>For 26'-30' Installed Elevation, Add</i>		416.20	
1294	<i>For 31'-35' Installed Elevation, Add</i>		499.44	
1295	<i>For 36'-40' Installed Elevation, Add</i>		582.68	
1296	<i>For Over 40' Installed Elevation, Add</i>		665.92	
2800	Wire, 600 volt, type THHN-THWN, copper, stranded, 500 MCM	MF	6,769.45	854.20
1291	<i>For 14'-20' Installed Elevation, Add</i>		177.30	
1292	<i>For 21'-25' Installed Elevation, Add</i>		354.60	
1293	<i>For 26'-30' Installed Elevation, Add</i>		443.25	
1294	<i>For 31'-35' Installed Elevation, Add</i>		531.90	
1295	<i>For 36'-40' Installed Elevation, Add</i>		620.55	
1296	<i>For Over 40' Installed Elevation, Add</i>		709.20	
2801	500 MCM-Type THWN 600V Cu, Sgl Strd, Pl in Cnd	MF	6,769.45	460.98
1291	<i>For 14'-20' Installed Elevation, Add</i>		177.30	
1292	<i>For 21'-25' Installed Elevation, Add</i>		354.60	
1293	<i>For 26'-30' Installed Elevation, Add</i>		443.25	
1294	<i>For 31'-35' Installed Elevation, Add</i>		531.90	
1295	<i>For 36'-40' Installed Elevation, Add</i>		620.55	
1296	<i>For Over 40' Installed Elevation, Add</i>		709.20	
2850	Wire, 600 volt, type THHN-THWN, copper, stranded, 600 MCM	MF	9,495.84	543.89
1291	<i>For 14'-20' Installed Elevation, Add</i>		217.55	
1292	<i>For 21'-25' Installed Elevation, Add</i>		435.09	
1293	<i>For 26'-30' Installed Elevation, Add</i>		543.87	
1294	<i>For 31'-35' Installed Elevation, Add</i>		652.64	
1295	<i>For 36'-40' Installed Elevation, Add</i>		761.41	
1296	<i>For Over 40' Installed Elevation, Add</i>		870.18	
2852	No 750 MCM - Type THHN 600V Cu, Sgl Strd, Pl in Cnd	MF	11,920.68	794.80
1291	<i>For 14'-20' Installed Elevation, Add</i>		274.12	
1292	<i>For 21'-25' Installed Elevation, Add</i>		548.23	
1293	<i>For 26'-30' Installed Elevation, Add</i>		685.29	
1294	<i>For 31'-35' Installed Elevation, Add</i>		822.35	
1295	<i>For 36'-40' Installed Elevation, Add</i>		959.41	
1296	<i>For Over 40' Installed Elevation, Add</i>		1,096.46	
2854	No 1000 MCM - Type THHN 600V Cu, Sgl Strd, Pl i Cnd	MF	18,605.87	1,213.74
1291	<i>For 14'-20' Installed Elevation, Add</i>		379.08	
1292	<i>For 21'-25' Installed Elevation, Add</i>		758.16	
1293	<i>For 26'-30' Installed Elevation, Add</i>		947.71	
1294	<i>For 31'-35' Installed Elevation, Add</i>		1,137.25	
1295	<i>For 36'-40' Installed Elevation, Add</i>		1,326.79	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1296	For Over 40' Installed Elevation, Add		1,516.33	
16119 2899	600 volt, type XHHW			
16119 2899	Copper, solid			
2900	Wire, 600 volt, copper type XHHW, solid, #14	MF	331.11	109.11
1291	For 14'-20' Installed Elevation, Add		23.18	
1292	For 21'-25' Installed Elevation, Add		46.35	
1293	For 26'-30' Installed Elevation, Add		57.94	
1294	For 31'-35' Installed Elevation, Add		69.53	
1295	For 36'-40' Installed Elevation, Add		81.12	
1296	For Over 40' Installed Elevation, Add		92.70	
2910	Wire, 600 volt, copper type XHHW, solid, #12	MF	412.42	138.29
1291	For 14'-20' Installed Elevation, Add		27.53	
1292	For 21'-25' Installed Elevation, Add		55.06	
1293	For 26'-30' Installed Elevation, Add		68.83	
1294	For 31'-35' Installed Elevation, Add		82.59	
1295	For 36'-40' Installed Elevation, Add		96.36	
1296	For Over 40' Installed Elevation, Add		110.12	
2920	Wire, 600 volt, copper type XHHW, solid, #10	MF	483.59	147.69
1291	For 14'-20' Installed Elevation, Add		30.00	
1292	For 21'-25' Installed Elevation, Add		60.00	
1293	For 26'-30' Installed Elevation, Add		75.00	
1294	For 31'-35' Installed Elevation, Add		90.00	
1295	For 36'-40' Installed Elevation, Add		105.00	
1296	For Over 40' Installed Elevation, Add		120.00	
16119 2999	Copper, stranded			
3000	Wire, 600 volt, copper type XHHW, stranded, #14	MF	344.29	109.11
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	
1296	For Over 40' Installed Elevation, Add		87.29	
3020	Wire, 600 volt, copper type XHHW, stranded, #12	MF	410.69	137.23
1291	For 14'-20' Installed Elevation, Add		25.79	
1292	For 21'-25' Installed Elevation, Add		51.58	
1293	For 26'-30' Installed Elevation, Add		64.47	
1294	For 31'-35' Installed Elevation, Add		77.37	
1295	For 36'-40' Installed Elevation, Add		90.26	
1296	For Over 40' Installed Elevation, Add		103.16	
3040	Wire, 600 volt, copper type XHHW, stranded, #10	MF	505.03	130.88
1291	For 14'-20' Installed Elevation, Add		28.37	
1292	For 21'-25' Installed Elevation, Add		56.74	
1293	For 26'-30' Installed Elevation, Add		70.92	
1294	For 31'-35' Installed Elevation, Add		85.10	
1295	For 36'-40' Installed Elevation, Add		99.29	
1296	For Over 40' Installed Elevation, Add		113.47	
3060	Wire, 600 volt, copper type XHHW, stranded, #8	MF	649.74	184.32
1291	For 14'-20' Installed Elevation, Add		35.46	
1292	For 21'-25' Installed Elevation, Add		70.92	
1293	For 26'-30' Installed Elevation, Add		88.65	
1294	For 31'-35' Installed Elevation, Add		106.38	
1295	For 36'-40' Installed Elevation, Add		124.11	
1296	For Over 40' Installed Elevation, Add		141.84	
3080	Wire, 600 volt, copper type XHHW, stranded, #6	MF	773.67	194.04
1291	For 14'-20' Installed Elevation, Add		43.67	
1292	For 21'-25' Installed Elevation, Add		87.34	
1293	For 26'-30' Installed Elevation, Add		109.18	
1294	For 31'-35' Installed Elevation, Add		131.01	
1295	For 36'-40' Installed Elevation, Add		152.85	
1296	For Over 40' Installed Elevation, Add		174.68	
3085	#14 AWG Cable XLP (XHHW) 600', C U, Sgl, Strd, Pl in Cnd		348.33	
1291	For 14'-20' Installed Elevation, Add		0.00	
1292	For 21'-25' Installed Elevation, Add		0.00	
1293	For 26'-30' Installed Elevation, Add		0.00	
1294	For 31'-35' Installed Elevation, Add		0.00	
1295	For 36'-40' Installed Elevation, Add		0.00	
1296	For Over 40' Installed Elevation, Add		0.00	
16119 5399	600 volt, type XLPE-USE(RHW)			
16119 5399	Copper, solid			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5400	Wire, 600 volt, copper type XLPE-USE(RHW), solid, #12	MF	399.65	110.85
1291	For 14'-20' Installed Elevation, Add		25.79	
1292	For 21'-25' Installed Elevation, Add		51.58	
1293	For 26'-30' Installed Elevation, Add		64.47	
1294	For 31'-35' Installed Elevation, Add		77.37	
1295	For 36'-40' Installed Elevation, Add		90.26	
1296	For Over 40' Installed Elevation, Add		103.16	
5410	Wire, 600 volt, copper type XLPE-USE(RHW), solid, #10	MF	496.37	135.00
1291	For 14'-20' Installed Elevation, Add		30.00	
1292	For 21'-25' Installed Elevation, Add		60.00	
1293	For 26'-30' Installed Elevation, Add		75.00	
1294	For 31'-35' Installed Elevation, Add		90.00	
1295	For 36'-40' Installed Elevation, Add		105.00	
1296	For Over 40' Installed Elevation, Add		120.00	
16119 5439 Copper, stranded				
5440	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #14	MF	353.59	119.93
1291	For 14'-20' Installed Elevation, Add		21.82	
1292	For 21'-25' Installed Elevation, Add		43.64	
1293	For 26'-30' Installed Elevation, Add		54.56	
1294	For 31'-35' Installed Elevation, Add		65.47	
1295	For 36'-40' Installed Elevation, Add		76.38	
1296	For Over 40' Installed Elevation, Add		87.29	
5460	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #12	MF	411.85	144.36
1291	For 14'-20' Installed Elevation, Add		25.79	
1292	For 21'-25' Installed Elevation, Add		51.58	
1293	For 26'-30' Installed Elevation, Add		64.47	
1294	For 31'-35' Installed Elevation, Add		77.37	
1295	For 36'-40' Installed Elevation, Add		90.26	
1296	For Over 40' Installed Elevation, Add		103.16	
5480	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #10	MF	496.90	168.36
1291	For 14'-20' Installed Elevation, Add		28.37	
1292	For 21'-25' Installed Elevation, Add		56.74	
1293	For 26'-30' Installed Elevation, Add		70.92	
1294	For 31'-35' Installed Elevation, Add		85.10	
1295	For 36'-40' Installed Elevation, Add		99.29	
1296	For Over 40' Installed Elevation, Add		113.47	
5500	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #8	MF	646.25	198.58
1291	For 14'-20' Installed Elevation, Add		35.46	
1292	For 21'-25' Installed Elevation, Add		70.92	
1293	For 26'-30' Installed Elevation, Add		88.65	
1294	For 31'-35' Installed Elevation, Add		106.38	
1295	For 36'-40' Installed Elevation, Add		124.11	
1296	For Over 40' Installed Elevation, Add		141.84	
5520	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #6	MF	758.56	240.28
1291	For 14'-20' Installed Elevation, Add		43.67	
1292	For 21'-25' Installed Elevation, Add		87.34	
1293	For 26'-30' Installed Elevation, Add		109.18	
1294	For 31'-35' Installed Elevation, Add		131.01	
1295	For 36'-40' Installed Elevation, Add		152.85	
1296	For Over 40' Installed Elevation, Add		174.68	
5540	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #4	MF	1,087.58	294.71
1291	For 14'-20' Installed Elevation, Add		53.57	
1292	For 21'-25' Installed Elevation, Add		107.13	
1293	For 26'-30' Installed Elevation, Add		133.91	
1294	For 31'-35' Installed Elevation, Add		160.70	
1295	For 36'-40' Installed Elevation, Add		187.48	
1296	For Over 40' Installed Elevation, Add		214.26	
5560	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #2	MF	1,438.53	345.13
1291	For 14'-20' Installed Elevation, Add		63.10	
1292	For 21'-25' Installed Elevation, Add		126.19	
1293	For 26'-30' Installed Elevation, Add		157.74	
1294	For 31'-35' Installed Elevation, Add		189.29	
1295	For 36'-40' Installed Elevation, Add		220.84	
1296	For Over 40' Installed Elevation, Add		252.38	
5580	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, #1	MF	1,760.78	397.15
1291	For 14'-20' Installed Elevation, Add		70.92	
1292	For 21'-25' Installed Elevation, Add		141.84	
1293	For 26'-30' Installed Elevation, Add		177.30	
1294	For 31'-35' Installed Elevation, Add		212.76	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1295	For 36'-40' Installed Elevation, Add		248.22	
1296	For Over 40' Installed Elevation, Add		283.68	
5600	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, 1/0	MF	2,136.76	531.58
1291	For 14'-20' Installed Elevation, Add		85.86	
1292	For 21'-25' Installed Elevation, Add		171.72	
1293	For 26'-30' Installed Elevation, Add		214.65	
1294	For 31'-35' Installed Elevation, Add		257.58	
1295	For 36'-40' Installed Elevation, Add		300.51	
1296	For Over 40' Installed Elevation, Add		343.44	
5620	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, 2/0	MF	2,533.89	534.88
1291	For 14'-20' Installed Elevation, Add		97.69	
1292	For 21'-25' Installed Elevation, Add		195.37	
1293	For 26'-30' Installed Elevation, Add		244.22	
1294	For 31'-35' Installed Elevation, Add		293.06	
1295	For 36'-40' Installed Elevation, Add		341.90	
1296	For Over 40' Installed Elevation, Add		390.74	
5640	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, 3/0	MF	3,061.77	699.31
1291	For 14'-20' Installed Elevation, Add		113.29	
1292	For 21'-25' Installed Elevation, Add		226.58	
1293	For 26'-30' Installed Elevation, Add		283.23	
1294	For 31'-35' Installed Elevation, Add		339.87	
1295	For 36'-40' Installed Elevation, Add		396.52	
1296	For Over 40' Installed Elevation, Add		453.16	
5660	Wire, 600 volt, copper type XLPE-USE(RHW), stranded, 4/0	MF	3,625.00	701.61
1291	For 14'-20' Installed Elevation, Add		128.95	
1292	For 21'-25' Installed Elevation, Add		257.89	
1293	For 26'-30' Installed Elevation, Add		322.36	
1294	For 31'-35' Installed Elevation, Add		386.84	
1295	For 36'-40' Installed Elevation, Add		451.31	
1296	For Over 40' Installed Elevation, Add		515.78	
5680	Wire, 600 volt, 250 MCM copper type XLPE-USE(RHW), stranded	MF	4,346.55	698.92
1291	For 14'-20' Installed Elevation, Add		141.84	
1292	For 21'-25' Installed Elevation, Add		283.68	
1293	For 26'-30' Installed Elevation, Add		354.60	
1294	For 31'-35' Installed Elevation, Add		425.52	
1295	For 36'-40' Installed Elevation, Add		496.44	
1296	For Over 40' Installed Elevation, Add		567.36	
5700	Wire, 600 volt, 300 MCM copper type XLPE-USE(RHW), stranded	MF	4,982.09	886.14
1291	For 14'-20' Installed Elevation, Add		149.62	
1292	For 21'-25' Installed Elevation, Add		299.24	
1293	For 26'-30' Installed Elevation, Add		374.05	
1294	For 31'-35' Installed Elevation, Add		448.86	
1295	For 36'-40' Installed Elevation, Add		523.67	
1296	For Over 40' Installed Elevation, Add		598.48	
5720	Wire, 600 volt, 350 MCM copper type XLPE-USE(RHW), stranded	MF	5,584.78	895.22
1291	For 14'-20' Installed Elevation, Add		157.60	
1292	For 21'-25' Installed Elevation, Add		315.20	
1293	For 26'-30' Installed Elevation, Add		394.00	
1294	For 31'-35' Installed Elevation, Add		472.80	
1295	For 36'-40' Installed Elevation, Add		551.60	
1296	For Over 40' Installed Elevation, Add		630.40	
5740	Wire, 600 volt, 400 MCM copper type XLPE-USE(RHW), stranded	MF	6,254.55	870.65
1291	For 14'-20' Installed Elevation, Add		166.48	
1292	For 21'-25' Installed Elevation, Add		332.96	
1293	For 26'-30' Installed Elevation, Add		416.20	
1294	For 31'-35' Installed Elevation, Add		499.44	
1295	For 36'-40' Installed Elevation, Add		582.68	
1296	For Over 40' Installed Elevation, Add		665.92	
5760	Wire, 600 volt, 500 MCM copper type XLPE-USE(RHW), stranded	MF	7,199.37	1,045.82
1291	For 14'-20' Installed Elevation, Add		177.30	
1292	For 21'-25' Installed Elevation, Add		354.60	
1293	For 26'-30' Installed Elevation, Add		443.25	
1294	For 31'-35' Installed Elevation, Add		531.90	
1295	For 36'-40' Installed Elevation, Add		620.55	
1296	For Over 40' Installed Elevation, Add		709.20	
16120 0010	Underground or direct burial cable			
16120 0099	Underground cable, not incl exc & backfill			
0100	Underground cable, type USE, #10	MF	731.30	
0110	Underground cable, type USE, # 8	MF	809.73	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0120	Underground cable, type USE, # 6	MF	839.94	
0130	Underground cable, type USE, # 4	MF	1,070.01	
0140	Underground cable, type USE, # 2	MF	1,325.65	
0150	Underground cable, type USE, # 1	MF	1,627.22	
0160	Underground cable, type USE, # 1/0	MF	1,853.80	
0170	Underground cable, type USE, # 2/0	MF	2,132.67	
0180	Underground cable, type USE, # 3/0	MF	2,550.55	
0190	Underground cable, type USE, # 4/0	MF	2,957.24	
0200	Underground cable, type USE, 250 MCM	MF	3,600.11	
0210	Underground cable, type USE, 300 MCM	MF	4,157.85	
0220	Underground cable, type USE, 350 MCM	MF	4,680.74	
0230	Underground cable, type USE, 400 MCM	MF	5,312.66	
0240	Underground cable, type USE, 500 MCM	MF	6,149.27	
16121 0010 Alarm & communications cable And Communi- Cation, Solid Conductor				
16121 0099 Low voltage, solid				
0100	Alarm & communications cable, #14, 1 pair, in conduit, low	MF	1,095.21	241.91
0150	Alarm & communications cable, #14, 2 pair, in conduit, low	MF	1,932.43	262.62
0200	Alarm & communications cable, #14, 3 pair, in conduit, low	MF	2,659.70	294.77
0250	Alarm & communications cable, #14, 4 pair, in conduit, low	MF	3,613.77	436.95
0300	Alarm & communications cable, #14, 5 pair, in conduit, low	MF	3,830.39	403.53
0350	Alarm & communications cable, #14, 6 pair, in conduit, low	MF	4,499.56	434.68
16121 4200 Buried In Trench, Excavation Excluded				
4201	1 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	1,000.77	
4202	2 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	1,753.62	
4203	3 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	2,478.08	
4204	4 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	3,327.48	
4205	5 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	3,507.21	
4206	6 Pr #14AWG, Sol, LV, Direct Burial Alarm & Communications Cable	MF	4,291.38	
16121 4300 Installed On Poles, Aerially				
4301	1 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	756.26	223.13
4302	2 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	1,186.03	223.45
4303	3 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	1,906.55	312.98
4304	4 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	2,564.04	313.22
4305	5 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	2,743.88	422.50
4306	6 Pr #14AWG, Sol, LV, On Poles Alarm & Communications Cable	MF	3,644.77	426.91
16121 8200 Cable For Hvac System Controls				
16121 8210 Low Voltage Cable To 300 Volts For Surface Or Conduit Installation - Thermostat Wring				
8211	2/c#18 300V Tstat Cable, Low Volt Cable For HVAC System Controls	MF	343.25	45.33
8212	3/c#18 300V Tstat Cable, Low Volt Cable For HVAC System Controls	MF	442.72	44.79
8213	4/c#18 300V Tstat Cable, Low Volt Cable For HVAC System Controls	MF	577.30	89.42
16121 8300 Cable For Fire Alarm Or ADP System				
8301	Red Teflon 1-Pair #18 Gauge	CLF	68.28	14.68
8302	Red Teflon 2-Pair #18 Gauge	CLF	78.92	16.81
8303	Red Teflon 4-Pair #18 Gauge	CLF	105.90	22.04
8304	Red Teflon 6-Pair #18 Gauge	CLF	129.88	7.47
8305	Red Teflon 8-Pair #18 Gauge	CLF	152.19	30.55
8306	Red Teflon 10-Pair #18 Gauge	CLF	177.49	35.62
8307	Red Teflon 1-Pair #14 Gauge	CLF	103.54	19.14
8308	Red Teflon 2-Pair #14 Gauge	CLF	136.18	24.15
16122 0010 Telephone cable				
16122 0099 #22 AWG				
16122 0099 In conduit				
0100	Telephone cable, #22 AWG, in conduit, 2 pair	MF	483.07	231.00
0120	Telephone cable, #22 AWG, in conduit, 3 pair	MF	663.56	248.28
0140	Telephone cable, #22 AWG, in conduit, 4 pair	MF	772.55	335.20
0160	Telephone cable, #22 AWG, in conduit, 6 pair	MF	924.35	350.61
0180	Telephone cable, #22 AWG, in conduit, 9 pair	MF	1,435.15	465.11
0200	Telephone cable, #22 AWG, in conduit, 11 pair	MF	1,830.09	528.51
0220	Telephone cable, #22 AWG, in conduit, 13 pair	MF	2,211.37	640.90
0240	Telephone cable, #22 AWG, in conduit, 15 pair	MF	2,382.98	789.19
0260	Telephone cable, #22 AWG, in conduit, 19 pair	MF	2,518.32	883.65
0280	Telephone cable, #22 AWG, in conduit, 23 pair	MF	2,976.80	924.80
0300	Telephone cable, #22 AWG, in conduit, 27 pair	MF	3,463.43	964.89

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0320	Telephone cable, #22 AWG, in conduit, 38 pair	MF	5,492.68	1,110.15
0340	Telephone cable, #22 AWG, in conduit, 51 pair	MF	6,545.68	1,301.59
0360	Telephone cable, #22 AWG, in conduit, 75 pair	MF	9,649.39	2,735.52
0380	Telephone cable, #22 AWG, in conduit, 100 pair	MF	12,890.49	3,128.28
0400	Telephone cable, #22 AWG, in conduit, 125 pair	MF	16,123.03	3,978.84
0420	Telephone cable, #22 AWG, in conduit, 150 pair	MF	20,154.52	5,373.62
0430	4 Pr #22 AWG Phone, Cat 5, E1A Color Coded Pl in Cord		963.09	
16122 0999 Direct burial, no excavation				
1000	Telephone cable, #22 AWG, direct burial, 2 pair	MF	335.05	
1020	Telephone cable, #22 AWG, direct burial, 3 pair	MF	470.52	
1040	Telephone cable, #22 AWG, direct burial, 4 pair	MF	540.33	
1060	Telephone cable, #22 AWG, direct burial, 6 pair	MF	707.88	
1080	Telephone cable, #22 AWG, direct burial, 9 pair	MF	1,139.26	
1100	Telephone cable, #22 AWG, direct burial, 11 pair	MF	1,496.83	
1120	Telephone cable, #22 AWG, direct burial, 13 pair	MF	1,820.10	
1140	Telephone cable, #22 AWG, direct burial, 15 pair	MF	1,923.09	
1160	Telephone cable, #22 AWG, direct burial, 19 pair	MF	2,005.65	
1180	Telephone cable, #22 AWG, direct burial, 23 pair	MF	2,421.17	
1200	Telephone cable, #22 AWG, direct burial, 27 pair	MF	2,830.24	
1220	Telephone cable, #22 AWG, direct burial, 38 pair	MF	4,723.84	
1240	Telephone cable, #22 AWG, direct burial, 51 pair	MF	5,713.18	
1260	Telephone cable, #22 AWG, direct burial, 75 pair	MF	7,281.03	
1280	Telephone cable, #22 AWG, direct burial, 100 pair	MF	10,183.94	
1300	Telephone cable, #22 AWG, direct burial, 125 pair	MF	12,671.63	
1320	Telephone cable, #22 AWG, direct burial, 150 pair	MF	15,443.91	
16122 1999 On poles				
2000	Telephone cable, #22 AWG, on poles, 2 pair	MF	550.30	159.28
2020	Telephone cable, #22 AWG, on poles, 3 pair	MF	633.96	171.50
2040	Telephone cable, #22 AWG, on poles, 4 pair	MF	676.95	167.92
2060	Telephone cable, #22 AWG, on poles, 6 pair	MF	812.25	190.05
2080	Telephone cable, #22 AWG, on poles, 9 pair	MF	1,266.15	325.79
2100	Telephone cable, #22 AWG, on poles, 11 pair	MF	1,605.14	372.96
2120	Telephone cable, #22 AWG, on poles, 13 pair	MF	1,832.36	372.88
2140	Telephone cable, #22 AWG, on poles, 15 pair	MF	1,942.93	387.17
2160	Telephone cable, #22 AWG, on poles, 19 pair	MF	1,975.22	346.00
2180	Telephone cable, #22 AWG, on poles, 23 pair	MF	2,342.42	418.60
2200	Telephone cable, #22 AWG, on poles, 27 pair	MF	2,713.14	441.41
2220	Telephone cable, #22 AWG, on poles, 38 pair	MF	4,611.47	467.52
2240	Telephone cable, #22 AWG, on poles, 51 pair	MF	5,543.47	597.36
2260	Telephone cable, #22 AWG, on poles, 75 pair	MF	6,587.45	699.76
2280	Telephone cable, #22 AWG, on poles, 100 pair	MF	9,133.24	770.44
2300	Telephone cable, #22 AWG, on poles, 125 pair	MF	11,205.32	862.45
2320	Telephone cable, #22 AWG, on poles, 150 pair	MF	13,254.92	888.92
16122 3000 Installed Exposed				
3002	2 Pr #22AWG Phone Cable, Inst Exposed	MF	269.82	81.24
3004	3 Pr #22AWG Phone Cable, Inst Exposed	MF	324.86	93.15
3006	4 Pr #22AWG Phone Cable, Inst Exposed	MF	389.23	114.21
3008	6 Pr #22AWG Phone Cable, Inst Exposed	MF	467.77	125.53
3010	9 Pr #22AWG Phone Cable, Inst Exposed	MF	793.53	159.73
3012	11 Pr #22AWG Phone Cable, Inst Exposed	MF	905.14	188.49
3014	13 Pr #22AWG Phone Cable, Inst Exposed	MF	925.61	217.17
3016	15 Pr #22AWG Phone Cable, Inst Exposed	MF	1,069.95	243.07
3018	19 Pr #22AWG Phone Cable, Inst Exposed	MF	1,195.55	267.38
3020	23 Pr #22AWG Phone Cable, Inst Exposed	MF	1,352.58	294.23
3022	27 Pr #22AWG Phone Cable, Inst Exposed	MF	1,504.26	333.44
3024	38 Pr #22AWG Phone Cable, Inst Exposed	MF	1,732.77	377.65
3026	51 Pr #22AWG Phone Cable, Inst Exposed	MF	2,216.80	434.02
3028	75 Pr #22AWG Phone Cable, Inst Exposed	MF	3,988.72	962.70
3030	100 Pr #22AWG Phone Cable, Inst Exposed	MF	5,178.21	1,317.43
3032	125 Pr #22AWG Phone Cable, Inst Exposed	MF	6,314.20	1,479.62
3034	150 Pr #22AWG Phone Cable, Inst Exposed	MF	8,395.01	2,076.11
16123 0010 Conductor installed on poles				
16123 0099 Aluminum ACSR				
0100	Aluminum cable, ACSR, on poles, #4, swan 6/1	MF	541.51	219.45

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0120	Aluminum cable, ACSR, on poles, #4, swanate 7/1	MF	567.42	213.28
0140	Aluminum cable, ACSR, on poles, #2, sparrow 6/1	MF	621.18	211.45
0160	Aluminum cable, ACSR, on poles, #2, sparate 7/1	MF	657.59	210.23
0180	Aluminum cable, ACSR, on poles, 1/0, raven 6/1	MF	734.92	202.76
0200	Aluminum cable, ACSR, on poles, 2/0, quail 6/1	MF	859.80	262.16
0220	Aluminum cable, ACSR, on poles, 3/0, pigeon 6/1	MF	995.93	258.26
0240	Aluminum cable, ACSR, on poles, 4/0, penquin 6/1	MF	1,155.70	298.86
0300	Aluminum cable, ACSR, on poles, 477.0	MF	2,362.94	460.98
0320	Aluminum cable, ACSR, on poles, 795.0	MF	3,708.65	608.25
0500	Aluminum cable, bare, on poles, #1	MF	868.70	346.20
0510	477 AWG ACSR Cable Hawk 26/1 Installed On Pole	MF	1,349.39	416.98
16123 0999 Copper, AWG				
16123 0999 Stranded, bare				
1000	Copper cable, on poles, stranded, bare, #12	MF	445.81	215.18
1010	Copper cable, on poles, stranded, bare, #10	MF	517.68	213.36
1020	Copper cable, on poles, stranded, bare, #8	MF	658.29	237.92
1030	Copper cable, on poles, stranded, bare, #6	MF	757.13	267.64
1040	Copper cable, on poles, stranded, bare, #4	MF	933.62	271.90
1050	Copper cable, on poles, stranded, bare, #2	MF	1,308.53	355.02
1060	Copper cable, on poles, stranded, bare, #1	MF	1,592.95	376.94
1080	Copper cable, on poles, stranded, bare, #1/0	MF	1,823.05	472.64
1090	Copper cable, on poles, stranded, bare, #2/0	MF	2,182.12	420.79
1100	Copper cable, on poles, stranded, bare, #3/0	MF	2,669.15	551.68
1110	Copper cable, on poles, stranded, bare, #4/0	MF	3,281.06	633.86
1200	Copper cable, on poles, stranded, bare, 250 MCM	MF	3,726.40	741.86
1210	Copper cable, on poles, stranded, bare, 300 MCM	MF	4,464.70	872.11
1220	Copper cable, on poles, stranded, bare, 350 MCM	MF	4,796.10	836.79
1230	Copper cable, on poles, stranded, bare, 400 MCM	MF	5,700.19	901.23
1240	Copper cable, on poles, stranded, bare, 500 MCM	MF	6,330.00	903.41
16123 1499 Insulated				
1500	Copper cable, on poles, stranded, insulated, #12	MF	458.36	204.30
1510	Copper cable, on poles, stranded, insulated, #10	MF	540.81	204.43
1520	Copper cable, on poles, stranded, insulated, #8	MF	658.87	205.32
1530	Copper cable, on poles, stranded, insulated, #6	MF	774.56	267.52
1540	Copper cable, on poles, stranded, insulated, #4	MF	968.48	274.02
1550	Copper cable, on poles, stranded, insulated, #2	MF	1,355.01	379.74
1560	Copper cable, on poles, stranded, insulated, #1	MF	1,662.67	395.01
1570	Copper cable, on poles, stranded, insulated, #1/0	MF	1,886.95	474.18
1580	Copper cable, on poles, stranded, insulated, #2/0	MF	2,275.08	474.67
1590	Copper cable, on poles, stranded, insulated, #3/0	MF	2,773.73	627.61
1600	Copper cable, on poles, stranded, insulated, #4/0	MF	3,397.26	652.82
1620	Copper cable, on poles, stranded, insulated, 250 MCM	MF	3,958.79	813.81
1630	Copper cable, on poles, stranded, insulated, 300 MCM	MF	4,569.27	828.50
1640	Copper cable, on poles, stranded, insulated, 350 MCM	MF	4,958.77	916.65
1650	Copper cable, on poles, stranded, insulated, 400 MCM	MF	5,758.29	950.07
1660	Copper cable, on poles, stranded, insulated, 500 MCM	MF	6,504.29	1,004.79
16123 1999 Solid, bare				
2000	Copper cable, on poles, solid, bare, #12	MF	439.18	211.81
2010	Copper cable, on poles, solid, bare, #8	MF	643.76	232.44
2020	Copper cable, on poles, solid, bare, #6	MF	751.32	265.49
2030	Copper cable, on poles, solid, bare, #4	MF	922.00	271.82
16123 2999 Service drop cable, aluminum ACSR neut, stranded				
16123 2999 Duplex				
3000	Service drop cable, duplex, #6, on poles, al, ACSR neutral, 600V, strd	MF	1,525.07	701.15
3010	Service drop cable, duplex, #4, on poles, al, ACSR neutral, 600V, strd	MF	1,787.76	792.98
3020	Service drop cable, duplex, #2, on poles, al, ACSR neutral, 600V, strd	MF	2,261.95	948.99
3030	Service drop cable, duplex, 1/0, on poles, al, ACSR neutral, 600V,	MF	3,065.26	1,193.23
16123 3099 Triplex				
3100	Service drop cable, triplex, #6, on poles, al, ACSR neutral, 600V,	MF	1,845.86	805.04
3110	Service drop cable, triplex, #4, on poles, al, ACSR neutral, 600V,	MF	2,203.85	942.26
3120	Service drop cable, triplex, #2, on poles, al, ACSR neutral, 600V,	MF	2,693.43	1,138.73
3130	Service drop cable, triplex, 1/0, on poles, al, ACSR neutral, 600V,	MF	3,573.04	1,439.89
3140	Service drop cable, triplex, 2/0, on poles, al, ACSR neutral, 600V,	MF	4,615.70	1,913.64
3150	Service drop cable, triplex, 4/0, on poles, al, ACSR neutral, 600V,	MF	5,909.74	2,361.08

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16123 3199	Quadplex			
3200	Service drop cable, quadplex, #6, on poles, al, ACSR neutral, 600V,	MF	2,250.33	959.70
3210	Service drop cable, quadplex, #4, on poles, al, ACSR neutral, 600V,	MF	2,739.91	1,160.31
3220	Service drop cable, quadplex, #2, on poles, al, ACSR neutral, 600V,	MF	3,456.84	1,463.04
3230	Service drop cable, quadplex, 1/0, on poles, al, ACSR neutral,	MF	4,884.11	1,943.05
3240	Service drop cable, quadplex, 2/0, on poles, al, ACSR neutral,	MF	5,793.55	2,272.56
3250	Service drop cable, quadplex, 3/0, on poles, al, ACSR neutral,	MF	6,142.14	2,323.97
3260	Service drop cable, quadplex, 4/0, on poles, al, ACSR neutral,	MF	7,727.05	2,979.80
16123 3300	Aluminum Triplex For U/G Service, Direct Burial			
Note: Price Does Not Include Excavation Or Backfill.				
3302	#6 Aluminum Triplex	MF	1,426.76	
3304	#4 Aluminum Triplex	MF	1,750.52	
3306	#2 Aluminum Triplex	MF	2,070.00	
3308	#1/0 Aluminum Triplex	MF	2,587.76	
3310	#2/0 Aluminum Triplex	MF	2,844.46	
3312	#3/0 Aluminum Triplex	MF	3,244.54	
3314	#4/0 Aluminum Triplex	MF	4,094.51	
16150	Terminations			
16152 8599	Digital volt tester			
8600	Cable terminations, digital volt tester	EA	232.39	
16153 0010	Cable terminations			
16153 0099	Low voltage			
16153 0099	Terminal lugs			
0100	Cable term to 600V, no stress cones, #8, term lugs,	EA	30.53	14.05
0120	Cable term to 600V, no stress cones, #4, term lugs,	EA	31.14	13.05
0140	Cable term to 600V, no stress cones, 1/0, term lugs,	EA	42.98	20.29
0160	Cable term to 600V, no stress cones, 4/0, term lugs,	EA	49.95	17.86
0180	Cable term to 600V, no stress cones, 300 MCM term lugs,	EA	61.47	22.00
0200	Cable term to 600V, no stress cones, 500 MCM term lugs,	EA	83.93	28.53
16153 0299	Terminal blocks Labor Not Including Wire Terminations			
0300	Cable term to 600V, 250 MCM 3p, power distribution, term	EA	326.90	39.62
0320	Cable term to 600V, #22-#10, screw type, 12 pt, term blocks	EA	74.95	5.92
0330	Cable term to 600V, #8-#2, screw type, 12 pt, term blocks	EA	99.23	6.82
16153 0400	Compression Connectors - Tape Wrapped			
0402	#6 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	22.38	11.94
0404	#4 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	23.13	11.87
0406	#2 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	26.01	11.84
0408	#1/0 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	35.50	11.84
0410	#2/0 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	38.94	16.97
0412	#3/0 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	46.00	16.98
0414	#4/0 AWG Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	55.32	23.89
0416	250 MCM Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	70.12	24.00
0418	300 MCM Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	77.72	30.88
0420	350 MCM Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	78.13	30.85
0422	400 MCM Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	89.05	34.20
0424	500 MCM Compr Conn, Tape Wrapped Low Voltage - To 600 Volts	EA	91.23	34.02
16153 0500	Compression Lugs, One Hole, Tape Wrapped			
0502	#6 AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	17.36	6.67
0504	#4 AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	17.61	6.67
0506	#2 AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	20.01	6.70
0508	#1/0AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	24.00	10.09
0510	#2/0AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	27.55	10.16
0512	#3/0 AWG Compr Lugs, 1Hole, Wrapp Low Voltage - To 600 Volts	EA	32.05	10.20
0514	#4/0AWG Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	38.35	13.62
0516	250 MCM Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	45.37	20.43
0520	350 MCM Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	55.67	20.43
0522	400 MCM Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	61.24	23.79
0524	500 MCM Compr Lugs, 1Hole, Wrapped Low Voltage - To 600 Volts	EA	67.23	23.75
0526	#16-14 Insulated, Compr Lugs, 1 Hole, Wrapped, Low Voltage	EA	7.87	3.42
0528	#12-10 Insulated, Compr Lugs, 1 Hole, Wrapped, Low Voltage	EA	8.10	3.42
0530	#8 AWG Compr Lugs, 1Hole, Wrapped, Low Voltage To 600 Watts	EA	9.65	3.46
16153 0600	Split Bolt Connectors - Tape Wrapped			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0601	#8 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	28.91	12.02
0602	1 Conductor # 6 Mechanical Lug	EA	5.98	2.85
0603	#6 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	29.19	12.02
0604	1 Conductor # 2 Mechanical Lug	EA	9.47	4.46
0605	#4 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	29.89	12.02
0606	1 Conductor # 1/0 Mechanical Lug	EA	11.92	5.45
0607	#2 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	40.93	17.08
0608	1 Conductor # 2/0 Mechanical Lug	EA	14.08	5.88
0610	1 Conductor 250 MCM Mech Lug	EA	21.67	8.06
0611	#1/0 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	45.52	18.19
0612	#2/0 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	53.16	20.08
0614	#3/0 AWG Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	64.15	19.93
0616	250 MCM Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	75.62	24.93
0618	350 MCM Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	114.14	39.26
0620	500 MCM Split Bolt Conn, Wrapped Low Voltage - To 600 Volts	EA	150.79	39.33
16153 0999 Medium voltage (to 5 KV)				
16153 0999 Cable splice, shielded				
1000	Cable term, medium voltage (to 5KV), shielded, #6, cable splice	EA	167.94	49.67
1010	Cable term, medium voltage (to 5KV), shielded, #2, cable splice	EA	167.94	34.91
1020	Cable term, medium voltage (to 5KV), shielded, 1/0, cable	EA	167.94	34.91
1030	Cable term, medium voltage (to 5KV), shielded, 2/0, cable	EA	178.55	41.90
1040	Cable term, medium voltage (to 5KV), shielded, 3/0, cable	EA	186.34	43.79
1050	Cable term, medium voltage (to 5KV), shielded, 4/0, cable	EA	199.00	46.82
1060	Cable term, to 5KV, cable splice, shielded, 250 MCM	EA	213.16	54.31
1070	Cable term, to 5KV, cable splice, shielded, 350 MCM	EA	220.37	56.20
1080	Cable term, to 5KV, cable splice, shielded, 500 MCM	EA	233.38	59.59
16153 1199 Termination				
1200	Cable term, to 5KV, term, w/o stress cone, #6-4/0	EA	102.33	49.46
1210	Cable term, to 5KV, term, w/o stress cone, 250-500 MCM	EA	119.39	55.70
1220	Cable term, to 5KV, #6-4/0, term, w/ stress cone (nouded)	EA	236.27	33.06
1230	Cable term, to 5KV, 250-500 MCM term, w/ stress cone (no)	EA	326.43	45.75
16153 1300 Connect To Potheads Pothead Included				
1302	#6-#4/0 Connect To Pothead(incl Medium Voltage to 5 KV	EA	537.42	73.00
1304	250-500 MCM Conn To Pothead(incl Medium Voltage to 5 KV	EA	689.73	83.12
16153 1310 Two Conductor Pothead - 5 Kv Pothead Included				
1312	#6-#4/0 2/c 5KV PotHead(incl Medium Voltage to 5 KV	EA	383.15	107.23
1314	250-500 MCM 2/c 5KV PotHead(incl Medium Voltage to 5 KV	EA	515.30	135.12
1316	400 MCM - 700 MCM 2/C 5KV PotHead(incl Medium Voltage to	EA	790.02	152.77
1318	750 MCM 2/C 5KV PotHead(incl Medium Voltage to 5KV)	EA	1,297.02	178.26
1320	1000 MCM 2/C 5KV PotHead(incl Medium Voltage to 5 KV)	EA	2,395.93	267.48
16153 1330 Three Conductor Pothead - 5 Kv Potheads Included				
1332	#6-#4/0 3/c 5KV PotHead(incl Medium Voltage to 5 KV	EA	1,613.65	142.85
1334	250-500 MCM 3/c 5KV PotHead(incl Medium Voltage to 5 KV	EA	1,764.62	167.14
16153 1400 Cable Splice, Crimp Compression Connection For Bare Wire. Copper				
1402	#8 Crimp Compression Connection	EA	22.22	11.89
1404	#6 Crimp Compression Connection	EA	24.95	13.08
1406	#4 Crimp Compression Connection	EA	27.59	14.32
1408	#3 Crimp Compression Connection	EA	32.17	16.70
1410	#2 Crimp Compression Connection	EA	36.41	19.07
1412	#1 Crimp Compression Connection	EA	41.12	21.45
1414	1/0 Crimp Compression Connection	EA	45.64	23.83
1416	2/0 Crimp Compression Connection	EA	50.09	26.21
1418	3/0 Crimp Compression Connection	EA	54.87	28.59
1420	4/0 Crimp Compression Connection	EA	59.44	31.01
1422	250 MCM Crimp Compression Conn.	EA	64.16	33.35
1424	300 MCM Crimp Compression Conn.	EA	69.06	35.77
1426	350 MCM Crimp Compression Conn.	EA	73.51	38.14
1428	400 MCM Crimp Compression Conn.	EA	83.19	42.90
1430	500 MCM Crimp Compression Conn.	EA	93.32	47.66
16153 1500 Cable Splice, Crimp Compression Connection For Bare Wire. Aluminum				
1502	#6 Crimp Compression Connection	EA	25.79	13.08
1504	#4 Crimp Compression Connection	EA	28.05	14.32
1506	#2 Crimp Compression Connection	EA	37.93	19.07

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1508	#1 Crimp Compression Connection	EA	45.00	21.45
1510	1/0 Crimp Compression Connection	EA	49.30	23.83
1512	2/0 Crimp Compression Connection	EA	53.59	26.21
1514	3/0 Crimp Compression Connection	EA	58.93	28.59
1516	4/0 Crimp Compression Connection	EA	63.73	31.01
1518	250 MCM Crimp Compression Conn.	EA	68.34	33.35
1520	300 MCM Crimp Compression Conn.	EA	73.15	35.77
1522	350 MCM Crimp Compression Conn.	EA	77.81	38.14
1524	400 MCM Crimp Compression Conn.	EA	89.35	42.90
1526	500 MCM Crimp Compression Conn.	EA	101.00	47.66
16153 1999 15 KV				
16153 1999 Cable splice, grounded, shielded				
2000	Cable term, 15KV, cable splice, gnd, shielded, #2-4/0	EA	478.92	184.54
2010	Cable term, 15KV, cable splice, gnd, shielded, 250-500 MCM	EA	658.82	256.04
2020	Cable term, 15KV, GW 3/0-500MCM 2 way, cable splice,	EA	1,314.16	235.75
2030	Cable term, 15KV, GW 3/0-500MCM 3 way, cable splice,	EA	2,718.00	445.46
16153 2099 Termination				
2100	Cable term, 15KV, termination, #2-3/0	EA	177.00	52.46
2110	Cable term, 15KV, termination, 3/0-250 MCM	EA	195.09	50.92
2120	Cable term, 15KV, termination, 350 MCM-500 MCM	EA	210.86	47.14
16153 2199 Stress cones (5-15 KV)				
2200	Cable term, 15KV, stress cones (5-15KV), 4 skirted, #4-1/0	EA	175.47	28.63
2210	Cable term, 15KV, 2/0-3/0, stress cones (5-15KV), 4 skirted	EA	193.25	27.60
2220	Cable term, 15KV, 4/0-350 MCM stress cones (5-15KV), 4 skirted	EA	212.25	25.28
2230	Cable term, 15KV, 400-500 MCM stress cones (5-15KV), 4 skirted	EA	238.89	28.10
16153 2300 Single Conductor Pothead On Racks - Pothead Included				
2310	#2-#4/0 1/c 15KV PotHead(not incl),on Racks	EA	464.87	137.08
2320	250-500 MCM 1/c 15KV PotHead(not incl),on Racks	EA	593.74	169.17
16153 2400 Two Conductor Pothead On Rack Pothead Included				
2410	#2-#4/0 2/c 15KV PotHead(not incl),on Racks	EA	683.35	210.32
2420	250-500 MCM 2/c 15KV PotHead(not incl),on Racks	EA	822.52	249.05
16153 2600 Three Conductor Pothead On RackPothead Included				
2610	#2-#4/0 3/c 15KV PotHead(not incl),on Racks	EA	871.66	273.58
2620	250-500 MCM 3/c 15KV PotHead(not incl),on Racks	EA	1,085.69	343.02
16153 2700 Stress Relief Cone On Rack Cone Not Included				
2710	#2-#4/0 Stress Rlf Cone On Rack Cone not incl	EA	435.70	138.43
2720	250-500 MCM Str Rlf Cone On Rack Cone not incl	EA	509.99	173.31
16153 2800 Stress Cones - 5 - 15 Kv, 6 Skirted				
2810	#4-1/0 Stress Cones,5-15 KV 6 Skirted	EA	521.40	84.30
2820	#2/0-3/0 Stress Cones,5-15 KV 6 Skirted	EA	594.47	84.12
2830	#4/0-350MCM Stress Cones,5-15 KV 6 Skirted	EA	703.26	103.31
2840	400-500 MCM Stress Cones,5-15 KV 6 Skirted	EA	912.25	102.70
16153 2999 35 KV, cable splice				
3000	Cable term, 35KV, cable splice, stranded, #1-4/0	EA	766.99	257.79
16153 3999 70 KV, cable splice				
4000	Cable term, 70KV, cable splice, #2-4/0	EA	8,310.54	257.79
4100	Cable term, 70KV, cable splice, 350 MCM	EA	11,789.71	337.95
16180 Grounding				
16181 0010 Grounding devices				
16181 0029 Rod				
0030	Grounding, rod, copper clad, 8' long, 1/2" dia	EA	67.46	20.57
0080	Grounding, rod, copper clad, 10' long, 1/2" dia	EA	77.26	26.67
0090	Grounding, rod, copper clad, 10' long, 5/8" dia	EA	82.00	26.63
0100	Grounding, rod, copper clad, 10' long, 3/4" dia	EA	96.35	23.15
16181 0229 Clamp				
0230	Grounding, clamp, bronze, 1/2" dia	EA	12.51	5.43
0240	Grounding, clamp, bronze, 5/8" dia	EA	12.97	4.97
0250	Grounding, clamp, bronze, 3/4" dia	EA	14.31	4.79
16181 0260 Pipe Clamps, Bronze				
0270	1/2" To 1" Pipe Gnd Clamps, Bronze	EA	40.28	19.22
0280	1-1/4" To 2" Pipe Gnd Clamps, Brz	EA	52.65	18.97

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0290	2-1/2" To 3" Pipe Gnd Clamps, Brz	EA	80.05	24.68
0300	2-1/2" To 4" Pipe Gnd Clamps, Brz	EA	82.29	24.57
0310	4" To 6" Pipe Gnd Clamps, Bronze	EA	115.61	28.92
3505	Grounding Wire Splice, CU To Al, 4/0 - 300MCM	EA	70.73	28.07
16181 5999 Wre, laid in trench Backfill Excluded				
16181 5999 Copper, bare stranded				
6000	Grounding, laid in trench, copper, bare stranded, #4	MF	611.10	
6001	12AWG, Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	166.99	
6002	10AWG, Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	213.22	
6003	8AWG, Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	259.73	
6004	6AWG, Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	342.39	
6010	Grounding, laid in trench, copper, bare stranded, #2	MF	910.89	
6011	1AWG, Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	780.74	
6012	1/0 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	913.76	
6020	Grounding, laid in trench, copper, bare stranded, 2/0	MF	1,595.22	
6030	Grounding, laid in trench, copper, bare stranded, 4/0	MF	2,518.15	
6031	3/0 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,542.63	
6032	250 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	2,095.96	
16181 6033 Bonding Jumper For Metallic Conduit				
6033	300 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	2,111.78	
6034	350 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	2,809.42	
6035	500 MCM Bare Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	3,811.54	
6036	2-1/2" To 4" Cnd, Bndg Jmpr-Mtl Cnd	EA	143.35	
6037	5" & 6" Cnd, Bndg Jmpr-Mtl Cnd	EA	225.42	
16181 6039 Copper, bare solid				
6040	Grounding, laid in trench, copper, bare solid, #12	MF	197.54	
6042	10AWG, Bare Solid Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	213.22	
6044	8AWG, Bare Solid Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	259.73	
6046	6AWG, Bare Solid Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	342.39	
6050	Grounding, laid in trench, copper, bare solid, #4	MF	599.48	
6060	Grounding, laid in trench, copper, bare solid, #2	MF	899.27	
6062	1/0AWG, Bare Solid Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	913.76	
6070	Grounding, laid in trench, copper, bare solid, 4/0	MF	1,960.41	
16181 6079 Flexible braid connector, 100 A				
6079	800A, Flexible Braid Connector	LF	190.84	
6080	Grounding, flexible braid connector, 100 A	LF	82.86	
16181 6081 Insulated Stranded Conductors				
6082	12AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	287.97	
6083	10AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	313.60	
6084	8AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	395.65	
6085	6AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	455.56	
6086	4AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	603.85	
6087	2AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	837.11	
6088	1AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,003.63	
6089	1/0AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,216.35	
6090	2/0AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,413.10	
6091	3/0AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,667.77	
6092	4/0AWG, Insulated Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,953.65	
6093	250 MCM Insul Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	2,342.12	
6094	300 MCM Insul Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	2,713.75	
6095	350 MCM Insul Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	3,209.93	
6096	500 MCM Insul Stranded Cu 1/c Laid in Trench, w/o Trnhg & Bfill	MF	4,149.94	
16181 6099 Ground insert				
6100	Grounding, gnd insert, 2-3/8" x 16" holes, #2-250 MCM cable	EA	151.86	
6120	Grounding, gnd insert, 4-3/8" x 16" holes, #2-250 MCM cable	EA	151.86	
6130	Grounding, gnd insert, 4-3/8" x 16" holes, 250-500 MCM cable	EA	175.10	
16181 6250 Aluminum Bare Stranded Conductors				
6252	8AWG, Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	257.65	
6254	6AWG, Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	289.54	
6256	4AWG, Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	339.43	
6258	2AWG, Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	443.59	
6260	1AWG, Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	532.15	
6262	1/0 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	609.86	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6264	2/0 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	701.75	
6266	3/0 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	819.41	
6268	4/0 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	970.54	
6270	250 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,103.27	
6272	300 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,359.24	
6274	350 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,573.47	
6276	500 MCM Bare Stranded Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,840.99	
16181 6280 Aluminum Bare Solid Conductors				
6281	8AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	257.65	
6282	6AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	289.54	
6283	4AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	339.43	
6284	2AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	443.59	
6285	1AWG, Bare Solid Alum 1/c Laid In Trench, w/o Trnhg & Bfill	MF	519.61	
6286	1/0AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	609.86	
6287	2/0AWG, Bare Solid Alum 1/c Laid In Trench, w/o Trnhg & Bfill	MF	670.68	
6288	3/0AWG, Bare Solid Alum 1/c Laid In Trench, w/o Trnhg & Bfill	MF	756.84	
6289	4/0AWG, Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	970.54	
6290	250 MCM Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,103.27	
6291	300 MCM Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,359.24	
6292	350 MCM Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,573.47	
6293	500 MCM Bare Solid Alum 1/c Laid in Trench, w/o Trnhg & Bfill	MF	1,840.99	
16181 6299 Ground conductor bonding, cadweld				
6300	Grounding, gnd conductor bond, #8-#1, splice or lug, cadweld	EA	45.24	17.05
6302	#1/0-3/0AWG Cadweld Splice/Lug Ground Conductor Bonding	EA	43.64	20.61
6310	Grounding, gnd conductor bond, 4/0-300 MCM splice or lug,	EA	67.26	26.96
6312	350-500 MCM Cadweld Splc/Lug Ground Conductor Bonding	EA	70.75	20.15
6320	Grounding, gnd conductor bond, #8-#1, tee or wye, cadweld	EA	54.84	26.11
6322	#1/0-3/0AWG Cadweld Tee Or Wye Ground Conductor Bonding	EA	52.21	20.72
6330	Grounding, gnd conductor bond, 4/0-300 MCM tee or wye, cadweld	EA	77.97	27.06
6332	350-500 MCM Cadweld Tee Or Wye Ground Conductor Bonding	EA	72.53	31.35
6340	Grounding, gnd conductor bond, #8-#1, cross/ground rod, cadweld	EA	62.10	28.95
6342	#1/0-3/0AWG Cdwld Cross/Gnd Rod Ground Conductor Bonding	EA	60.52	24.28
6350	Grounding, gnd conductor bond, 4/0-300 MCM cross/ground rod,	EA	87.95	42.62
6352	350-500 MCM Cdwld Cross/Gnd Rod Ground Conductor Bonding	EA	91.01	34.06
6360	Grounding, gnd conductor bond, #8-#1, steel rebar, cadweld	EA	53.89	19.83
6362	#1/0-3/0AWG Cadweld Steel Rebar Ground Conductor Bonding	EA	58.58	19.54
6370	Grounding, gnd conductor bond, 4/0-300 MCM steel rebar,	EA	72.27	21.32
6372	350-500 MCM Cadweld Steel Rebar Ground Conductor Bonding	EA	75.46	19.93
6380	Grounding, gnd conductor bond, #8-#1, structural steel, cadweld	EA	94.38	39.90
6382	#1/0-3/0AWG Cadweld Strl Steel Ground Conductor Bonding	EA	106.26	40.68
6390	Grounding, gnd conductor bond, 4/0-300 MCM structural steel,	EA	126.30	42.97
6392	350-500 MCM Cadweld Strl Steel Ground Conductor Bonding	EA	120.42	40.90
16181 6399 Ground reel with 50' of galvanized steel cable				
6400	Grounding, gnd reel with 50' of galv steel cable	EA	344.37	
16181 6409 Copper bar				
6410	Grounding, copper bar, 1/4" x 2"	LF	15.92	
16181 6419 Phenolic insulator				
6420	Grounding, phenolic insulator, 2" x 2" x 1" long	EA	14.10	
16181 6429 Ball grounding stud				
6430	Grounding, ball grounding stud	EA	17.61	
16181 6500 Grounding				
16181 6500 Exothermic Weld Handles, Mlds, & Shots				
6501	Grounding Wire Splice, CU To Al, #8 - 1AWG	EA	50.14	
6502	Exothermic Weld Mld Handles	EA	36.68	
6503	Grounding Wire Splice, CU To Al, 1/0 - 3/0	EA	59.97	
6504	Exothermic Mld, Cable Splice	EA	36.61	
6506	Exothermic Mld, Tee or Wye	EA	40.18	
6507	Grounding Wire Splice, CU To Al, 350MCM - & Up	EA	80.66	
6508	Exothermic Mld, Cross or Ground Rod	EA	43.75	
6510	Exothermic Mld, To Steel Rebar	EA	47.31	
6512	Exothermic Mld, To Structural Steel	EA	54.44	
6514	Exothermic Weld Shot, #60	EA	46.23	
6516	Exothermic Weld Shot, #70	EA	62.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6518	Exothermic Weld Shot, #90	EA	57.67	
6520	Exothermic Weld Shot, #115	EA	63.52	
6522	Exothermic Weld Shot, #150	EA	69.42	
6524	Exothermic Weld Shot, #200	EA	75.35	

16200 Boxes & Wiring Devices

16210 Boxes

16211 0010 Outlet boxes, pressed steel

16211 0019 Octagon

0020	Outlet boxes, pressed steel, octagon, 4"	EA	15.75	7.66
0150	Outlet boxes, pressed steel, square, 4"	EA	16.21	7.66
0300	Outlet boxes, pressed steel, square, 4", plaster rings	EA	5.65	2.41

16211 0310 4 In Octagonal Concrete Rings With Plates, To Be Placed In Concrete Slabs Or Walls

0312	4"Oct Conc Rings x 2"Depth, w/Plt (51mm)Depth, Outlet Box w/Plates	EA	23.60	8.45
0314	4"Oct Conc Rings x 2-1/2"Depth, w (63mm)Depth, Outlet Box w/Plates	EA	24.99	8.45
0316	4"Oct Conc Rings x 3"Depth, w/Plt (76mm)Depth, Outlet Box w/Plates	EA	26.71	10.17
0318	4"Oct Conc Rings x 3-1/2"Depth, w (88mm)Depth, Outlet Box w/Plates	EA	30.39	10.06
0320	4"Oct Conc Rings x 4"Depth, w/Plt (10cm)Depth, Outlet Box w/Plates	EA	34.51	13.30
0322	4"Oct Conc Rings x 5"Depth, w/Plt (12.5cm)Depth, Outlet Box w/Plat	EA	38.17	13.27
0324	4"Oct Conc Rings x 6"Depth, w/Plt (15cm)Depth, Outlet Box w/Plates	EA	38.64	13.45

16211 0349 Square

0550	Outlet boxes, pressed steel, handy box	EA	12.26	4.93
1350	Outlet boxes, pressed steel, carpet flange, 1 gang	EA	54.85	2.41

16211 3499 Square, with cover

16211 3499 Exposed

3500	Outlet boxes, square, 4", w/cover, exposed, 1.5" deep	EA	17.65	7.67
3520	Outlet boxes, square, 4", w/cover, exposed, 2-1/8" deep	EA	19.07	7.56

16211 3699 Concealed

3700	Outlet boxes, square, 4", w/cover, concealed, 1.5" deep	EA	21.31	9.30
3720	Outlet boxes, square, 4", w/cover, concealed, 2-1/8" deep	EA	22.73	8.63
3722	4" Sq Box x 1-1/2" Dp w/Cvr, Cncl Outlet Box w/ 2 Gang PL.	EA	20.91	9.27
3724	4" Sq Box x 2-1/8" Dp w/Cvr, Cncl Outlet Box w/ 1 Gang PL.	EA	21.54	9.27
3726	4" Sq Box x 2-1/8" Dp w/Cvr, Cncl Outlet Box w/2 Gang PL.	EA	21.87	9.27
3727	Outlet Box, WP, 1 Gang, 4-1/2"x 2-5/8" Box, Concealed, 3/4" KO	EA	33.62	13.03

16211 3999 Solid, with cover

16211 3999 Exposed

4000	Outlet boxes, solid, exposed, 1 gang, 4.5"x 1-5/8", 3/4" KO,	EA	16.33	7.38
4020	Outlet boxes, solid, exposed, 2 gang, 4.5"x 1-5/8", 3/4" KO,	EA	34.15	7.77
4040	Outlet boxes, solid, exposed, 4 gang, 4.5"x 1-5/8", 3/4" KO,	EA	62.26	15.12
4060	Outlet boxes, solid, exposed, 6 gang, 4.5"x 1-5/8", 3/4" KO,	EA	130.83	31.70
4090	Outlet boxes, solid, exposed, 9 gang, 4.5"x 1-5/8", 3/4" KO,	EA	256.72	40.79

16211 4499 Concealed

4500	Outlet boxes, solid, concealed, 1 gang, 4.5"x 1-5/8", 3/4" KO,	EA	17.07	7.24
4520	Outlet boxes, solid, concealed, 2 gang, 4.5"x 1-5/8", 3/4" KO,	EA	35.88	10.02
4540	Outlet boxes, solid, concealed, 4 gang, 4.5"x 1-5/8", 3/4" KO,	EA	63.55	17.40
4560	Outlet boxes, solid, concealed, 6 gang, 4.5"x 1-5/8", 3/4" KO,	EA	134.01	12.30
4590	Outlet boxes, solid, concealed, 9 gang, 4.5"x 1-5/8", 3/4" KO,	EA	256.72	40.79

16211 4999 Above floor service fitting & duplex receptacle

5000	Outlet boxes, above floor service fitting & duplex	EA	151.96	22.59
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16211 5600 Cast Outlet Boxes

5601	Floor Box, Embedded, Single Gang Cast Outlet Boxes	EA	138.85	18.11
5602	Flr Box, Two Gang, Embedded Cast Outlet Boxes	EA	238.49	20.86

16211 5700 Surface Mounted PVC Box w/Up Cover

5711	1/2" FS Type Surface Mtd. PVC Box w/ WP Cover	EA	37.18	12.84
5712	3/4" FS Type Surface mtd PVC Box w/ WP Cover	EA	40.76	13.94
5713	1" FS Type Surface mtd PVC Box w/ WP Cover	EA	44.95	15.69

16211 5800 Msc. Switch Boxes

5801	2-3/4" Dp Switch Boxes W/Conduit KO	EA	12.93	4.82
5802	3-1/2" Dp Switch Boxes W/Conduit KO	EA	14.17	4.82
5803	2-1/2" Dp Switch Boxes W Non- Metallic Clamps	EA	13.01	4.82
5804	3-1/2" Dp Switch Boxes W Non- Metallic Clamps	EA	14.24	4.82
5805	4-11/16" Square Box, 2-1/8" Dp	EA	15.17	4.82

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16211 5900	4-1/2 In X 1-5/8 In Solid Gang Box WCover, 3/4 In KD - Concealed			
5901	Outlet Box, WP, 1 Gang, 4-1/2"x 2-5/8" Box, Concealed, 3/4" KO	EA	34.47	7.84
16211 5990	4-1/2 In X 1-5/8 In Solid Gang Box WCover, 3/4 In KD - Exposed			
5991	Outlet Box, WP, 1 Gang, 4-1/2"x 2-5/8" Box, Exp, 3/4" KO	EA	32.58	7.70
16213 0010	Pull boxes & cabinets, metal			
16213 0099	Sheet metal, pull box			
16213 0099	NEMA 1, type SC			
0100	Pull box, sheet metal, NEMA 1, type SC, 6"W x 6"H x 4"D	EA	44.37	16.88
0105	Pull box, sheet metal, NEMA 1, type SC, 4"W x 4"H x 4"D	EA	41.18	11.03
0180	Pull box, sheet metal, NEMA 1, type SC, 6"W x 8"H x 4"D	EA	45.94	17.66
0205	Pull box, sheet metal, NEMA 1, type SC, 10"W x 8"H x 4"D	EA	53.39	17.70
0215	Pull box, sheet metal, NEMA 1, type SC, 12"W x 10"H x 4"D	EA	59.04	20.64
0220	Pull box, sheet metal, NEMA 1, type SC, 12"W x 12"H x 4"D	EA	68.00	22.09
0225	Pull box, sheet metal, NEMA 1, type SC, 15"W x 12"H x 4"D	EA	69.09	20.64
0232	Pull box, sheet metal, NEMA 1, type SC, 18"W x 12"H x 4"D	EA	73.63	20.25
0236	Pull box, sheet metal, NEMA 1, type SC, 18"W x 15"H x 4"D	EA	102.64	25.96
0250	Pull box, sheet metal, NEMA 1, type SC, 6"W x 6"H x 6"D	EA	46.24	12.34
0260	Pull box, sheet metal, NEMA 1, type SC, 8"W x 8"H x 6"D	EA	52.51	19.93
0270	Pull box, sheet metal, NEMA 1, type SC, 10"W x 10"H x 6"D	EA	70.69	24.50
0310	Pull box, sheet metal, NEMA 1, type SC, 12"W x 12"H x 6"D	EA	78.84	29.32
0315	Pull box, sheet metal, NEMA 1, type SC, 15"W x 12"H x 6"D	EA	104.08	28.23
0330	Pull box, sheet metal, NEMA 1, type SC, 18"W x 18"H x 6"D	EA	110.82	31.10
0340	Pull box, sheet metal, NEMA 1, type SC, 24"W x 24"H x 6"D	EA	176.16	41.81
0380	Pull box, sheet metal, NEMA 1, type SC, 24"W x 18"H x 6"D	EA	144.56	27.30
0505	Pull box, sheet metal, NEMA 1, type SC, 24"W x 18"H x 8"D	EA	210.01	37.27
0510	Pull box, sheet metal, NEMA 1, type SC, 24"W x 24"H x 8"D	EA	186.36	34.11
0600	Pull box, sheet metal, NEMA 1, type SC, 24"W x 36"H x 8"D	EA	227.08	34.89
0605	Pull box, sheet metal, NEMA 1, type SC, 30"W x 24"H x 8"D	EA	279.35	44.40
0610	Pull box, sheet metal, NEMA 1, type SC, 30"W x 30"H x 8"D	EA	265.42	33.69
16213 0639	NEMA 1, type SC, concealed			
0640	Pull box, sheet metal, 4" W x 4" H x 4" D, NEMA 1, type SC, cncl	EA	44.58	12.98
0641	4" x 4" x 2" J-Boxes w/Cvrs, Cncl	EA	35.49	13.16
0642	Pull box, sheet metal, 6" W x 6" H x 6" D, NEMA 1, type SC, cncl	EA	49.64	12.87
16213 0649	Hinged cabinets, NEMA 1			
0650	Cabinet, hinged, sheet metal, NEMA 1, 6"W x 6"H x 4"D	EA	43.77	13.44
0655	Cabinet, hinged, sheet metal, NEMA 1, 4"W x 4"H x 4"D	EA	43.59	12.80
0660	Cabinet, hinged, sheet metal, NEMA 1, 8"W x 8"H x 4"D	EA	47.92	24.54
0670	Cabinet, hinged, sheet metal, NEMA 1, 10"W x 10"H x 4"D	EA	56.97	25.92
0672	10x8x4 NEMA 1 Box, Hinged Cvr	EA	41.08	8.59
0676	Cabinet, hinged, sheet metal, NEMA 1, 8"W x 12"H x 4"D	EA	56.91	24.04
0686	Cabinet, hinged, sheet metal, NEMA 1, 12"W x 14"H x 4"D	EA	77.09	26.28
0688	12x8x4 NEMA 1 Box, Hinged Cvr	EA	44.01	17.12
0710	Cabinet, hinged, sheet metal, NEMA 1, 6"W x 6"H x 6"D	EA	46.44	25.46
0716	Cabinet, hinged, sheet metal, NEMA 1, 8"W x 6"H x 6"D	EA	49.62	24.08
1610	Cabinet, hinged, sheet metal, NEMA 1, 36"W x 36"H x 8"D	EA	432.33	60.28
1612	15x12x4 NEMA 1 Box, Hinged Cvr	EA	53.34	13.37
16213 1709	Hinged cabinets, NEMA 3R, double door			
1710	Cabinet, hinged, 36"W x 30"H x 12"D, sheet met, dbl dr, NEMA 3R	EA	536.83	53.37
1720	Cabinet, hinged, 42"W x 36"H x 12"D, sheet met, dbl dr, NEMA 3R	EA	676.56	60.71
16213 2100	NEMA 3R, type SC, raintight & weatherproof			
2140	Pull box, sh met, 6"L x 4"W x 4"D, NEMA 3R, type SC, RT &	EA	43.48	18.80
2200	Pull box, sh met, 8"L x 6"W x 6"D, NEMA 3R, type SC, RT &	EA	55.79	16.63
2210	Pull box, sh met, 8"L x 8"W x 6"D, NEMA 3R, type SC, RT &	EA	60.27	15.60
2260	Pull box, sh met, 10"L x 8"W x 6"D, NEMA 3R, type SC, RT &	EA	69.03	16.49
2280	Pull box, sh met, 10"L x 10"W x 6"D, NEMA 3R, type SC, RT &	EA	80.34	21.14
2290	Pull box, sh met, 12"L x 10"W x 6"D, NEMA 3R, type SC, RT &	EA	85.60	19.89
2360	Pull box, sh met, 18"L x 12"W x 6"D, NEMA 3R, type SC, RT &	EA	111.49	25.43
2380	Pull box, sh met, 18"L x 18"W x 6"D, NEMA 3R, type SC, RT &	EA	139.62	24.11
2410	Pull box, sh met, 24"L x 18"W x 6"D, NEMA 3R, type SC, RT &	EA	163.35	28.19
2420	Pull box, sh met, 12"L x 12"W x 8"D, NEMA 3R, type SC, RT &	EA	122.97	21.95
2430	Pull box, sh met, 18"L x 12"W x 8"D, NEMA 3R, type SC, RT &	EA	135.08	19.75
2440	Pull box, sh met, 18"L x 15"W x 8"D, NEMA 3R, type SC, RT &	EA	148.08	17.52
2450	Pull box, sh met, 24"L x 18"W x 8"D, NEMA 3R, type SC, RT &	EA	193.33	23.12

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2460	Pull box, sh met, 30"L x 24"W x 8"D, NEMA 3R, type SC, RT &	EA	245.79	31.06
2500	Pull box, sh met, 24"L x 24"W x 10"D, NEMA 3R, type SC, RT &	EA	391.00	50.78
16213 2609 NEMA 3R, hinged pull box				
2610	Pull box, hinged, sheet metal, NEMA 3R, 8"W x 8"H x 6"D	EA	76.51	14.79
2620	Pull box, hinged, sheet metal, NEMA 3R, 8"W x 10"H x 6"D	EA	86.11	14.96
2630	Pull box, hinged, sheet metal, NEMA 3R, 10"W x 12"H x 6"D	EA	99.36	19.64
2640	Pull box, hinged, sheet metal, NEMA 3R, 12"W x 12"H x 6"D	EA	108.25	19.68
2650	Pull box, hinged, sheet metal, NEMA 3R, 12"W x 16"H x 6"D	EA	130.76	28.33
2660	Pull box, hinged, sheet metal, NEMA 3R, 18"W x 24"H x 8"D	EA	300.99	41.67
2670	Pull box, hinged, sheet metal, NEMA 3R, 24"W x 30"H x 8"D	EA	410.41	58.79
2680	Pull box, hinged, sheet metal, NEMA 3R, 30"W x 30"H x 12"D	EA	614.09	60.50
2690	Pull box, hinged, sheet metal, NEMA 3R, 24"W x 36"H x 12"D	EA	652.97	85.21
2700	Pull box, hinged, sheet metal, NEMA 3R, 30"W x 36"H x 12"D	EA	814.61	82.13
2710	Pull box, hinged, sheet metal, NEMA 3R, 36"W x 36"H x 12"D	EA	925.93	81.77
2720	Pull box, hinged, sheet metal, NEMA 3R, 30"W x 42"H x 12"D	EA	899.81	80.46
16213 2729 Steel, pull box				
16213 2729 NEMA 4 hinged box				
2730	Pull box, hinged, steel, NEMA 4, 4"W x 4"H x 3"D	EA	63.98	14.61
2732	Pull box, hinged, steel, NEMA 4, 4"W x 6"H x 3"D	EA	70.32	16.31
2734	Pull box, hinged, steel, NEMA 4, 6"W x 8"H x 3.5"D	EA	81.48	15.99
2736	Pull box, hinged, steel, NEMA 4, 6"W x 6"H x 4"D	EA	80.96	16.42
2738	Pull box, hinged, steel, NEMA 4, 8"W x 10"H x 4"D	EA	98.43	17.34
2740	Pull box, hinged, steel, NEMA 4, 10"W x 12"H x 5"D	EA	117.58	20.46
2742	Pull box, hinged, steel, NEMA 4, 8"W x 10"H x 6"D	EA	109.68	20.57
2744	Pull box, hinged, steel, NEMA 4, 12"W x 12"H x 6"D	EA	132.27	31.56
2746	Pull box, hinged, steel, NEMA 4, 12"W x 14"H x 6"D	EA	157.59	31.73
2748	Pull box, hinged, steel, NEMA 4, 14"W x 16"H x 6"D	EA	185.70	31.84
16213 2749 NEMA 4 clamp cover				
2750	Pull box, steel, clamp cover NEMA 4, 4"W x 4"H x 3"D	EA	63.80	8.83
2752	Pull box, steel, clamp cover NEMA 4, 6"W x 6"H x 4"D	EA	78.01	8.48
16213 2755 Stainless steel, clamp cover NEMA 4				
2756	Pull box, sst, clamp cover NEMA 4, 4"W x 4"H x 3"D	EA	120.92	7.62
2758	Pull box, sst, clamp cover NEMA 4, 6"W x 6"H x 4"D	EA	143.71	6.35
16213 2759 Aluminum clamp cover NEMA 4				
2760	Pull box, aluminum clamp cover NEMA 4, 4"W x 6"H x 3"D	EA	100.58	6.17
2762	Pull box, aluminum clamp cover NEMA 4, 6"W x 6"H x 4"D	EA	113.73	6.24
16213 2800 Cast iron, pull boxes				
16213 3000 NEMA 4, watertight & dust tight				
3050	Pull box, CI, 6"L x 6"W x 6"D, surf mtg, NEMA 4, water & dust	EA	210.36	48.26
3100	Pull box, CI, 8"L x 6"W x 6"D, surf mtg, NEMA 4, water & dust	EA	278.05	38.58
3110	Pull box, CI, 8"L x 8"W x 6"D, surf mtg, NEMA 4, water & dust	EA	274.26	32.94
3160	Pull box, CI, 10"L x 8"W x 6"D, surf mtg, NEMA 4, water & dust	EA	353.21	42.73
3180	Pull box, CI, 10"L x 10"W x 6"D, surf mtg, NEMA 4, water & dust	EA	396.67	47.62
3190	Pull box, CI, 12"L x 10"W x 6"D, surf mtg, NEMA 4, water & dust	EA	451.06	46.34
3200	Pull box, CI, 12"L x 12"W x 6"D, surf mtg, NEMA 4, water & dust	EA	539.23	56.88
3220	Pull box, CI, 16"L x 12"W x 6"D, surf mtg, NEMA 4, water & dust	EA	682.38	64.61
3250	Pull box, CI, 16"L x 16"W x 6"D, surf mtg, NEMA 4, water & dust	EA	1,002.55	83.58
3300	Pull box, CI, 20"L x 20"W x 6"D, surf mtg, NEMA 4, water & dust	EA	1,865.15	150.03
3350	Pull box, CI, 24"L x 18"W x 8"D, surf mtg, NEMA 4, water & dust	EA	1,994.83	197.16
3400	Pull box, CI, 24"L x 24"W x 10"D, surf mtg, NEMA 4, water & dust	EA	2,908.72	212.83
3410	Pull box, CI, 12"L x 12"W x 12"D, surf mtg, NEMA 4, water & dust	EA	986.67	163.79
3420	Pull box, CI, 18"L x 18"W x 12"D, surf mtg, NEMA 4, water & dust	EA	1,768.39	185.81
3430	Pull box, CI, 24"L x 24"W x 12"D, surf mtg, NEMA 4, water & dust	EA	2,965.21	226.52
3500	Pull box, CI, 36"L x 36"W x 12"D, surf mtg, NEMA 4, water & dust	EA	6,472.94	467.11
16213 4000 NEMA 7, explosionproof				
4600	Pull box, CI, 18"L x 12"W x 10"D, surf mtg, NEMA 7, explosionproo	EA	1,912.30	142.64
4610	NEMA 7 Pull Box 6"Lx6"Wx6"D	EA	563.51	
4620	NEMA 7 Pull Box 10"Lx10"Wx10"D	EA	656.56	
16213 7000 Cabinets				
16213 7000 Current transformer				
7500	Cabinet, current transformer, 48"H x 36"W x 10"D, double door	EA	879.49	245.84
16213 8000 NEMA 12, double door				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8040	Cabinet, NEMA 12, 60" H x 48" W x 8" D, double dr, floor mtd	EA	1,035.80	24.11
8060	Cabinet, NEMA 12, 60" H x 48" W x 10" D, double dr, floor mtd	EA	1,066.01	23.97
8080	Cabinet, NEMA 12, 60" H x 60" W x 10" D, double dr, floor mtd	EA	1,189.45	25.50
8090	Cabinet, NEMA 12, 62" H x 48" W x 10" D, double dr, floor mtd	EA	1,184.80	58.12
8100	Cabinet, NEMA 12, 72" H x 60" W x 10" D, double dr, floor mtd	EA	1,373.52	32.09
8120	Cabinet, NEMA 12, 72" H x 72" W x 10" D, double dr, floor mtd	EA	1,537.99	32.16
8140	Cabinet, NEMA 12, 60" H x 48" W x 12" D, double dr, floor mtd	EA	1,156.86	41.20
8160	Cabinet, NEMA 12, 60" H x 60" W x 12" D, double dr, floor mtd	EA	1,286.98	41.06
8170	Cabinet, NEMA 12, 62" H x 60" W x 12" D, double dr, floor mtd	EA	1,322.04	56.67
8180	Cabinet, NEMA 12, 72" H x 60" W x 12" D, double dr, floor mtd	EA	1,457.99	40.81
8200	Cabinet, NEMA 12, 72" H x 72" W x 12" D, double dr, floor mtd	EA	1,602.07	40.53
8322	Cabinet, NEMA 12, 60" H x 48" W x 18" D, double dr, floor mtd	EA	1,763.58	40.50
8324	Cabinet, NEMA 12, 72" H x 48" W x 18" D, double dr, floor mtd	EA	2,053.12	74.75
16213 8330 NEMA 4, single door				
8332	Cabinet, NEMA 4, 60"H x 48"W x 18"D, single door, free standing	EA	1,363.69	32.20
8334	Cabinet, NEMA 4, 72"H x 25"W x 24"D, single door, free standing	EA	1,639.25	40.78
8336	Cabinet, NEMA 4, 72"H x 31"W x 24"D, single door, free standing	EA	1,775.20	40.81
16213 8400 NEMA 4x Fiberglass Enclosures				
8410	20"Hx20"Wx6"D Wall Munted Encl. NEMA 4X Fiberglass	EA	412.07	
8420	20"Hx20"Wx8"D Wall Munted Encl. NEMA 4X Fiberglass	EA	458.59	
8430	24"Hx24"Wx8"D Wall Munted Encl. NEMA 4X Fiberglass	EA	508.12	
8440	24"Hx20"Wx10"D Wall Munted Encl NEMA 4X Fiberglass	EA	548.83	
8450	24"Hx24"Wx12"D Wall Munted Encl NEMA 4X Fiberglass	EA	617.00	
8460	36"Hx30"Wx12"D Wall Munted Encl NEMA 4X Fiberglass	EA	739.17	
16213 8569 Consolet				
8570	Cabinet, consolet, counter munted, 20" x 24", oil tight	EA	273.15	49.75
16213 9699 Cabinet legend plate				
9700	Cabinet, legend plate, 3", phenolic plastic	EA	6.05	1.64
9710	Cabinet, legend plate, 3", engraved aluminum	EA	7.38	1.61
16214 0010 Pull boxes & cabinets, nonmetallic				
8000	Wireway fbgl, str sect screwcover, 12"L, 4"W x 4"D	EA	109.34	3.19
8080	Wireway fbgl, str sect screwcover, 60"L, 4"W x 4"D	EA	251.59	15.96
8090	Wireway fbgl, str sect screwcover, 60"L, 6"W x 6"D	EA	404.00	21.28
16223 0500 Receptacle Plug Regular or Locking				
0501	NEMA 5-15 To NEMA L5-30	EA	18.15	
0502	NEMA 5-50 To NEMA L5-50	EA	25.13	
0503	NEMA 6-15 To NEMA L6-30	EA	20.95	
0504	NEMA 6-50 To NEMA L6-50	EA	29.08	
0505	NEMA 10-20 To NEMA L10-30	EA	23.27	
0506	NEMA 10-50 To NEMA L10-50	EA	30.24	
0507	NEMA 14-15 To NEMA L14-30	EA	30.24	
0508	NEMA 14-50 To NEMA L14-60	EA	48.28	
0509	NEMA 18-15 To NEMA L18-30	EA	30.24	
0510	NEMA 18-50 To NEMA L18-60	EA	50.60	
16230 Wiring Devices				
JOC Note: All Concealed Items listed As Complete Include The Following: Outlet Device Cover Plate Plaster Ring Appropriate Box And Munting. All Exposed Items Listed As Complete Include The Following: Outlet Device, Coverplate, Box And Munting.				
16232 0010 Wiring devices				
16232 1419 Toggle switch quiet type				
1420	Wiring device, toggle sw quiet type, 2 throw center off, 15A, 1	EA	58.81	8.26
1480	Wiring device, toggle sw quiet type, momentary contact, 15A, 1	EA	34.06	8.26
1500	Wiring device, toggle sw quiet type, momentary contact, 20A, 1	EA	42.14	10.60
1501	SPST, EP, 120V, 20A, Cncl Specialty Devices	EA	178.92	11.66
1502	3-way Sw, EP, 120V, 20A, Cncl Specialty Devices	EA	257.15	26.89
1503	Momentary Cont Sw, EP, 120V, Cncl Specialty Devices	EA	259.42	26.53
16232 2159 Explosionproof				
16232 2159 Toggle switch				
2160	Wiring device, explosionproof, 1 p, 20 amp, toggle switch, wall	EA	150.23	9.82
2170	Wiring device, explosionproof, 3 way 20 amp, toggle switch, wall	EA	168.55	18.01
16232 2179 Receptacle				
2180	Wiring device, explosionproof, 20 amp, receptacle, single outlet	EA	256.86	14.22
16232 2459 Receptacle				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2482	Wiring device, receptacle, gnd fault intrpt, 20 amp, duplex	EA	45.83	3.87
2530	Wiring device, receptacle, surge suppressor, duplex, 20 amp	EA	55.01	3.87
2540	Wiring device, receptacle, isolated ground, duplex, 20 amp	EA	32.18	3.87
2550	Wiring device, receptacle, isolated ground, simplex, 20 amp	EA	33.40	4.01
2560	Wiring device, receptacle, isolated ground, simplex, 30 amp	EA	45.64	9.64
16232 2599 Wall plates				
2600	Wiring device, wall plates, sst, 1 gang	EA	5.53	1.67
3110	Wiring device, wall plates, brown plastic, 1 gang	EA	4.21	1.67
16232 3599 Power receptacle				
3600	Wiring device, receptacle, 20 amp, 250 volt NEMA 6	EA	22.71	2.84
3610	Wiring device, receptacle, 30 Am p 250 V, NEMA 6	EA	32.36	
3620	Wiring device, receptacle, 20 Am p 277V, NEMA 7	EA	27.71	
3630	Wiring device, receptacle, 30 Am p 277V NEMA 7	EA	40.01	
3640	Wiring device, receptacle, 20 Am p 125/250V NEMA 10	EA	27.71	
3650	Wiring device, receptacle, 30 Am p 125/250V NEMA 10	EA	40.01	
3660	Wiring device, receptacle, 20 Am p 120/208V NEMA 18	EA	36.02	
3740	Wiring device, receptacle, 30 amp, 125 volt NEMA 5	EA	34.95	13.01
3830	Wiring device, receptacle, NEMA 18-30R, 30 amp, 120/208 volt	EA	55.20	12.16
3880	Wiring device, receptacle, 50 amp, 125 volt NEMA 5	EA	46.71	13.30
3900	Wiring device, receptacle, 50 amp, 250 volt NEMA 6	EA	47.87	13.30
3920	Wiring device, receptacle, 50 amp, 277 volt NEMA 7	EA	53.21	13.83
4020	Wiring device, receptacle, 60 amp, 125/250 volt, NEMA 14	EA	100.53	20.57
4060	Wiring device, receptacle, 120/208 volt NEMA 18, 60 amp, 3 pole	EA	100.53	20.57
4440	Wiring device, receptacle, 30 amp, 125 volt NEMA L5, locking	EA	43.31	13.01
4450	Power Outlet, Nema 3R-2-20A Rece pt. 2-20A CB's		207.77	
16232 4839 Receptacle, corrosion resistant				
4840	Wiring device, rcpt, 125 volt NEMA L5, corrosion res, 15 or 20 amp	EA	37.82	3.87
4860	Wiring device, rcpt, 250 volt NEMA 16, corrosion res, 15 or 20 amp	EA	37.24	1.60
16232 4900 Removal & Reinstallation Of Wiring Devices Includes Storage And Cleaning				
4910	Remove & Reinstall Receptacle, Switch, Outlet Or Special Sys	EA	12.62	
16233 0010 Wiring devices exposed, complete system				
16233 0099 Receptacle				
0100	Wiring device, exposed, duplex, receptacle, 120 volt, 20 amp	EA	32.98	8.08
0110	Wiring device, exposed, simplex, receptacle, 120 volt, 20 amp	EA	33.61	8.26
0120	Wiring device, exposed, rcpt, dryer, 230 volt, 30 amp	EA	58.64	12.06
0130	Wiring device, exposed, rcpt, range, 230 volt, 60 amp	EA	132.59	15.28
0140	Wiring device, exposed, 120 V, 20 amp, receptacle, clock hanger	EA	43.64	6.88
0150	Wiring device, exposed, 120V, 20 amp, rcpt, floor mount, duplex	EA	104.18	8.79
16233 0159 Switch				
0160	Wiring device, exposed, switch, 120 volt, 20 amp, SPST	EA	34.00	5.21
0170	Wiring device, exposed, switch, 120 volt, 20 amp, 3-way	EA	53.11	21.14
0180	Wiring device, exposed, switch, 120 volt, 20 amp, 4-way	EA	72.29	22.45
0190	Wiring device, exposed, switch, 120 volt, 20 amp, DPST	EA	57.53	29.26
0200	Wiring device, exposed, switch, 120 volt, 20 amp, thermal	EA	41.96	9.57
16233 0209 Telephone receptacle				
0210	Wiring device, exposed, telephone receptacle, blank	EA	16.60	4.71
0220	Wiring device, exposed, telephone receptacle, 4-pin	EA	29.59	15.21
0221	Telephone Blocks Inc 50 Terminat ors, Ext Ring, Markings, Id	EA	43.29	22.68
0222	Data Blocks Inc. Terminators, Ext Ring, Marking, Id & Testing	EA	57.08	22.68
0223	RJ-45 Duplex telephone Jack To Include 4"x4" Box	EA	24.50	7.00
0224	RJ-45 Quad Jack 4-Each Jack Includes 4"x4" Box	EA	42.34	15.18
0225	Terminating Boxes, Outside W/ 3 Element Protectors. Per Pair.	EA	17.14	2.17
0226	Telephone Receptacle, Cat 5 6 Po rt, 1 RJ45, 1 RJ11, 4 Blnk		33.64	
16233 0229 Dimmer switch				
0230	Wiring device, exposed, dimmer switch, 1 pole, 600 watt	EA	46.46	12.20
0240	Wiring device, exposed, dimmer switch, 1 pole, 1000 watt	EA	85.62	5.46
0250	Wiring device, exposed, dimmer switch, 1 pole, 1500 watt	EA	143.96	8.16
0260	Wiring device, exposed, dimmer switch, 1 pole, 2000 watt	EA	193.63	8.76
0261	Flourescent Dimmer Switch, 600W	EA	104.45	6.60
0262	Flourescent Dimmer Switch, 1000W	EA	155.51	5.28
0263	Flourescent Dimmer Switch, 1500W	EA	252.08	9.13
0264	Remote Speed Switch For Paddle Fan	EA	49.21	7.17
0265	Combination Remote Speed Switch/ Incandescent 600W Dimmer	EA	86.30	10.70

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16233 0269 Weatherproof receptacle				
0270	Wiring device, exposed, 20amp, duplex, wthprf rcpt, 120 volt	EA	53.06	15.57
0280	Wiring device, exposed, 20amp, simplex, wthprf rcpt, 120 volt	EA	54.28	15.78
0281	Duplex Rcpt, GFI 120V, 20 Amp, Exp, WP Device With Cover	EA	178.45	12.41
16233 0289 Weatherproof switch				
0290	Wiring device, exposed, 20 amp, SPST, wthprf switch, 120 volt	EA	54.04	11.49
0300	Wiring device, exposed, 20 amp, 3-way, wthprf switch, 120 volt	EA	74.80	27.80
0310	Wiring device, exposed, 20 amp, 4-way, wthprf switch, 120 volt	EA	93.97	27.80
16233 0350 Time Switches				
0352	125V, 40A, SPST Standard Time Switch	EA	85.47	17.54
0354	277V, 40A, SPST Standard Time Switch	EA	87.60	17.54
0356	125V, 40A, DPST Standard Time Switch	EA	85.47	17.54
0358	277V, 40A, DPST Standard Time Switch	EA	87.60	17.54
0360	125V, 40A, SPST 7-Day Time Switch	EA	99.70	17.54
0362	277V, 40A, SPST 7-Day Time Switch	EA	99.70	17.54
0364	125V, 40A, DPDT 7-Day Time Switch	EA	183.64	17.54
0366	277V, 40A, DPDT 7-Day Time Switch	EA	183.64	17.54
0368	125V, 20A, SPST Programable Time Switch	EA	156.71	17.54
0370	277V, 20A, SPST Programable Time Switch	EA	173.15	17.54
0372	125V, 40A, 4PST Astro Dial Time Switch	EA	212.02	17.54
0374	277V, 40A, 4PST Astro Dial Time Switch	EA	218.56	17.54
16233 0380 Time Switches - Weatherproof				
0382	125V, 40A, SPST Standard Time Switch - Weatherproof	EA	85.47	17.54
0384	277V, 40A, SPST Standard Time Switch - Weatherproof	EA	87.60	17.54
0386	125V, 40A, DPST Standard Time Switch - Weatherproof	EA	85.47	17.54
0388	277V, 40A, DPST Standard Time Switch - Weatherproof	EA	87.60	17.54
0390	125V, 40A, SPST 7-Day Time Switch - Weatherproof	EA	99.70	17.54
0392	277V, 40A, SPST 7-Day Time Switch - Weatherproof	EA	99.70	17.54
0394	125V, 40A, DPDT 7-Day Time Switch - Weatherproof	EA	183.64	17.54
0396	277V, 40A, DPDT 7-Day Time Switch - Weatherproof	EA	183.64	17.54
0398	125V, 40A, SPST 7-Day Time Switch - Weatherproof	EA	156.71	17.54
0400	277V, 20A, SPST Programable Time Switch - Weatherproof	EA	173.15	17.54
0402	125v 40A 4PST Astro Dial Time Switch - Weatherproof	EA	212.02	17.54
0404	277v 40A 4PST Astro Dial Time Switch - Weatherproof	EA	218.56	17.54
16233 0999 Power receptacle				
1000	Wiring device, exposed, 3 pole, 4 wire, rcpt, 100 amp, 480 volt	EA	399.69	37.84
16234 0010 Wiring devices concealed, complete system				
16234 0099 Receptacle				
0100	Wiring device, concealed, duplex, rcpt, 120 volt, 20 amp	EA	35.13	8.94
0110	Wiring device, concealed, simplex, rcpt, 120 volt, 20 amp	EA	35.76	9.26
0120	Wiring device, concealed, 30 amp, rcpt, dryer, 230 volt	EA	62.04	16.56
0130	Wiring device, concealed, 60 amp, rcpt, range, 230 volt	EA	137.03	20.74
0140	Wiring device, concealed, 120 V, 20 amp, rcpt, clock hanger	EA	45.79	7.62
0150	Wiring device, concealed, 120 V, 20 amp, rcpt, fl mtd, duplex	EA	106.76	10.85
0151	Duplex Rcpt w/GFI, 120V, 20A, Cncl Specialty Devices	EA	45.40	13.12
0152	Simplex Rcpt, EP, 120V, 20A, Cncl Specialty Devices	EA	391.27	21.68
16234 0159 Switch				
0160	Wiring device, concealed, switch, 120 volt, 20 amp, SPST	EA	36.15	10.92
0170	Wiring device, concealed, switch, 120 volt, 20 amp, 3-way	EA	56.91	14.68
0180	Wiring device, concealed, switch, 120 volt, 20 amp, 4-way	EA	76.09	29.05
0190	Wiring device, concealed, switch, 120 volt, 20 amp, DPST	EA	61.33	29.05
0200	Wiring device, concealed, switch, 120 volt, 20 amp, thermal	EA	45.43	10.89
16234 0209 Telephone receptacle				
0210	Wiring device, concealed, telephone receptacle, blank	EA	18.18	10.14
0220	Wiring device, concealed, telephone receptacle, 4-pin	EA	31.74	16.67
0221	Blank Cover w/ 3/4" 0-Z Bushing	EA	6.65	
16234 0229 Dimmer switch				
0230	Wiring device, concealed, dimmer switch, 1pole, 600 watt	EA	49.54	16.46
0240	Wiring device, concealed, dimmer switch, 1pole, 1000 watt	EA	88.70	7.09
0250	Wiring device, concealed, dimmer switch, 1pole, 1500 watt	EA	147.76	5.78
0260	Wiring device, concealed, dimmer switch, 1pole, 2000 watt	EA	197.43	12.41
16234 0269 Weatherproof receptacle				
0270	Wiring device, concealed, 20 amp, duplex, wthprf rcpt, 120 V	EA	55.64	14.75

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0280	Wiring device, concealed, 20 amp, simplex, wthprf rcpt, 120 V	EA	56.86	15.57
0281	Duplex Rcpt, GFI 120V, 20 Amp, Conc, WP Device With Cover	EA	46.47	13.66
16234 0289	Weatherproof switch			
0290	Wiring device, concealed, 20 amp, SPST, wthprf switch, 120 V	EA	56.62	20.07
0300	Wiring device, concealed, 20 amp, 3-way, wthprf switch, 120 V	EA	79.38	28.76
0310	Wiring device, concealed, 20 amp, 4-way, wthprf switch, 120 V	EA	98.55	28.55
0320	Wiring device, concealed, 20amp, thermal, wthprf switch, 120 V	EA	67.66	11.21
16234 0329	PVC box			
0330	Wiring device, concealed, 4" sq x 2.25" deep w/cover, PVC box	EA	26.66	5.11
16234 0350	Locking			
0352	Locking, 20A, 125V NEMA L5-20 Power Receptacles	EA	32.98	4.78
0354	Locking, 20A, 250V NEMA L6-20 Power Receptacles	EA	33.07	4.78
0356	Locking, 20A, 480V NEMA L8-20 Power Receptacles	EA	36.21	4.74
0358	Locking, 20A, 600V NEMA L9-20 Power Receptacles	EA	43.48	4.64
0360	Locking, 20A, 125/250V NEMA L10-20 Power Receptacles	EA	39.16	4.71
0362	Locking, 20A, 125/250V NEMA L14-20 Power Receptacles	EA	42.03	4.71
0364	Locking 30A 3ph 250V NEMA L15-30 Power Receptacles	EA	47.45	4.64
16234 0400	Pin			
0402	Pin & Sleeve, 20A, 120/208V Power Receptacles & Box	EA	182.41	39.44
0404	Pin & Sleeve, 20A, 277/480V Power Receptacles & Box	EA	182.41	39.44
0406	Pin & Sleeve, 30A, 120/208V Power Receptacles & Box	EA	204.17	39.01
0408	Pin & Sleeve, 30A, 277/480V Power Receptacles & Box	EA	204.17	39.01
0410	Pin & Sleeve, 60A, 120/208V Power Receptacles & Box	EA	260.91	39.76
0412	Pin & Sleeve, 60A, 277/480V Power Receptacles & Box	EA	260.91	39.76
0414	Pin & Sleeve, 100A, 120/208V Power Receptacles & Box	EA	366.47	39.76
0416	Pin & Sleeve, 100A, 277/480V Power Receptacles & Box	EA	366.47	39.76
0418	Pin & Sleeve, 200A, 120/240V Power Receptacles & Box	EA	583.71	39.76
16234 0500	Isolated			
0502	Locking Is Gnd Rcpt, 15A, 250V Isolated Ground Receptacles	EA	44.52	4.64
0504	Locking Is Gnd Rcpt, 15A, 277V Isolated Ground Receptacles	EA	40.54	4.67
0506	Locking Is Gnd Rcpt, 30A, 277V Isolated Ground Receptacles	EA	59.71	9.13
0508	Locking Is Gnd Rcpt, 20A, 120/208V Isolated Ground Receptacles	EA	54.82	4.60
0510	Locking Is Gnd Rcpt, 30A, 120/208V Isolated Ground Receptacles	EA	70.64	9.06
0512	Locking Is Gnd Rcpt, 20A, 277/480V Isolated Ground Receptacles	EA	42.37	4.71
0514	Locking Is Gnd Rcpt, 20A, 347/600V Isolated Ground Receptacles	EA	56.30	4.60
16234 0600	Modular Furniture			
	Note: Pig-Tail Should Be Included With Furniture.			
0601	Install Pig Tail To Supply Side Only (GFM)	EA	8.00	
0602	Install Pig Tail To Both Ends (G FM)	EA	16.00	
0603	Provide&Install 3' Pig Tail 3/4" Liquid Tight w/ Angle Connector	EA	45.59	
16234 0700	X-Ray And Laser Wiring Device			
0710	50 or 60 Amp, 250 Volt Recept wi th plate	EA	286.71	
0720	50 or 60 Amp, 250 Volt Recept Wi th SS Plate	EA	344.87	
0730	8"x8"x4" Steel Stamped Box	EA	72.38	
16234 1099	TV receptacle			
1100	Wiring devices concealed, TV receptacle, with cover	EA	35.13	9.04
16235 2300	Fan Speed Switches			
2301	3-Speed Rotary Fan Control Switc h	EA	24.85	
2302	Variable Speed Fan Control	EA	28.11	
16300	Motors, Starters, Boards & Switches			
16310	Starters & Controls			
16312 2200	Control Stations			
2201	Control stations, NEMA 1, heavy duty, stop/start	EA	135.73	
2202	Control stations, NEMA 1, heavy duty, stop/start, pilot light	EA	183.50	
2203	Control stations, NEMA 1, heavy duty, hand/off/automatic	EA	102.74	
2204	Control stations, NEMA 1, heavy duty, stop/start/reverse	EA	184.47	
2205	Control stations, NEMA 7, heavy duty, stop/start	EA	224.36	
2206	Control stations, NEMA 7, heavy duty, stop/start, pilot light	EA	276.12	
2207	Control stations, NEMA 7 or 9, 1 element	EA	199.96	
2208	Control stations, NEMA 7 or 9, 2 element	EA	237.14	
2209	Control stations, NEMA 7 or 9, 3 element	EA	525.94	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2210	Control stations, NEMA 7 or 9, selector switch, 2 position	EA	199.96	
2211	Control stations, NEMA 7 or 9, selector switch, 3 position	EA	208.73	
2212	Control stations, oiltight, 1 element	EA	90.42	
2213	Control stations, oiltight, 2 element	EA	128.89	
2214	Control stations, oiltight, 3 element	EA	172.85	
2215	Control stations, oiltight, selector switch, 2 position	EA	96.93	
2216	Control stations, oiltight, selector switch, 3 position	EA	97.90	
16312 2400 Control Switches				
2401	Control swes, pb 600V 10A, mom cont, std oper w/ colored button	EA	18.00	
2402	Cont swes, pb 600V 10A, mom cont, s td oper, w/sgl blk 1NO 1NC	EA	37.99	
2403	Cont swes, pb 600V 10A, mom cont, s td oper, w/dbl blk 2NO 2NC	EA	56.97	
2404	pb 600V 10A, mom cont, std oper w /mushroom btn 1-9/16" dia	EA	37.06	
2405	pb 600 V 10A, mom cont, w/mushroom btn 2-1/4" dia, w/sgl blk 1NO 1N	EA	56.58	
2406	pb 600V 10a, mom cont, Wmushroom btn 2-1/4" dia, Wdbl blk 2NO 2NC	EA	75.56	
2407	push button 600V 10A, maintaine d contact, selor oper	EA	24.28	
2408	pb 600V 10A, maintained cont, selo r oper, w/sgl blk 1NO 1NC	EA	43.80	
2409	pb 600V 10A, maintained cont, selo r oper, Wdbl blk 2NO 2NC	EA	63.36	
2410	pb 600V 10A, maintained cont, s pring-return selor oper	EA	37.06	
2411	pb 600V 10A, maint cont, spring-re turn selor oper, w/sgl blk 1NO 1	EA	56.58	
2412	pb 600V 10A, maint cont, spring-re turn selor oper, w/dbl blk 2NO 2	EA	75.56	
2413	Control swes, pb 600V 10A, maint ained cont, button 6V #12 lamp	EA	74.31	
2414	pb 600V 10A, maint cont, btn 6V #1 2 lamp, Wsgl blk 1NO 1NC Wguar	EA	100.99	
2415	pb 600V 10A, maint cont, btn 6V #1 2 lamp, w/dbl blk 2NO 2NC w/guar	EA	120.09	
2416	push button 600V 10A, maintaine d contact, comb oper	EA	37.06	
2417	pb 600V 10A, maintained cont, comb oper, Wsgl blk 1NO 1NC	EA	56.58	
2418	pb 600V 10A, maintained cont, comb oper, Wdbl blk 2NO 2NC	EA	75.56	
2419	indicating lt unit, full voltag e, 110-125V frt mount	EA	53.40	
2420	indicating lt unit, full voltag e, 130V resistor type	EA	55.72	
2421	indicating lt unit, full voltag e, 6V transformer type	EA	68.50	
16313 0010 Mtor starters & controls				
16313 0050 Mgnetic, FVNR				
0100	Starter, 5 HP, size 0, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	335.11	92.55
0200	Starter, 10 HP, size 1, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	430.61	134.50
0300	Starter, 25 HP, size 2, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	734.30	204.53
0400	Starter, 50 HP, size 3, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	1,093.72	206.94
0500	Starter, 100 HP, size 4, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	2,199.48	335.45
0600	Starter, 200 HP, size 5, w/ encl & htr, NEMA 1, 480 V, magnetic,	EA	4,668.23	460.23
0672	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 0	EA	597.93	132.98
0674	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 1	EA	712.22	174.96
0676	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 2	EA	1,193.65	217.51
0678	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 3	EA	1,819.52	328.22
0680	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 4	EA	3,327.32	455.66
16313 0681 Accessories				
0682	Starter, magnetic, FVNR, w/ encl & htr, NEMA 4, size 5	EA	5,974.06	
0683	Starter accessories, NEMA 1 starter, start-stop push button	EA	80.87	
0684	Starter accessories, NEMA 1 starters, H-0-A sel switch	EA	80.87	
0685	Starter accessories, NEMA 1 starters, pilot light	EA	147.57	
0686	Starter accessories, start-stop push button, NEMA 4 starters	EA	131.07	
0687	Starter accessories, NEMA 4 starters, H-0-A sel switch	EA	131.07	
0688	Starter accessories, NEMA 4 starters, pilot light	EA	147.57	
0691	Pilot Light, NEMA1 ENCL Mtl only	EA	8.61	
0692	Pilot Light, NEMA4 ENCL Mtl only	EA	8.61	
0693	Pilot Light, NEMA7 ENCL Mtl only	EA	9.99	
16313 0700 Auxillary Contact				
0710	Auxiliary Contact, Normally Open	EA	7.00	
0720	Auxiliary Cont, Normally Closed	EA	7.00	
16313 1100 Factory Modifications - Nema 1 Enclosure				
1110	Start-Stop PB, Factory Mbd-NEMA 1 Mg Mr Starter, N-Rev, 208-600V	EA	41.60	
1120	H-0-A Sel Sw, Factory Mbd-NEMA 1 Mg Mr Starter, N-Rev, 208-600V	EA	55.71	
1130	Pilot Light, Factory Mbd-NEMA 1 Mg Mr Starter, N-Rev, 208-600V	EA	67.43	
16313 1200 Factory Modifications - Nema 4 Enclosure				
1210	Start-Stop PB, Factory Mbd-NEMA 4 Mg Mr Starter, N-Rev, 208-600V	EA	41.60	
1220	H-0-A Sel Sw, Factory Mbd-NEMA 4 Mg Mr Starter, N-Rev, 208-600V	EA	96.47	
1230	Pilot Light, Factory Mbd-NEMA 4 Mg Mr Starter, N-Rev, 208-600V	EA	67.43	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16313 1300 Factory Modifications - Control Circuits, Standard Control Transformer - 50 Or 60 Hz				
1310	Mag Str xfmr, Size 0, 1, Fcty Mbd Standard Control Transformer	EA	77.47	
1320	Mag Str xfmr, Size 2, Fcty Mbd Standard Control Transformer	EA	109.04	
1330	Mag Str xfmr, Size 3, Fcty Mbd Standard Control Transformer	EA	223.83	
1340	Mag Str xfmr, Size 4, Fcty Mbd Standard Control Transformer	EA	258.26	
1350	Mag Str xfmr, Size 5, Fcty Mbd Standard Control Transformer	EA	284.09	
16313 3009 Manual, single phase				
3010	Starter, manual, NEMA 1, single phase, w/pilot, 1 pole, 120V	EA	105.26	26.60
3030	Starter, manual, NEMA 1, single phase, w/pilot, 2 pole, 120/240V	EA	104.46	32.02
3040	Starter, manual, NEMA 4, single phase, w/pilot, 2 pole, 120/240V	EA	276.01	43.30
3045	Starter, manual, NEMA 7 & 9, 1 phase, w/pilot, 2 pole, 120/240V	EA	295.42	36.10
3050	Starter, manual, size 00, 3 ph, 480V, w/o pilot light, NEMA 1	EA	197.70	31.38
3052	Starter, manual, size 0, 3 ph, 480V, w/o pilot light, NEMA 1	EA	203.40	45.25
3054	Starter, manual, size 1, 3 ph, 480V, w/o pilot light, NEMA 1	EA	239.00	43.93
3056	Starter, manual, 3 ph, 480 volt, NEMA 1, pilot light	EA	26.14	
3058	Starter, manual, size 0, 3 ph, 480V, w/o pilot light, NEMA 4	EA	390.50	52.88
3060	Starter, manual, size 1, 3 ph, 480V, w/o pilot light, NEMA 4	EA	517.37	57.52
3062	Starter, manual, 3 ph, 480 volt, NEMA 4, pilot light	EA	26.14	
3064	Starter, manual, size 0, 3 ph, 480V, w/o pilot light, NEMA 7&9	EA	570.45	55.63
3066	Starter, manual, size 1, 3 ph, 480V, w/o pilot light, NEMA 7&9	EA	665.88	55.13
3068	Starter, manual, 3 ph, 480 volt, NEMA 7 & 9, pilot light	EA	94.64	
3070	Starter, manual, normally open, 3 ph, 480V, auxiliary contact	EA	58.56	
3072	Starter, manual, normal closed, 3 ph, 480V, auxiliary contact	EA	58.56	
16313 3099 Magnetic, 3 phase, reversing				
3100	Starters & controls, size 00, magnetic, 3 ph, reversing, NEMA	EA	612.20	111.51
3110	Mtor starters & controls, NEMA 1, size 0, magnetic, 3 ph,	EA	661.68	119.21
3120	Mtor starters & controls, NEMA 1, size 1, magnetic, 3 ph,	EA	763.22	168.78
3130	Mtor starters & controls, NEMA 1, size 2, magnetic, 3 ph,	EA	1,293.92	184.76
3140	Mtor starters & controls, NEMA 1, size 3, magnetic, 3 ph,	EA	2,006.42	222.77
3150	Mtor starters & controls, NEMA 1, size 4, magnetic, 3 ph,	EA	4,419.01	285.92
3160	Mtor starters & controls, NEMA 1, size 5, magnetic, 3 ph,	EA	9,337.66	303.72
3170	Mtor starters & controls, NEMA 4, size 00, magnetic, 3 ph,	EA	881.78	111.51
3180	Mtor starters & controls, NEMA 4, size 0, magnetic, 3 ph,	EA	918.47	121.53
3190	Mtor starters & controls, NEMA 4, size 1, magnetic, 3 ph,	EA	1,119.94	173.13
3200	Mtor starters & controls, NEMA 4, size 2, magnetic, 3 ph,	EA	1,874.44	177.44
3210	Mtor starters & controls, NEMA 4, size 3, magnetic, 3 ph,	EA	2,865.11	216.85
3220	Mtor starters & controls, NEMA 4, size 4, magnetic, 3 ph,	EA	5,941.18	286.89
3230	Mtor starters & controls, NEMA 4, size 5, magnetic, 3 ph,	EA	10,557.72	301.68
16313 3239 Magnetic, access, NEMA				
3240	Mtor starters, start-stop pb, NEMA 1 starter, magnetic, access	EA	209.15	
3250	Mtor starters, H-0-A sel switch, NEMA 1 starter,	EA	115.03	
3260	Mtor starters, pilot light, NEMA 1 starter, magnetic, access	EA	147.45	
3270	Mtor starters, forward, reverse, stop, NEMA 1 starter, magnetic,	EA	131.07	
3280	Mtor starters, start-stop pb, NEMA 4 starter, magnetic, access	EA	209.15	
3290	Mtor starters, H-0-A sel switch, NEMA 4 starter, magnetic, acces	EA	131.07	
3300	Mtor starters, pilot light, NEMA 4 starter, magnetic, access	EA	147.45	
3310	Mtor starters, reverse, stop, NEMA 4 starter, forward,	EA	131.07	
16313 3400 Factory Modifications - Nema I Enclosure - Reversing				
3410	Start-Stop PB, Factory Mbd-NEMA 1 Mag Mtr Starter, Rev, 208-600V	EA	41.60	
3420	H-0-A Sel Sw, Factory Mbd-NEMA 1 Mag Mtr Starter, Rev, 208-600V	EA	97.70	
3430	Pilot Light, Factory Mbd-NEMA 1 Mag Mtr Starter, Rev, 208-600V	EA	67.43	
3440	Fwd-Rvs-Stop, Fcty Mbd, NEMA 1 Mag Mtr Starter, Rev, 208-600V	EA	29.77	
3450	Local-Remote Sel Sw, NEMA 1 2 - Position, Factory Mbd	EA	37.23	
16313 3500 Factory Modifications - Nema 4 Enclosure - Reversing				
3510	Start-Stop PB, Factory Mbd-NEMA 4 Mag Mtr Starter, Rev, 208-600V	EA	41.60	
3520	H-0-A Sel Sw, Factory Mbd-NEMA 4 Mag Mtr Starter, Rev, 208-600V	EA	97.70	
3530	Pilot Light, Factory Mbd-NEMA 4 Mag Mtr Starter, Rev, 208-600V	EA	67.43	
3540	Fwd-Rvs-Stop, Fcty Mbd, NEMA 4 Mag Mtr Starter, Rev, 208-600V	EA	67.43	
16313 3600 Factory Modifications Fused Control Circuit				
3610	Size 00-5, Fused Ctrl Circuit Mag Mtr Starter, Factory Mbd	EA	25.11	
16313 9299 Magnetic, RVAT				
9300	Mtor starters & controls, magnetic, RVAT, NEMA 1, size 3	EA	4,153.40	242.10
9310	Mtor starters & controls, magnetic, RVAT, NEMA 1, size 4	EA	7,373.94	324.54

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9320	Mtor starters & controls, magnetic, RVAT, NEMA 1, size 5	EA	13,214.03	390.37
9330	Mtor starters & controls, magnetic, RVAT, NEMA 1, size 6	EA	22,841.88	334.81
9340	Mtor starters & controls, magnetic, RVAT, NEMA 1, size 7	EA	37,440.54	439.26
16313 9350 Factory Modifications Addition For Reversing Service Auto Transformer Type				
9352	RVAT Str,Size 3,Fcty Mbd for Rev Type 240-600V,3P,Reversing Mbd	EA	130.57	
9354	RVAT Str,Size 4,Fcty Mbd for Rev Type 240-600V,3P,Reversing Mbd	EA	130.57	
9356	RVAT Str,Size 5,Fcty Mbd for Rev Type 240-600V,3P,Reversing Mbd	EA	130.57	
9358	RVAT Str,Size 6,7,Fcty Mbd-Rev Type 240-600V,3P,Reversing Mbd	EA	130.57	
16313 9360 Factory Modifications Pilot Devices				
9362	Start-Stop PB,Factory Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	61.14	
9364	H-0-A Sel Sw,Factory Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	67.43	
9366	Fwd-Rvs-Stop,Factory Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	114.78	
9368	Pilot Light,Factory Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	62.36	
9370	Fused Control Circuit,Fcty Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	89.67	
9372	Auxiliary Interlock,Fcty Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	44.84	
9374	Auxiliary Relay,Fcty Mbd RVAT Str,240-600V,3P,Pilot Devic	EA	146.34	
16313 9380 Factory Modifications - Meters				
9382	RVAT Str,Ammeter & Switch 240-600V,3P,Factory Mbd,Meters	EA	588.26	
9384	RVAT Str,Voltmeter 240-600V,3P,Factory Mbd,Meters	EA	568.18	
9386	RVAT Str,Wattmeter 240-600V,3P,Factory Mbd,Meters	EA	200.87	
9388	Elapsed-time Meter 240-600V,3P,Factory Mbd,Meters	EA	166.44	
16313 9390 Factory Modifications Min Circuit Breakers				
9392	RVAT Str,Sz 3,Crk Brkr,Fcty Mbd Main Circuit Breaker	EA	777.47	
9394	RVAT Str,Sz 4,Crk Brkr,Fcty Mbd Main Circuit Breaker	EA	1,421.90	
9396	RVAT Str,Sz 5-7,Crk Brkr,Fcty Mb d,Main Circuit Breaker	EA	3,024.52	
16313 9399 Combination, non-reversing				
9400	Mtor starters & cont, NEMA 1, size 0, comb, NR, w/disc switch	EA	673.64	88.01
9410	Mtor starters & cont, NEMA 1, size 1, comb, NR, w/disc switch	EA	793.28	136.47
9420	Mtor starters & cont, NEMA 1, size 2, comb, NR, w/disc switch	EA	1,125.21	157.48
9430	Mtor starters & cont, NEMA 1, size 3, comb, NR, w/disc switch	EA	1,755.44	196.31
9440	Mtor starters & cont, NEMA 1, size 4, comb, NR, w/disc switch	EA	3,222.90	310.06
9450	Mtor starters & cont, NEMA 1, size 5, comb, NR, w/disc switch	EA	6,611.81	388.12
9460	Mtor starters & cont, NEMA 4, size 0, comb, NR, w/disc switch	EA	1,224.52	111.83
9470	Mtor starters & cont, NEMA 4, size 1, comb, NR, w/disc switch	EA	1,331.32	156.55
9480	Mtor starters & cont, NEMA 4, size 2, comb, NR, w/disc switch	EA	1,923.55	169.96
9490	Mtor starters & cont, NEMA 4, size 3, comb, NR, w/disc switch	EA	3,097.79	206.47
9500	Mtor starters & cont, NEMA 4, size 4, comb, NR, w/disc switch	EA	4,899.41	304.89
9510	Mtor starters & cont, NEMA 4, size 5, comb, NR, w/disc switch	EA	10,906.62	381.45
9520	Mtor starters & cont, NEMA 1, size 0, comb, NR, w/CB	EA	844.28	85.37
9530	Mtor starters & cont, NEMA 1, size 1, comb, NR, w/CB	EA	963.53	133.05
9540	Mtor starters & cont, NEMA 1, size 2, comb, NR, w/CB	EA	1,285.14	154.16
9550	Mtor starters & cont, NEMA 1, size 3, comb, NR, w/CB	EA	1,801.87	190.35
9560	Mtor starters & cont, NEMA 1, size 4, comb, NR, w/CB	EA	3,697.54	301.32
9570	Mtor starters & cont, NEMA 1, size 5, comb, NR, w/CB	EA	7,917.07	376.92
9580	Mtor starters & cont, NEMA 4, size 0, comb, NR, w/CB	EA	1,259.38	99.38
9590	Mtor starters & cont, NEMA 4, size 1, comb, NR, w/CB	EA	1,366.18	140.29
9600	Mtor starters & cont, NEMA 4, size 2, comb, NR, w/CB	EA	1,958.41	157.80
9610	Mtor starters & cont, NEMA 4, size 3, comb, NR, w/CB	EA	3,190.74	206.01
9620	Mtor starters & cont, NEMA 4, size 4, comb, NR, w/CB	EA	5,462.96	304.43
9630	Mtor starters & cont, NEMA 4, size 5, comb, NR, w/CB	EA	12,417.17	459.48
16313 9639 Combination, reversing				
9640	Mtor starter & cont, NEMA 1, size 0, comb, rev, w/disc switch	EA	1,021.18	109.80
9650	Mtor starter & cont, NEMA 1, size 1, comb, rev, w/disc switch	EA	1,151.21	153.41
9660	Mtor starter & cont, NEMA 1, size 2, comb, rev, w/disc switch	EA	1,749.26	167.57
9670	Mtor starter & cont, NEMA 1, size 3, comb, rev, w/disc switch	EA	2,725.96	202.58
9680	Mtor starter & cont, NEMA 1, size 4, comb, rev, w/disc switch	EA	5,451.34	299.22
9690	Mtor starter & cont, NEMA 1, size 0, comb, rev, w/CB	EA	1,061.84	100.38
9700	Mtor starter & cont, NEMA 1, size 1, comb, rev, w/CB	EA	1,203.50	141.93
9710	Mtor starter & cont, NEMA 1, size 2, comb, rev, w/CB	EA	1,829.43	159.36
9720	Mtor starter & cont, NEMA 1, size 3, comb, rev, w/CB	EA	2,803.81	228.44
9730	Mtor starter & cont, NEMA 1, size 4, comb, rev, w/CB	EA	6,019.54	304.53
9800	Mbt start & cont,0.5-1.5 HP, adj V drive DC, rev, w/dynamic brk	EA	1,397.56	91.50
9810	Mbt start & cont, 0.5-2 HP, adj V drive DC,non rev,w/dynamic brk	EA	1,397.56	73.57
16313 9900 Removal & Reinstallation Of Mtor Starters Includes Storage And Cleaning				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9910	Remove & Reinstall Mtor Starter With Disconnect Up To 25 HP	EA	254.71	
9912	Remove & Relocate Mtor Starter With Disc Below 15HP	EA	125.00	
16315 0010 Mtor control centers				
16315 0099 Incoming section, circuit breaker, air Breakers, 3 Pole W Structure Included				
0100	MCC, incoming sect, 70-100 A, CB air, 3 p, 14000 A incm	EA	3,681.27	99.67
0120	MCC, incoming sect, 125-225 A, CB air, 3 p, 22000 A incm	EA	4,995.83	191.42
0140	MCC, incoming sect, 125-400 A, CB air, 3 p, 30000 A incm	EA	5,674.59	227.33
0160	MCC, incoming sect, 125-600 A, CB air, 3 p, 30000 A incm	EA	6,489.32	360.02
0180	MCC, incoming sect, 125-1200 A, CB air, 3 p, 30000 A incm	EA	7,183.24	435.80
0200	MCC, incoming sect, 125-2000 A, CB air, 3 p, 30000 A incm	EA	10,187.21	481.41
0220	MCC, incoming sect, 125-400 A, CB air, 3 p, 100000 A incm	EA	7,986.16	629.90
0500	MCC, incoming sect, 3 pole, main lugs, 600 amp	EA	1,780.82	118.92
0510	MCC, incoming sect, 3 pole, main lugs, 800 amp	EA	4,138.14	145.32
0520	MCC, incoming sect, 3 pole, main lugs, 1200 amp	EA	4,557.21	213.64
0530	MCC, incoming sect, 3 pole, main lugs, 2000 amp	EA	8,846.95	378.71
0540	MCC, incoming sect, 3 pole, main lugs, 3000 amp	EA	12,406.11	560.22
0550	MCC, incoming sect, 3 pole, main lugs, 4000 amp	EA	17,693.90	734.60
16315 0999 Combination starters, circuit breaker				
16315 0999 Class I, type A				
1000	MCC, comb starters, size 1, CB, class I, type A	EA	2,490.13	74.13
1010	MCC, comb starters, size 2, CB, class I, type A	EA	3,071.76	89.61
1020	MCC, comb starters, size 3, CB, class I, type A	EA	4,518.14	109.94
1030	MCC, comb starters, size 4, CB, class I, type A	EA	5,933.67	153.44
1040	MCC, comb starters, size 5, CB, class I, type A	EA	10,797.30	190.10
16315 1049 Class I, type B				
1050	MCC, comb starters, size 1, CB, class I, type B	EA	2,471.85	65.30
1060	MCC, comb starters, size 2, CB, class I, type B	EA	3,052.76	72.00
1070	MCC, comb starters, size 3, CB, class I, type B	EA	4,975.97	102.41
1080	MCC, comb starters, size 4, CB, class I, type B	EA	5,910.51	135.33
1090	MCC, comb starters, size 5, CB, class I, type B	EA	10,774.60	171.20
16315 1099 Class I, type C				
1100	MCC, comb starters, size 1, CB, class I, type C	EA	2,461.04	52.95
1110	MCC, comb starters, size 2, CB, class I, type C	EA	3,045.66	64.37
1120	MCC, comb starters, size 3, CB, class I, type C	EA	4,967.05	97.46
1130	MCC, comb starters, size 4, CB, class I, type C	EA	8,317.38	128.13
1140	MCC, comb starters, size 5, CB, class I, type C	EA	11,929.73	183.04
16315 1149 Class II, type B				
1150	MCC, comb starters, size 1, CB, class II, type B	EA	2,516.95	90.22
1160	MCC, comb starters, size 2, CB, class II, type B	EA	3,102.31	98.78
1170	MCC, comb starters, size 3, CB, class II, type B	EA	4,543.85	121.92
1180	MCC, comb starters, size 4, CB, class II, type B	EA	5,961.75	163.36
1190	MCC, comb starters, size 5, CB, class II, type B	EA	10,823.35	208.26
16315 1199 Class II, type C				
1200	MCC, comb starters, size 1, CB, class II, type C	EA	2,509.71	86.30
1210	MCC, comb starters, size 2, CB, class II, type C	EA	3,089.25	91.65
1220	MCC, comb starters, size 3, CB, class II, type C	EA	5,015.98	122.57
1230	MCC, comb starters, size 4, CB, class II, type C	EA	8,366.70	154.23
1240	MCC, comb starters, size 5, CB, class II, type C	EA	11,976.24	193.63
16315 1499 Fused disconnect				
16315 1499 Class I, type A				
1500	MCC, comb starters, size 1, fused disconnect, class I, type	EA	2,428.20	74.14
1510	MCC, comb starters, size 2, fused disconnect, class I, type	EA	3,407.32	102.45
1520	MCC, comb starters, size 3, fused disconnect, class I, type	EA	5,234.18	130.80
1530	MCC, comb starters, size 4, fused disconnect, class I, type	EA	7,942.53	182.40
1540	MCC, comb starters, size 5, fused disconnect, class I, type	EA	10,441.47	222.27
16315 1549 Class I, type B				
1550	MCC, comb starters, size 1, fused disconnect, class I, type	EA	2,413.75	66.51
1560	MCC, comb starters, size 2, fused disconnect, class I, type	EA	3,388.42	90.22
1570	MCC, comb starters, size 3, fused disconnect, class I, type	EA	5,215.87	122.81
1580	MCC, comb starters, size 4, fused disconnect, class I, type	EA	7,927.79	174.34
1590	MCC, comb starters, size 5, fused disconnect, class I, type	EA	10,418.16	213.92
16315 1599 Class I, type C				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1600	MCC, comb starters, size 1, fused disconnect, class I, type	EA	2,406.32	61.37
1610	MCC, comb starters, size 2, fused disconnect, class I, type	EA	3,376.19	82.02
1620	MCC, comb starters, size 3, fused disconnect, class I, type	EA	5,209.37	117.07
1630	MCC, comb starters, size 4, fused disconnect, class I, type	EA	7,920.96	183.04
1640	MCC, comb starters, size 5, fused disconnect, class I, type	EA	10,418.16	213.92
16315 1649 Class II, type B				
1650	MCC, comb starters, size 1, fused disconnect, class II, type	EA	2,462.68	91.65
1660	MCC, comb starters, size 2, fused disconnect, class II, type	EA	3,431.15	113.76
1670	MCC, comb starters, size 3, fused disconnect, class II, type	EA	5,265.54	145.39
1680	MCC, comb starters, size 4, fused disconnect, class II, type	EA	7,976.54	204.69
1690	MCC, comb starters, size 5, fused disconnect, class II, type	EA	10,467.69	227.33
16315 1699 Class II, type C				
1700	MCC, comb starters, size 1, fused disconnect, class II, type	EA	2,451.61	83.44
1710	MCC, comb starters, size 2, fused disconnect, class II, type	EA	3,422.56	99.13
1720	MCC, comb starters, size 3, fused disconnect, class II, type	EA	5,251.16	129.84
1730	MCC, comb starters, size 4, fused disconnect, class II, type	EA	7,676.98	182.94
1740	MCC, comb starters, size 5, fused disconnect, class II, type	EA	10,454.29	230.79
16315 2999 Space with bus & hardware				
16315 2999 Circuit breaker type				
3000	MCC, space with bus & hardware, size 1, circuit breaker type	EA	2,738.66	26.07
3010	MCC, space with bus & hardware, size 2, circuit breaker type	EA	3,794.89	26.07
3020	MCC, space with bus & hardware, size 3, circuit breaker type	EA	5,532.55	37.80
3030	MCC, space with bus & hardware, size 4, circuit breaker type	EA	8,330.95	44.50
3040	MCC, space with bus & hardware, size 5, circuit breaker type	EA	10,221.26	69.18
16315 3049 Fused disconnect type				
3050	MCC, space with bus & hardware, size 1, fused disconnect type	EA	2,331.51	26.07
3060	MCC, space with bus & hardware, size 2, fused disconnect type	EA	3,295.77	37.80
3070	MCC, space with bus & hardware, size 3, fused disconnect type	EA	5,060.02	44.50
3080	MCC, space with bus & hardware, size 4, fused disconnect type	EA	5,461.56	69.18
3090	MCC, space with bus & hardware, size 5, fused disconnect type	EA	6,704.96	103.84
16315 3099 Blank (for future expansion)				
3100	MCC, space with bus & hardware, blank (for future exp), size 1	EA	63.51	
3110	MCC, space with bus & hardware, blank (for future exp), size 2	EA	63.51	
3120	MCC, space with bus & hardware, blank (for future exp), size 3	EA	96.30	
3130	MCC, space with bus & hardware, blank (for future exp), size 4	EA	96.30	
3140	MCC, space with bus & hardware, blank (for future exp), size 5	EA	191.57	
16315 3170 MC Basic Distribution Section.				
Note: Includes Structure, 42KA Bus Bracing, 600A Tin Plated Copper Bus, 300A Tin Plated Copper Vertical Bus, 1/4"x2" Tin Plates Copper Horizontal Ground Bus, NEMA 1 Enclosure, And 15" Cabinet Depth.				
3171	20" Wide Basic Section W Vert. Wireway	EA	2,144.38	
3172	25"-35" Wide Basic Section (No Vert. Wireway)	EA	2,144.38	
3173	25" Wide Basic Section W 9" Wide Vert. Wireway	EA	2,419.33	
3174	Corner Section	EA	2,419.33	
16315 4999 Accessories (factory installed)				
16315 4999 Control circuit				
5000	MCC, access (factory installed), transformer, size 1, control	EA	267.25	
5010	MCC, access (factory installed), transformer, size 2, control	EA	346.27	
5020	MCC, access (factory installed), transformer, size 3, control	EA	435.74	
5030	MCC, access (factory installed), transformer, size 4, control	EA	488.03	
5040	MCC, access (factory installed), transformer, size 5, control	EA	546.12	
5050	MCC, dual element time delay, fuse & holder small dim control	EA	123.17	
5051	Ctrl Circuit Transformer, Size 1 Factory Installed	EA	39.62	
5052	Ctrl Circuit Transformer, Size 2 Factory Installed	EA	39.62	
5053	Ctrl Circuit Transformer, Size 3 Factory Installed	EA	76.30	
5054	Ctrl Circuit Transformer, Size 4 Factory Installed	EA	76.30	
5055	Ctrl Circuit Transformer, Size 5 Factory Installed	EA	106.01	
16315 5059 Control device				
5060	MCC, control device, 2 unit push button station, cover mounted	EA	138.03	7.49
5070	MCC, control device, 2-3 unit selector switch, cover mounted	EA	263.69	9.09
5080	MCC, control device, cover mounted, pilot light	EA	162.20	6.10
5090	MCC, control device, w/pilot light, cover mtd, H-0-A switch	EA	674.33	27.07
5100	MCC, control device, aux contact add per starter, cover mtd	EA	141.69	9.84
16315 5109 Extra interlocks				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5110	MCC, access, type A, extra interlocks (per contact), class	EA	72.49	8.45
5120	MCC, access, type B, extra interlocks (per contact), class	EA	72.49	5.53
5130	MCC, access, type C, extra interlocks (per contact), class	EA	70.61	4.60
5140	MCC, access, type B, extra interlocks (per contact), class	EA	68.78	4.89
5150	MCC, access, type C, extra interlocks (per contact), class	EA	66.97	4.32
5160	MCC, access, provisions for bus duct entrance, (factory inst)	EA	5,926.02	
5170	MCC, access, special cabinet nameplate, (factory inst)	EA	19.75	
16315 5179 Relays				
5180	MCC, relay, 2 contacts, incl control, 10 amp class A, 600 W	EA	85.49	7.64
5190	MCC, relay, 0.1-10 sec variable, off-delay, timing, solid state,	EA	263.73	7.64
5200	MCC, relay, w/base, general purpose cont, 240 VAC, 10 amp	EA	230.04	7.64
5210	Type "MR" Relay, w/Base 10 Amp D PDT OR 3PDT	EA	50.91	
16315 7000 MCC Accessories				
16315 7100 Lighting Transformer W Circuit Breaker				
Note: For 240V, 480V, Or 600V Primary. Includes Door, Unit Support Pan, And NEMA 1, NEMA 1 W Gasket, Or NEMA 12 Enclosure For MCC Only.				
7101	1Ph, 5 KVA, 120/240V Secondary	EA	2,575.79	101.45
7102	1Ph, 7.5 KVA, 120/240V Secondary	EA	2,706.89	121.54
7103	1Ph, 10 KVA, 120/240V Secondary	EA	2,984.62	141.84
7104	1Ph, 15 KVA, 120/240V Secondary	EA	3,786.41	152.16
7105	1Ph, 25 KVA, 120/240V Secondary	EA	5,182.62	182.85
7106	1Ph, 37.5KVA, 120/240V Secondary	EA	6,415.76	223.24
7107	1Ph, 50 KVA, 120/240V Secondary	EA	8,491.79	264.03
7111	3Ph, 10 KVA, 120/208V Secondary	EA	4,823.40	161.96
7112	3Ph, 15 KVA, 120/208V Secondary	EA	5,285.61	202.90
7113	3Ph, 25 KVA, 120/208V Secondary	EA	6,049.50	224.01
7114	3Ph, 30 KVA, 120/208V Secondary	EA	6,404.22	243.68
7115	3Ph, 37.5KVA, 120/208V Secondary	EA	7,752.48	264.03
7116	3Ph, 45 KVA, 120/208V Secondary	EA	8,019.44	305.19
16315 7200 Bolt-on Lighting Panel.				
Note: Includes Door, T-handle, Unit Support Pan, Neutral Bar (10KA IC rms), And NEMA 1, NEMA 1 W Gasket, Or NEMA 12 Enclosure. For MCC Only.				
7201	MLO, 1 PH, 3 Wire, 120/240V, 18 Circuit	EA	893.01	204.12
7202	MLO, 1 PH, 3 Wire, 120/240V, 30 Circuit	EA	1,339.85	355.31
7203	MLO, 1 PH, 3 Wire, 120/240V, 42 Circuit	EA	1,768.50	480.70
7204	MLO, 3 PH, 4 Wire, 120/208V, 18 Circuit	EA	923.44	220.88
7205	MLO, 3 PH, 4 Wire, 120/208V, 30 Circuit	EA	1,326.11	347.76
7206	MLO, 3 PH, 4 Wire, 120/208V, 42 Circuit	EA	1,823.13	510.76
7207	MCB, 1 PH, 3 Wire, 120/240V, 18 Circuit	EA	1,660.01	236.75
7208	MCB, 1 PH, 3 Wire, 120/240V, 30 Circuit	EA	2,118.31	380.10
7209	MCB, 1 PH, 3 Wire, 120/240V, 42 Circuit	EA	2,596.05	510.76
7211	MCB, 3 PH, 4 Wire, 120/208V, 18 Circuit	EA	1,693.86	255.36
7212	MCB, 3 PH, 4 Wire, 120/208V, 30 Circuit	EA	2,118.31	380.07
7213	MCB, 3 PH, 4 Wire, 120/208V, 42 Circuit	EA	2,626.00	527.23
16315 7300 Factory Installed Bolt-On Branch Circuit Breaker s. For MCC Lighting Panel Only				
7301	15A/1P - 30A/1P	EA	21.74	
7302	15A/1P - 30A/1P (GFI)	EA	148.26	
7303	15A/2P - 50A/2P	EA	42.50	
7304	60A/2P - 100A/2P	EA	97.85	
7305	15A/3P - 50A/3P	EA	114.65	
7306	60A/3P - 100A/3P	EA	173.95	
16315 7400 Blank Unit Door (BUD)				
Note: W NEMA 1, NEMA 1 W Gasket, Or NEMA 12 Enclosure. Factory Installed.				
7401	6" H Blank Unit Door (BUD)	EA	39.54	
7402	12" H Blank Unit Door (BUD)	EA	47.44	
7403	18" H Blank Unit Door (BUD)	EA	71.16	
7404	24" H Blank Unit Door (BUD)	EA	94.88	
7405	30" H Blank Unit Door (BUD)	EA	142.33	
7406	48" H Blank Unit Door (BUD)	EA	166.05	
7407	72" H Blank Unit Door (BUD)	EA	189.77	
16316 5000 MCC Starters W HMP Circuit Breaker				
Note: Includes Door, Unit Support Pan, Heater Elements, And NEMA 1 W Gasket, Or NEMA 12 Enclosure. Line Voltages Of 208V, 240V, 480V, And 600V.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16316 5100 FVNR Starters W HMP Circuit Breaker				
5101	Class 1, Type A, Size 1	EA	615.70	75.92
5102	Class 1, Type A, Size 2	EA	685.58	84.19
5103	Class 1, Type A, Size 3	EA	1,218.79	113.22
5104	Class 1, Type A, Size 4	EA	1,781.57	149.35
5105	Class 1, Type A, Size 5	EA	4,203.00	186.50
5106	Class 1, Type A, Size 6	EA	10,060.45	186.50
5107	Class 1, Type B, Size 1	EA	631.74	65.69
5108	Class 1, Type B, Size 2	EA	712.59	73.96
5109	Class 1, Type B, Size 3	EA	1,259.72	100.99
5111	Class 1, Type B, Size 4	EA	1,794.20	136.93
5112	Class 1, Type B, Size 5	EA	4,220.26	176.76
5113	Class 1, Type B, Size 6	EA	10,140.74	176.76
16316 5200 Two Speed 2-Winding (TS2W)HMP Circuit Breaker				
5201	Class 1, Type A, Size 1	EA	1,010.64	95.07
5202	Class 1, Type A, Size 2	EA	1,250.42	105.20
5203	Class 1, Type A, Size 3	EA	2,090.17	141.25
5204	Class 1, Type A, Size 4	EA	3,647.64	186.82
5205	Class 1, Type A, Size 5	EA	6,682.88	233.75
5206	Class 1, Type B, Size 1	EA	1,039.78	82.06
5207	Class 1, Type B, Size 2	EA	1,290.67	92.50
5208	Class 1, Type B, Size 3	EA	2,143.92	126.45
5209	Class 1, Type B, Size 4	EA	3,672.06	171.24
5211	Class 1, Type B, Size 5	EA	6,712.71	221.13
16316 5300 Two Speed 1-Winding (TS1W)HMP Circuit Breaker				
5301	Class 1, Type A, Size 1	EA	1,115.77	95.07
5302	Class 1, Type A, Size 2	EA	1,615.55	105.20
5303	Class 1, Type A, Size 3	EA	3,101.45	141.25
5304	Class 1, Type A, Size 4	EA	4,228.61	186.82
5305	Class 1, Type A, Size 5	EA	8,606.62	233.75
5306	Class 1, Type B, Size 1	EA	1,144.90	82.06
5307	Class 1, Type B, Size 2	EA	1,655.79	92.50
5308	Class 1, Type B, Size 3	EA	3,155.19	126.45
5309	Class 1, Type B, Size 4	EA	4,253.03	171.24
5311	Class 1, Type B, Size 5	EA	8,636.45	221.13
16316 6000 MCC Starters W Fusible Disconnect				
Note: Includes Fuses, Door, Unit Support Pan, Heater Elements, And NEMA 1 W Gasket, Or NEMA 12 Enclosure. Line Voltages Of 208V, 240V, 480V, And 600V.				
16316 6100 FVNR Starters W Fusible Disconnect				
6101	Class 1, Type A, Size 1	EA	484.97	73.96
6102	Class 1, Type A, Size 2	EA	628.36	100.60
6103	Class 1, Type A, Size 3	EA	1,081.58	131.19
6104	Class 1, Type A, Size 4	EA	1,857.47	184.65
6105	Class 1, Type A, Size 5	EA	3,857.81	234.75
6106	Class 1, Type A, Size 6	EA	10,111.88	234.75
6107	Class 1, Type B, Size 1	EA	503.92	65.69
6108	Class 1, Type B, Size 2	EA	654.95	90.15
6109	Class 1, Type B, Size 3	EA	1,126.05	120.92
6111	Class 1, Type B, Size 4	EA	1,874.74	174.98
6112	Class 1, Type B, Size 5	EA	3,869.91	222.13
6113	Class 1, Type B, Size 6	EA	10,187.05	222.13
16316 6200 Two Speed 2-Winding (TS2W) W Fusible Disconnect				
6201	Class 1, Type A, Size 1	EA	867.69	92.72
6202	Class 1, Type A, Size 2	EA	1,212.06	125.84
6203	Class 1, Type A, Size 3	EA	1,905.25	163.93
6204	Class 1, Type A, Size 4	EA	4,097.11	231.57
6205	Class 1, Type A, Size 5	EA	6,763.53	271.05
6206	Class 1, Type B, Size 1	EA	900.55	82.06
6207	Class 1, Type B, Size 2	EA	1,251.26	112.65
6208	Class 1, Type B, Size 3	EA	1,963.13	151.31
6209	Class 1, Type B, Size 4	EA	4,125.61	218.17
6211	Class 1, Type B, Size 5	EA	6,788.17	255.47
16316 6300 Two Speed 1-Winding (TS1W) W Fusible Disconnect				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6301	Class 1, Type A, Size 1	EA	1,026.08	92.72
6302	Class 1, Type A, Size 2	EA	1,582.79	125.84
6303	Class 1, Type A, Size 3	EA	2,927.04	163.29
6304	Class 1, Type A, Size 4	EA	4,310.16	231.57
6305	Class 1, Type A, Size 5	EA	8,296.21	271.05
6306	Class 1, Type B, Size 1	EA	1,059.40	82.06
6307	Class 1, Type B, Size 2	EA	1,621.99	112.65
6308	Class 1, Type B, Size 3	EA	2,984.92	151.31
6309	Class 1, Type B, Size 4	EA	4,338.65	218.17
6311	Class 1, Type B, Size 5	EA	8,320.85	255.47
16316 7000 Tin Plated Copper Bus Bar And Ground				
Note: Bus Bar Splice Kit. Per Section. Labor Included In Basic Distribution Section.				
7001	600A Horiz Tin Plated CU Bus Kit	EA	106.52	
7002	800A Horiz Tin Plated CU Bus Kit	EA	133.62	
7003	1200A Horiz Tin Pltd. CU Bus Kit	EA	160.72	
7004	1600A Horiz Tin Pltd. CU Bus Kit	EA	213.98	
7005	2000A Horiz Tin Pltd. CU Bus Kit	EA	367.23	
7006	1/4"x2" Horiz Tin Plated CU Grnd Bus Kit	EA	57.93	
16316 8000 Disconnect Switch Fo MCCs				
16316 8100 3 Pole Circuit Breaker Disconnect For MCC.				
Note: Includes Door, Unit Support Pan, Inverse Time (Thermal Magnetic) Circuit Breaker, And NEMA 1, NEMA 1 W/Gasket, Or NEMA 12 Enclosure. Class 1 Type A (No Starters)				
8101	150A Rating, 15A-100A Trip Range	EA	574.00	56.98
8102	150A Rating, 125A-150A Trip Range	EA	1,107.17	63.08
8103	225A Rating, 70A-225A Trip Range	EA	1,328.27	84.98
8104	400A Rating, 125A-400A Trip Range	EA	2,285.39	112.01
8105	600A Rating, 300A-600A Trip Range	EA	4,098.57	140.00
8106	800A Rating, 400A-800A Trip Range	EA	4,730.70	140.00
8107	1200A Rating, 600A-1200A Trip Range	EA	10,063.25	175.30
16316 8200 Fusible Disconnect Switch For MCC.				
Note: Includes Door, Unit Support Pan, Fuses And NEMA 1, NEMA 1 W/Gasket, Or NEMA 12 Enclosure. Class 1 Type A (No Starters)				
8201	30A Switch Rating, W/30A Fuse Clips	EA	331.47	55.42
8202	60A Switch Rating, W/60A Fuse Clips	EA	381.88	75.53
8203	100A Switch Rating, W/100A Fuse Clips	EA	529.35	96.68
8204	200A Switch Rating, W/200A Fuse Clips	EA	1,023.35	138.43
8205	400A Switch Rating, W/400A Fuse Clips	EA	1,879.10	176.09
8206	600A Switch Rating, W/600A Fuse Clips	EA	4,514.17	176.09
8207	800A Switch Rating, W/800A Fuse Clips	EA	5,578.41	220.06
8208	1220A Switch Rating, W/1200A Fuse Clips	EA	8,336.81	220.06
16323 Load centers				
16323 0010 Load centers				
3950	Load center, 1 p, indoor, 20 ckt, 3w, 120/240V, 125A main breaker	EA	744.64	113.65
4300	Load center, 1 p, indoor, 30 ckt, 3w, 120/240V, 200A main breaker	EA	1,136.28	227.30
16323 4500 Min Breaker Load Center 3 Wire, 20Amp 120/240V, 1 Pole Plug-in Breaker.				
4502	125A Main Brkr, Indoor, 12 Circuit	EA	384.55	119.64
4504	125A Main Brkr, Indoor, 18 Circuit	EA	565.05	179.37
4506	200A Main Brkr, Indoor, 20 Circuit	EA	676.45	191.39
4508	200A Main Brkr, Indoor, 24 Circuit	EA	773.71	220.98
4510	200A Main Brkr, Indoor, 30 Circuit	EA	857.20	239.10
4512	200A Main Brkr, Indoor, 40 Circuit	EA	1,131.61	318.91
4516	200A Main Brkr, Rainproof, 24 Cir cuit	EA	790.66	220.81
4518	200A Main Brkr, Rainproof, 30 Cir cuit	EA	861.23	239.10
4520	200A Main Brkr, Rainproof, 40 Cir cuit	EA	1,084.43	318.91
4522	400A Main Brkr, Indoor, 42 Circuit	EA	2,357.98	398.57
4524	400A Main Brkr, Rainproof, 42 Cir cuit	EA	2,529.54	398.57
16323 4600 Min Breaker Load Center 4 Wire, 20Amp 120/208V, 1 Pole Plug-in Breaker.				
4610	200A Main Brkr, Indoor, 30 Circuit	EA	1,097.40	239.10
4620	200A Main Brkr, Indoor, 42 Circuit	EA	1,455.22	358.74
4630	200A Main Brkr, Rainproof, 30 Cir cuit	EA	1,148.61	239.10
4640	200A Main Brkr, Rainproof, 42 Cir cuit	EA	1,506.69	358.74

16324 Meter Centers and Sockets

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16324 0010	Meter centers and sockets Direct Read, With 15 Mn. Demand			
0100	Meter centers & sockets, 4 term 100 A, socket, 1 position	EA	120.60	38.12
0300	Meter centers & sockets, 4 term 200 A, socket, 1 position	EA	195.65	65.25
4000	Meter centers & sockets, 5 term 200 A, socket, 3 ph, 3 W	EA	223.40	24.64
4020	Meter centers & sockets, 7 term 200 A, socket, 3 ph, 600 V	EA	240.83	53.70
4040	Meter ctr & sockets, KWH meter, 200 A, 120/240V, 3 ph	EA	433.78	5.86
4042	100A To 200A 120V Or 240v, 1Ph, KWH Meter	EA	69.34	5.85
4058	Grnd Fault Sensor, 5"x8" Window	EA	662.49	7.20
4060	Meter ctr & sockets, adj time delay, relay prot, gnd fault	EA	5,003.06	15.37
4080	Meter ctr, relay prot, gnd fault monitor/test panel w/wo trippin	EA	5,322.60	15.37
4082	100A,Ugnd, 5 Term Meter Socket exp On Wood WCirc Closing	EA	228.80	47.00
4084	Comb Mr &CT Cab,15-30A,13 Term Ugnd, w/Test Sw & Trans Base	EA	1,247.21	151.09
16324 4100	Current Transformer Enclosure			
4110	CT Cover, Screwed, 18x24x9, NEMA3R	EA	232.75	40.26
16325 0010	Panelboards			
16325 4000	Unassembled			
Note: The Prices, Daily Outputs, Weights And Volumes In This Section Are Set Up As Follows: 1. Panelboard Data Includes The Main Device (Lugs, Breakers) And That Portion Of The Panel Box, Trim And Interior Occupied By That Device 2. Branch Circuit Breaker Data Includes The Breaker Itself And That Portion Of The Panel Box, Trim And Interior That The Device Occupies 3. Spaces Include That Portion Of The Panel Box, Trim And Interior Reserved By That Space 4. The Maximum Single Pole Capacity Of The Panelboard Main Device (Lugs, Breakers) Is Indicated 5. Data For A Complete Panelboard Will Be The Sum Of Main Device Data And The Branch Circuit Breakers And Space Data (Within The Capacity Of The Main Device). This Sum Will Include Main And Branch Breakers Along With The Panel Box, Trims, And Interior.				
16325 4009	1 phase, 3 wire, 120/240 V Main Lugs			
4010	Panelboard, unassm main lug, 100A, 20ckt, 1ph, 3W, 120/240V, 10000A	EA	444.04	42.84
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4020	Panelboard, unassm main lug, 225A, 42ckt, 1ph, 3W, 120/240V, 10000A	EA	701.19	89.18
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4021	400A-42 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Lugs, Unassembled	EA	1,007.11	110.64
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4022	600A-42 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Lugs, Unassembled	EA	1,181.30	140.39
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4023	800A-42 CKT Cap, 120/240V, 3W, 1PH Panelboard, Main Lugs,	EA	1,321.57	159.64
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4024	1200A-42 CKT Cap, 120/240V, 3W, 1PH Panelboard, Main Lugs,	EA	1,500.78	175.67
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4025	125A-30 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Lugs,	EA	553.12	76.13
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
16325 4027	1 phase, 3 wire, 120/240 V Main Breakers			
4030	Panelboard, unassm main brkr, 100A, 20ckt, 1ph, 3W, 120/240V,	EA	577.58	59.96
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4040	Panelboard, unassm main brkr, 225A, 42ckt, 1ph, 3W, 120/240V,	EA	1,298.07	116.42
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4042	400A-42 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Brkr, Unassembled	EA	2,143.11	138.12
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4043	600A-42 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Brkr, Unassembled	EA	2,538.96	149.92
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4044	800A-42 Ckt Cap, 120/240V, 3W, 1PH Panelboard, Main	EA	3,314.68	154.67
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4045	1200A-42 Ckt Cap, 120/240V, 3W, 1PH Panelboard, Main	EA	4,190.45	199.96
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4046	150A-30 Ckt Cap, 120/240V, 3W, 1Ph Panelboard, Main Breaker,	EA	1,191.30	104.68
4045	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
16325 4049	3 phase, 4 wire, 120/208 V Main Lugs			
4050	Panelboard, unassm main lug, 100A, 30 ckt cap, 3ph, 4W, 120/208V	EA	509.11	45.07
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4060	Panelboard, unassm main lug, 225A, 42 ckt cap, 3ph, 4W, 120/208V	EA	725.59	96.13
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4061	400A-42 Ckt Cap, 120/208V, 4W, 3Ph Panelboard, Main Lugs, Unassembled	EA	1,056.16	75.32
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4062	600A-42 Ckt Cap, 120/208V, 4W, 3Ph Panelboard, Main Lugs, Unassembled	EA	1,277.94	128.79
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4063	800A-42 CKT Cap, 120/208V, 4W, 3PH Panelboard, Main Lugs,	EA	1,515.61	196.41
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4064	1200A-42 CKT Cap, 120/208V, 4W, 3PH Panelboard, Main Lugs,	EA	1,948.67	275.67
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16325 4067 3 phase, 4 wire, 120/208 V Main Breakers				
4070	Panelboard, unassm main brkr, 100A, 30 ckt cap, 3ph, 4W, 120/208V	EA	685.64	74.08
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4080	Panelboard, unassm main brkr, 225A, 42 ckt cap, 3ph, 4W, 120/208V	EA	1,418.92	125.14
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4082	400A-42 Ckt Cap, 120/208V, 4W, 3PH Panelboard, Main Brkr, Unassembled	EA	2,327.75	87.66
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4083	600A-42 Ckt Cap, 120/208V, 4W, 3PH Panelboard, Main Brkr, Unassembled	EA	2,995.71	159.29
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4084	800A-42 CKT Cap, 120/208V, 4W, 3PH Panelboard, Main	EA	3,685.99	208.15
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4085	1200A-42 CKT Cap, 120/208V, 4W, 3PH Panelboard, Main	EA	4,877.10	320.49
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
4086	150A-30 Ckt Cap, 120/208V, 4W, 3PH Panelboard, Main Breaker,	EA	879.21	62.66
4085	Panelboard, weathert ight NEMA 3R enclosure, add		500.00	
16325 4099 3 phase, 3 wire, 480 V Main Lugs				
4100	Panelboard, unassm main lug, 100A, 30 ckt cap, 3ph, 3W, 480V	EA	728.72	60.57
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4102	125A-30 Ckt Cap, 480V, 3W, 3PH Panelboard, Main Lugs,	EA	768.23	60.60
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4110	Panelboard, unassm main lug, 225A, 42 ckt cap, 3ph, 3W, 480V	EA	1,030.02	132.83
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4111	400A-42 Ckt Cap, 480V, 3W, 3PH Panelboard, Main Lugs, Unassembled	EA	1,344.31	139.36
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4112	600A-42 Ckt Cap, 480V, 3W, 3PH Panelboard, Main Lugs, Unassembled	EA	1,493.69	152.20
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4113	800A-42 CKT Cap, 480V, 3W, 3PH Panelboard, Main Lugs,	EA	1,717.77	184.50
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4114	1200A-42 CKT Cap, 480V, 3W, 3PH Panelboard, Main Lugs,	EA	1,863.03	227.87
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4119 3 phase, 4 wire, 480 V Main Breakers				
4120	Panelboard, unassm main brkr, 100A, 30 ckt cap, 3ph, 3W, 480V	EA	1,036.55	69.50
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4130	Panelboard, unassm main brkr, 150A, 42 ckt cap, 3ph, 3W, 480V	EA	1,860.47	145.32
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4140	Panelboard, unassm main brkr, 225A, 42 ckt cap, 3ph, 3W, 480V	EA	1,860.47	147.51
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4142	400A-42 Ckt Cap, 480V, 3W, 3PH Panelboard, Main Brkr, Unassembled	EA	2,749.11	151.77
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4143	600A-42 Ckt Cap, 480V, 3W, 3PH Panelboard, Main Brkr, Unassembled	EA	2,851.81	154.99
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4144	800A-42 CKT Cap, 480V, 3W, 3PH Panelboard, Main Breaker,	EA	3,130.28	189.96
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4145	1200A-42 CKT Cap, 480V, 3W, 3PH Panelboard, Main Breaker,	EA	4,122.30	278.50
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4149 3 phase, 4 wire, 277/480 V Main Lugs				
4150	Panelboard, unassm main lug, 100A, 30 ckt cap, 3ph, 4W, 277/480V	EA	728.72	75.64
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4160	Panelboard, unassm main lug, 225A, 42 ckt cap, 3ph, 4W, 277/480V	EA	1,030.02	156.31
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4161	400A-42 Ckt Cap, 277/480V, 4W, 3PH Panelboard, Main Lugs, Unassembled	EA	1,311.99	184.11
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4162	600A-42 Ckt Cap, 277/480V, 4W, 3PH Panelboard, Main Lugs, Unassembled	EA	1,463.93	219.39
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4163	800A-42 CKT Cap, 277/480 V, 4W, 3PH Panelboard, Main Lugs,	EA	1,657.17	272.76
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4164	1200A-42 CKT Cap, 277/480 V, 4W, 3PH Panelboard, Main Lugs, U	EA	2,072.11	381.13
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4165	150A-30 Ckt Cap, 277/480V, 4W, 3PH Panelboard, Main Lugs,	EA	963.47	141.84
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4167 3 phase, 4 wire, 277/480 V Main Breakers				
4170	Panelboard, unassm main brkr, 100A, 30 ckt cap, 3ph, 4W, 277/480V	EA	1,036.55	90.42
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4180	Panelboard, unassm main brkr, 150A, 42 ckt cap, 3ph, 4W, 277/480V	EA	1,860.47	167.37
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4190	Panelboard, unassm main brkr, 225A, 42 ckt cap, 3ph, 4W, 277/480V	EA	1,860.47	167.37

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4192	400A-42 Ckt Cap, 277/480V, 4W 3Ph Panelboard, Main Brkr, Unassembled	EA	2,787.91	169.32
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4193	600A-42 Ckt Cap, 277/480V, 4W 3Ph Panelboard, Main Brkr, Unassembled	EA	3,029.73	231.62
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4194	800A-42 CKT Cap, 277/480V, 4W 3PH Panelboard, Main	EA	3,437.00	277.26
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4195	1200A-42 CKT Cap, 277/480V, 4W 3PH Panelboard, Main	EA	4,518.67	407.19
4195	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4300 Assembled				
Note: Prices, Daily Outputs, Weights And Volumes In This Section Include: 1. Main Lugs Or Breaker (As Indicated) 2. 20 Amp, 1 - Pole Branch Circuit Breakers (Number Of Which Is Indicated) 3. Panelboard Box, Trim And Interior.				
16325 4309 1 phase, 3 wire, 120/240 V Main Lugs				
4310	Panelboard assem, 8-20A brkr, main lugs, 100A, 1ph, 3 wire,	EA	696.71	178.08
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4312	100A, w/10-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	756.57	201.45
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4320	Panelboard assem, 12-20A brkr, main lugs, 100A, 1ph, 3 wire,	EA	816.54	224.61
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4322	100A, w/14-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	868.80	241.91
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4330	Panelboard assem, 16-20A brkr, main lugs, 100A, 1ph, 3 wire,	EA	921.12	259.89
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4332	100A, w/18-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,018.85	283.64
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4340	Panelboard assem, 20-20A brkr, main lugs, 100A, 1ph, 3 wire,	EA	1,117.61	307.15
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4342	225A, w/22-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,183.75	327.83
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4350	Panelboard assem, 24-20A brkr, main lugs, 225A, 1ph, 3 wire,	EA	1,250.15	348.71
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4352	225A, w/26-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,350.16	342.01
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4360	Panelboard assem, 28-20A brkr, main lugs, 225A, 1ph, 3 wire,	EA	1,450.45	335.13
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4362	225A, w/30-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,556.98	363.47
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4370	Panelboard assem, 32-20A brkr, main lugs, 225A, 1ph, 3 wire,	EA	1,664.26	391.52
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4372	225A, w/34-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,711.62	404.85
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4380	Panelboard assem, 36-20A brkr, main lugs, 225A, 1ph, 3 wire,	EA	1,758.45	418.36
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4382	225A, w/38-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,901.74	442.89
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4384	225A, w/40-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Lugs, Assemb	EA	1,515.77	367.83
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4390	Panelboard assem, 42-20A brkr, main lugs, 225A, 1ph, 3 wire,	EA	2,043.80	467.26
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4397 1 phase, 3 wire, 120/240 V Main Breakers				
4400	Panelboard assem, 12-20A brkr, main brkr, 100A, 1ph, 3 wire,	EA	980.90	253.72
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4402	100A, w/14-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	1,049.93	277.37
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4410	Panelboard assem, 16-20A brkr, main brkr, 100A, 1ph, 3 wire,	EA	1,118.71	300.70
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4412	100A, w/18-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	1,205.18	331.69
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4420	Panelboard assem, 20-20A brkr, main brkr, 100A, 1ph, 3 wire,	EA	1,291.98	362.76
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4422	225A, w/22-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	1,702.42	423.00
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4430	Panelboard assem, 24-20A brkr, main brkr, 225A, 1ph, 3 wire,	EA	2,112.85	483.60
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4432	225A, w/26-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	2,205.20	512.93
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4440	Panelboard assem, 28-20A brkr, main brkr, 225A, 1ph, 3 wire,	EA	2,298.55	542.82

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4442	225A, w/30-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	2,361.40	563.35
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4450	Panelboard assem 32-20A brkr, main brkr, 225A, 1ph, 3 wire,	EA	2,426.10	583.92
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4452	225A, w/34-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	2,486.09	628.49
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4460	Panelboard assem 36-20A brkr, main brkr, 225A, 1ph, 3 wire,	EA	2,545.62	672.75
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4462	225A, w/38-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	2,635.16	686.82
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4464	225A, w/40-20A Brkr, 120/240V, 3W 1 Ph Panelboard, Main Brkr, Assemb	EA	2,813.99	715.80
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4470	Panelboard assem 42-20A brkr, main brkr, 225A, 1ph, 3 wire,	EA	2,902.58	730.27
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4479	3 phase, 4 wire, 120/208 V Main Lugs			
4480	Panelboard assem 8-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	707.82	147.27
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4482	100A, w/10-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	755.41	163.37
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4490	Panelboard assem 12-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	803.08	179.39
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4492	100A, w/14-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	916.41	206.02
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4500	Panelboard assem 16-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	1,029.90	233.15
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4502	100A, w/18-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,089.66	248.11
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4510	Panelboard assem 20-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	1,148.98	263.47
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4512	100A, w/22-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,197.12	256.63
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4520	Panelboard assem 24-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	1,245.51	293.96
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4522	100A, w/26-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,320.03	313.89
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4530	Panelboard assem 28-20A brkr, main lugs, 100A, 3ph, 4 wire,	EA	1,395.02	334.03
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4532	100A, w/30-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,512.31	340.98
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4540	Panelboard assem 32-20A brkr, main lugs, 225A, 3ph, 4 wire,	EA	1,421.10	348.11
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4542	225A, w/34-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,708.54	396.87
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4550	Panelboard assem 36-20A brkr, main lugs, 225A, 3ph, 4 wire,	EA	1,786.34	445.52
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4552	225A, w/38-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,851.13	457.29
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4554	225A, w/40-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,980.49	480.02
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4560	Panelboard assem 42-20A brkr, main lugs, 225A, 3ph, 4 wire,	EA	2,046.28	491.72
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4567	3 phase, 4 wire, 120/208 V Main Breakers			
4570	Panelboard assem 16-20A brkr, main brkr, 100A, 3ph, 4 wire,	EA	1,336.97	272.51
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4572	100A, w/18-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assemb	EA	1,077.64	195.99
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4580	Panelboard assem 20-20A brkr, main brkr, 100A, 3ph, 4 wire,	EA	1,435.01	302.51
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4582	100A, w/22-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assemb	EA	1,438.33	287.40
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4590	Panelboard assem 24-20A brkr, main brkr, 100A, 3ph, 4 wire,	EA	1,562.84	341.87
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4592	100A, w/26-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assemb	EA	1,568.49	322.05
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4600	Panelboard assem 28-20A brkr, main brkr, 100A, 3ph, 4 wire,	EA	1,695.63	376.52
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4602	100A, w/30-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assem	EA	2, 131. 30	359. 10
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4610	Panelboard assem, 32-20A brkr, main brkr, 225A, 3ph, 4 wire,	EA	2, 568. 13	465. 87
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4612	225A, w/34-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assem	EA	2, 677. 33	421. 30
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4620	Panelboard assem, 36-20A brkr, main brkr, 225A, 3ph, 4 wire,	EA	2, 786. 15	503. 50
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4622	225A, w/38-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assem	EA	2, 837. 84	517. 08
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4624	225A, w/40-20A Brkr, 120/208V, 4W 3 Ph Panelboard, Main Brkr, Assem	EA	2, 937. 71	544. 56
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4630	Panelboard assem, 42-20A brkr, main brkr, 225A, 3ph, 4 wire,	EA	2, 988. 48	558. 10
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
16325	4639 3 phase, 3 wire, 480 V Main Lugs			
4650	Panelboard assem, 8-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1, 173. 76	136. 91
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4652	100A, w/10-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	1, 315. 47	148. 93
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4660	Panelboard assem, 12-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1, 457. 26	139. 00
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4662	100A, w/14-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	1, 649. 61	182. 16
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4670	Panelboard assem, 16-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1, 842. 12	200. 31
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4672	100A, w/18-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	2, 045. 49	227. 48
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4680	Panelboard assem, 20-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2, 248. 36	251. 02
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4682	100A, w/22-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	2, 394. 28	243. 08
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4690	Panelboard assem, 24-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2, 540. 01	258. 43
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4692	100A, w/26-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	2, 748. 77	325. 31
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4700	Panelboard assem, 28-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2, 958. 69	378. 29
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4702	100A, w/30-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	3, 211. 75	419. 67
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4710	Panelboard assem, 32-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	3, 465. 53	410. 52
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4712	225A, w/34-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	3, 611. 44	429. 70
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4720	Panelboard assem, 36-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	3, 756. 82	427. 05
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4722	225A, w/38-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	3, 905. 78	429. 99
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4724	225A, w/40-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Lugs, Assembled	EA	4, 206. 89	444. 81
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4730	Panelboard assem, 42-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	4, 355. 97	472. 86
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
16325	4737 3 phase, 3 wire, 480 V Main Breakers			
4738	100A, w/14-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	2, 081. 89	315. 38
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4740	Panelboard assem, 16-20A brkr, main breaker, 100A, 3ph, 3 wire,	EA	2, 261. 14	354. 10
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4742	100A, w/18-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	2, 440. 45	392. 72
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4750	Panelboard assem, 20-20A brkr, main breaker, 100A, 3ph, 3 wire,	EA	2, 619. 65	432. 15
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4752	100A, w/22-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	2, 773. 74	430. 84
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4760	Panelboard assem, 24-20A brkr, main breaker, 100A, 3ph, 3 wire,	EA	2, 926. 99	422. 22
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4762	100A, w/26-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	3, 122. 04	460. 56
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500. 00	
4770	Panelboard assem, 28-20A brkr, main breaker, 100A, 3ph, 3 wire,	EA	3, 318. 90	520. 13

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4772	100A, w/30-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	3,804.53	568.06
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4780	Panelboard assem 32-20A brkr, main breaker, 225A, 3ph, 3 wire,	EA	4,291.32	575.16
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4782	225A, w/34-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	4,433.86	592.00
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4790	Panelboard assem 36-20A brkr, main breaker, 225A, 3ph, 3 wire,	EA	4,575.88	617.43
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4796	225A, w/38-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	4,717.59	655.12
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4798	225A, w/40-20A Brkr, 480V, 3W 3 Ph Panelboard, Main Brkr, Assembled	EA	5,000.05	667.36
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4800	Panelboard assem 42-20A brkr, main breaker, 225A, 3ph, 3 wire,	EA	5,140.29	728.21
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4809	3 phase, 3 wire, 277/480 V Main Lugs			
4810	Panelboard assem 8-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1,201.63	156.45
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4812	100A, w/10-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,348.85	174.96
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4820	Panelboard assem 12-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1,495.94	193.68
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4822	100A, w/14-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	1,674.50	215.14
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4830	Panelboard assem 16-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	1,852.90	236.91
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4832	100A, w/18-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	2,054.71	262.58
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4840	Panelboard assem 20-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2,256.42	288.22
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4842	100A, w/22-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	2,412.94	308.75
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4850	Panelboard assem 24-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2,569.09	328.82
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4852	100A, w/26-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	2,701.82	324.89
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4860	Panelboard assem 28-20A brkr, main lugs, 100A, 3ph, 3 wire,	EA	2,834.12	320.63
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4862	100A, w/30-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	3,150.06	393.64
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4870	Panelboard assem 32-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	3,465.53	466.05
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4872	225A, w/34-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	3,611.44	474.28
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4880	Panelboard assem 36-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	3,756.82	482.36
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4882	225A, w/38-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	3,888.35	501.08
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4884	225A, w/40-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Lugs, Assemb	EA	4,154.60	538.85
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4890	Panelboard assem 42-20A brkr, main lugs, 225A, 3ph, 3 wire,	EA	4,286.25	557.54
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4897	3 phase, 3 wire, 277/480 V Main Breakers			
4898	100A, w/14-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	1,524.24	172.90
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4900	Panelboard assem 16-20A brkr, main brkr, 100A, 3ph, 3 wire,	EA	2,290.22	300.99
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4902	100A, w/18-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	2,483.52	323.15
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4910	Panelboard assem 20-20A brkr, main brkr, 100A, 3ph, 3 wire,	EA	2,677.17	345.59
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4912	100A, w/22-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	2,837.94	366.27
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4920	Panelboard assem 24-20A brkr, main brkr, 100A, 3ph, 3 wire,	EA	2,999.36	387.26
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4922	100A, w/26-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	3,176.28	406.83
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4930	Panelboard assem 28-20A brkr, main brkr, 100A, 3ph, 3 wire,	EA	3,352.67	426.55
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4932	100A, w/30-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	3,845.95	428.43
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4940	Panelboard assem 32-20A brkr, main brkr, 225A, 3ph, 3 wire,	EA	4,337.67	457.26
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4942	225A, w/34-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	4,486.01	476.48
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4950	Panelboard assem 36-20A brkr, main brkr, 225A, 3ph, 3 wire,	EA	4,633.84	495.87
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4960	Panelboard assem 42-20A brkr, main brkr, 225A, 3ph, 3 wire,	EA	5,207.83	548.49
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4961	225A, w/38-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	4,777.82	508.99
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4962	225A, w/40-20A Brkr, 277/480V, 3W 3 Ph Panelboard, Main Brkr, Assemb	EA	5,064.25	535.16
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4969 3 phase, 4 wire, 277/480 V				
4970	Panelboard assem 42-20A brkr, main breaker, 400A, 3ph, 4 W	EA	6,092.55	679.48
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
4980	Panelboard assem 42-20A brkr, main breaker, 600A, 3ph, 4 W	EA	7,811.48	822.64
4965	Panelboard, weatherti ght NEMA 3R enclosure, add		500.00	
16325 4999 Master control panel w/keyboard & battery backup				
5000	Panelboard, master control panel w/keyboard & battery backup	EA	22,828.37	405.56
16325 5009 Transceiver panel				
5010	Panelboard, transceiver panel w/32 - 20A 277V relays	EA	19,851.91	366.91
16325 5019 Power filter				
5020	Panelboard, power filter, 4 conductor, 480/277V, 600A	EA	18,023.79	320.94
5030	Panelboard, power filter, 4 conductor, 480/277V, 200A	EA	10,716.99	140.00
16325 5039 Signal filter				
5040	Panelboard, signal filter, 125V, 0.5A, 500 conductor	EA	8,101.39	296.27
5050	Panelboard, signal filter, 125V, 0.5A, 200 conductor	EA	5,560.50	179.08
5060	Panelboard, signal filter, 125V, 0.5A, 3 pair conductor	EA	3,097.67	104.09
5070	Panelboard, signal filter, 2-1 pair conductor, 24V DC, 5V, 5A	EA	4,259.64	104.09
16326 0010 Panelboard & load center circuit breakers				
16326 0050 120 volt				
0100	Panelboard&d ctr ckt brkr, 15 - 50A, bolt-on, 10k AIC, 1 P, 120V	EA	39.99	15.67
0310	Panelboard&d ctr ckt brkr, 70 - 100A, bolt-on, 10k AIC, 1 P, 120V	EA	59.75	20.57
16326 0350 240 volt				
0400	Panelboard&d ctr ckt brkr, 15 - 50A, bolt-on, 10k AIC, 2 P, 240V	EA	61.02	17.91
0600	Panelboard&d ctr ckt brkr, 80 - 100A, bolt-on, 10k AIC, 2 P, 240V	EA	155.51	35.18
0610	Panelboard&d ctr ckt brkr, 125 - 150A, bolt-on, 10k AIC, 2 P, 240V	EA	230.39	54.78
0700	Panelboard&d ctr ckt brkr, 15 - 60A, bolt-on, 10k AIC, 3 P, 240V	EA	126.51	28.40
0910	Panelboard&d ctr ckt brkr, 70 - 100A, bolt-on, 10k AIC, 3 P, 240V	EA	190.64	48.62
0920	Panelboard&d ctr ckt brkr, 125 - 150A, bolt-on, 10k AIC, 3 P, 240V	EA	510.96	39.22
0930	Panelboard&d ctr ckt brkr, 15 - 60A, bolt-on, gnd fault, 1 P, 120V	EA	112.15	11.91
16326 4999 277 volt				
5000	Panelboard & ld ctr ckt brkr, 277 volt, 1 pole, 15 to 60A	EA	88.79	11.67
5010	Panelboard & ld ctr ckt brkr, 277 volt, 1 pole, 70 to 100A	EA	155.55	24.93
5020	Panelboard & ld ctr ckt brkr, 15 to 60A, 277 volt, 1 pole GFI	EA	377.50	20.50
16326 5029 480 volt				
5030	Panelboard & ld ctr ckt brkr, 480 volt, 2 pole, 15 to 60A	EA	255.07	28.01
5040	Panelboard & ld ctr ckt brkr, 480 volt, 2 pole, 70 to 100A	EA	341.42	42.16
5050	Panelboard & ld ctr ckt brkr, 480 volt, 2 pole, 125 to 150A	EA	639.57	54.57
5060	Panelboard & ld ctr ckt brkr, 480 volt, 3 pole, 15 to 60A	EA	330.43	33.86
5070	Panelboard & ld ctr ckt brkr, 480 volt, 3 pole, 70 to 100A	EA	414.61	59.04
5080	Panelboard & ld ctr ckt brkr, 480 volt, 3 pole, 125 to 150A	EA	1,011.43	81.95
16326 5089 600 volt				
5090	Panelboard & ckt brkr, 14k AIC, 30A, NEMA 1 encl only, 600V, 3 p	EA	264.21	70.92
5100	Panelboard & ckt brkr, 14k AIC, 60A, NEMA 1 encl only, 600V, 3 p	EA	264.21	70.92
5110	Panelboard & ckt brkr, 14k AIC, 100A, NEMA 1 encl only, 600V, 3 p	EA	298.60	96.70
5120	Panelboard & ckt brkr, 14k AIC, 225A, NEMA 1 encl only, 600V, 3 p	EA	440.76	146.70
16328 0010 Switchboards, incoming main service section				
16328 1909 480 volt, 4 wire				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1910	Switchbrd, no main disc, 600 A, incl CT compt, 480 volt, 4 wire	EA	1,396.09	326.89
1920	Switchbrd, no main disc, 800 A, incl CT compt, 480 volt, 4 wire	EA	1,450.12	390.30
1930	Switchbrd, no main disc, 1200 A, incl CT compt, 480 volt, 4 wire	EA	1,992.49	453.24
1940	Switchbrd, no main disc, 1600 A, incl CT compt, 480 volt, 4 wire	EA	2,251.00	472.50
1950	Switchbrd, no main disc, 2000 A, incl CT compt, 480 volt, 4 wire	EA	2,309.93	532.19
2810	Switchbrd, fused switch & CT compt, 400 amp, 480 volt, 4 wire	EA	1,597.15	269.34
16328 6000 Underground pull section, w/o bus or terminal				
6010	Switchbrd, ugn'd pull sect, 15"- 20"D, w/o bus or term 12"-20"W	EA	1,804.76	57.31
6020	Switchbrd, ugn'd pull sect, 36"D, w/o bus or term 14"-20"W	EA	1,906.69	68.61
6030	Switchbrd, ugn'd pull sect, 42"- 60"D, w/o bus or term 14"-20"W	EA	1,959.53	106.09
6040	Switchbrd, ugn'd pull sect, 20"D, w/o bus or term 24"-28"W	EA	1,841.26	82.73
6050	Switchbrd, ugn'd pull sect, 30"D, w/o bus or term 24"-28"W	EA	1,841.26	82.73
6060	Switchbrd, ugn'd pull sect, 42"- 60"D, w/o bus or term 26"-30"W	EA	1,977.12	121.56
6070	Switchbrd, ugn'd pull sect, 36"D, w/o bus or term 28"-30"W	EA	1,933.11	87.08
6080	Switchbrd, ugn'd pull sect, 42"- 60"D, w/o bus or term 38"W	EA	1,999.15	136.79
16328 7619 Min breaker				
7620	Switchbrd, main breaker, 277/480 V, 400 amp	EA	3,534.54	223.38
7630	Switchbrd, main breaker, 277/480 V, 600 amp	EA	6,846.62	261.39
7640	Switchbrd, main breaker, 277/480 V, 800 amp	EA	7,800.76	382.17
7650	Switchbrd, main breaker, 277/480 V, 1200 amp	EA	11,635.66	527.77
7660	Switchbrd, main breaker, 277/480 V, 1600 amp	EA	17,524.73	570.49
7670	Switchbrd, main breaker, 277/480 V, 2000 amp	EA	19,320.65	1,042.41
16329 0010 Switchboards, in plant distribution				
16329 0399 Min circuit breaker				
Note: Distribution Section - Enclosure, Copper Bus, Interior - Required For The Fusible Switch. For Both 240 Volt And 480 Volt Switches				
16329 0399 To 600 V				
0400	Switchbrd, main CB, 200 amp, to 600 volt, 3 pole, 3 wire	EA	3,766.97	264.71
16329 0549 277/480 V				
0550	Switchbrd, main CB, 4 wire, 200 amp, 277/480 volt, 3 pole	EA	3,842.50	264.71
0580	Switchbrd, main CB, 4 wire, 800 amp, 277/480 volt, 3 pole	EA	5,425.79	316.30
0585	Switchbrd, main CB, 4 wire, 1000 amp, 277/480 volt, 3 pole	EA	6,657.90	335.24
0590	Switchbrd, main CB, 4 wire, 1200 amp, 277/480 volt, 3 pole	EA	8,226.55	335.24
0600	Switchbrd, main CB, 4 wire, 1600 amp, 277/480 volt, 3 pole	EA	13,224.64	358.01
0610	Switchbrd, main CB, 4 wire, 2000 amp, 277/480 volt, 3 pole	EA	14,136.16	383.32
0635	Switchbrd, main CB, 4 wire, 2500 amp, 277/480 volt, 3 pole	EA	24,981.18	470.38
0640	Switchbrd, main CB, 4 wire, 3000 amp, 277/480 volt, 3 pole	EA	33,419.13	470.38
0650	Switchbrd, main CB, 4 wire, 4000 amp, 277/480 volt, 3 pole	EA	63,325.16	589.17
16329 0699 Min fusible switch with fuse				
16329 0699 208/240 volt				
0700	Swbrd, main fusible sw w/fuse, 200 A, 208/240 V, 3 P, 3 wire	EA	2,825.78	264.71
16329 0744 240 volt Copper Bus, Non-Metering Type, With Fuses				
0745	Swbrd, main fusible sw w/fuse, 400 A, 240V, 3 phase, 3 wire	EA	3,158.46	327.47
0750	Swbrd, main fusible sw w/fuse, 600 A, 240V, 3 phase, 3 wire	EA	3,966.44	352.15
0755	Swbrd, main fusible sw w/fuse, 800 A, 240V, 3 phase, 3 wire	EA	6,088.81	339.74
0760	Swbrd, main fusible sw w/fuse, 1200 A, 240V, 3 phase, 3 wire	EA	7,069.23	333.82
16329 0899 480 or 600 volt Copper Bus, Non-Metering Type, With Fuses				
0900	Swbrd, main fusible sw w/fuse, 200 A, 480 or 600 V, 3 P, 3 W	EA	3,464.86	330.95
0910	Swbrd, main fusible sw w/fuse, 400 A, 480 or 600 V, 3 P, 3 W	EA	3,497.29	352.54
0920	Swbrd, main fusible sw w/fuse, 600 A, 480 or 600 V, 3 P, 3 W	EA	4,106.58	362.26
0930	Swbrd, main fusible sw w/fuse, 800 A, 480 or 600 V, 3 P, 3 W	EA	6,088.81	419.46
0940	Swbrd, main fusible sw w/fuse, 1200 A, 480 or 600 V, 3 P, 3 W	EA	7,069.23	422.19
16329 1904 Factory installed, current transformer				
1905	Swbrd, factory installed, 800 amp & below, current transformer	EA	1,153.83	
1945	Swbrd, factory installed, 1000 - 1500 amp, current transformer	EA	1,361.59	
1955	Swbrd, factory installed, 2000 - 6000 amp, current transformer	EA	1,883.54	
1960	Swbrd, factory installed, w/ 200VA max, potential transformer	EA	983.02	
16329 4999 Min breaker				
16329 4999 Current limiter, static trip				
Note: 11 Static Trip Not Applicable To Ground- Fault Or Plug In Test Feature Manually Operated				
5000	Switchbrd, main brkr, 50-1600 A, w/ current limiter, static trip	EA	17,322.52	849.53
5010	Switchbrd, main brkr, 1200-3200 A, w/ current limiter, static	EA	44,091.07	1,520.40

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5020	Switchbrd, main brkr, 4000 A, w/ current limiter, static trip	EA	60,286.59	2,099.27
16329 5029	Factory installed, ground-fault trip			
5030	Switchbrd, main brkr, all brkr, factory instld, ground-fault	EA	6,823.98	
5040	Switchbrd, main brkr, selective trip, factory instld, short time	EA	147.80	
5050	Switchbrd, main brkr, manually open brkr, factory instld, shunt	EA	1,873.32	
16329 5099	Electric operated, static trip			
Note: 11 Static Trip Not Applicable To Ground-Fault Or Plug In Test Feature Manually Operater				
5100	Switchbrd, main brkr, 50-1600 A, electric operated, static trip	EA	19,307.16	816.58
5110	Switchbrd, main brkr, 1200-3200 A, electric operated, static	EA	46,597.20	1,468.23
5120	Switchbrd, main brkr, 4000 A, electric operated, static trip	EA	62,621.67	2,120.24
16329 5199	With ground fault, static trip			
Note: Interqual Groundfault And Plug-In Test Provision, Price Does Not Include System, Add Price From Section Drawout Munted Manually Operated				
5200	Switchbrd, main brkr, 50-1600 A, w/ ground fault, static trip	EA	12,121.36	709.82
5210	Switchbrd, main brkr, w/ ground fault, static trip, 2000 A	EA	18,871.31	1,296.74
5220	Switchbrd, main brkr, 1200-3200 A, w/ ground fault, static trip	EA	31,446.64	1,992.11
5230	Switchbrd, main brkr, w/ ground fault, static trip, 4000 A	EA	44,840.94	2,869.99
5232	Ground-fault Trip All Power Breakers - Factory Installed	EA	2,402.53	
5234	Key Interlock All Powerbreakers Factory Installed	EA	310.28	
5236	Short Time Delay Selective Trip Factory Installed	EA	407.06	
5238	Shunt Trip Manually Open Breakers - Factory Installed	EA	293.20	
16329 5280	DS Breakers With Amptector Static Trip Includes			
Note: Interqual Groundfault And Plug-In Test Provision, Price Does Not Include System, Add Price From Section Drawout Munted Electrical Operated				
5282	50-800A DS-206, Mh Brkr, Elec Opr w/GndFault, Amptector Stat Trp	EA	5,356.65	269.02
5284	50-1600A DS-416, Mh Brkr, Elec Opr w/GndFault, Amptector Stat Trp	EA	10,221.74	448.92
5286	2000A DS-420, Mh Brkr, Elec Opr w/GndFault, Amptector Stat Trp	EA	14,096.78	749.57
5288	1200-3200A DS-632, Mh Brkr, Elec O w/GndFault, Amptector Stat Trp	EA	23,214.70	1,221.35
5289	4000A DS-840, Mh Brkr, Elec Opr w/GndFault, Amptector Stat Trp	EA	35,747.42	2,098.77
16329 5299	Mlded case circuit breaker			
16329 5299	3 pole			
5300	Switchbrd, mlded case ckt brkr, 3 pole, 70 - 225 A	EA	1,935.69	378.89
5310	Switchbrd, mlded case ckt brkr, 3 pole, 125 - 400 A	EA	3,089.56	335.31
5320	Switchbrd, mlded case ckt brkr, 3 pole, 400 - 800 A	EA	5,979.89	557.15
5330	Switchbrd, mlded case ckt brkr, 3 pole, 1000 - 2000 A	EA	9,606.23	362.80
5331	300-600A LC 3 Pole Crk Brkr Mlded Case Crk Brk Conventional	EA	2,607.22	300.79
5332	600-1200A NC 3 Pole Crk Brkr Mlded Case Crk Brk Conventional	EA	5,280.48	353.11
16329 5339	Factory installed, shunt trip			
5340	Switchbrd, mlded case ckt brkr, factory instld, shunt trip	EA	1,859.14	
5350	Switchbrd, mlded case ckt brkr, gnd fault, complete, factory	EA	1,859.14	
16329 5359	Panel mounted			
16329 5359	2 pole 2 Pole Type Wi 600V Ac			
5360	Switchbrd, mlded case ckt brkr, 15-60A, EHB, pnl mtd, 600V AC,	EA	276.66	18.47
5370	Switchbrd, mlded case ckt brkr, 70-100A, EHB, pnl mtd, 600V AC,	EA	339.72	17.87
5380	Switchbrd, mlded case ckt brkr, 125-150A, FB, pnl mtd, 600V AC,	EA	612.74	37.02
5390	Switchbrd, mlded case ckt brkr, 70-225A, JB, pnl mtd, 600V AC,	EA	779.93	20.50
5400	Switchbrd, mlded case ckt brkr, 125-400A, LBB, pnl mtd, 600V AC	EA	1,784.55	34.91
5410	Switchbrd, mlded case ckt brkr, 300-600A, LC, pnl mtd, 600V AC,	EA	2,386.22	43.36
5420	Switchbrd, mlded case ckt brkr, 900-1000A, NB, pnl mtd, 600V AC	EA	7,041.77	39.05
16329 5429	3 pole 3 Pole Type Wi 600V Ac			
5430	Switchbrd, mlded case ckt brkr, 15-60A, EHB, pnl mtd, 600V AC,	EA	365.79	30.56
5440	Switchbrd, mlded case ckt brkr, 70-100A, EHB, pnl mtd, 600V AC,	EA	446.63	31.88
5450	Switchbrd, mlded case ckt brkr, 125-150A, FB, pnl mtd, 600V AC,	EA	800.26	23.11
5460	Switchbrd, mlded case ckt brkr, 70-225A, JB, pnl mtd, 600V AC,	EA	1,020.43	35.13
5470	Switchbrd, mlded case ckt brkr, 125-400A, LBB, pnl mtd, 600V AC	EA	2,194.16	48.89
5480	Switchbrd, mlded case ckt brkr, 300-600A, LC, pnl mtd, 600V AC,	EA	3,026.83	72.82
5490	Switchbrd, mlded case ckt brkr, 900-1000A, NB, pnl mtd, 600V AC	EA	4,359.15	133.44
16329 5499	Structure per section			
16329 5699	Switchgear voltage regulator			
5700	Switchbrd, 480/277V or 208/120V, 50 kVA, switchgear voltage	EA	2,376.07	504.73
5710	Switchbrd, 480/277V or 208/120V, 75 kVA, switchgear voltage	EA	2,704.56	650.33

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5720	Switchbrd, 480/277V or 208/120V, 100 kVA, switchgear voltage	EA	3,061.16	801.82
16329 5800	Instrument Transformers & Metering Compartments			
5810	800A &Below Pri Cur Xfrmr, w/Comp /Compartment	EA	371.48	
5820	1000A-1500A Pri Cur Xfrmr, w/Comp /Compartment	EA	536.58	
5830	2000a-6000A Pri Cur Xfrmr, w/Comp /Compartment	EA	631.95	
5840	Potential Xformer w/200VA Max	EA	455.46	
16329 5900	Instruments			
5910	AC Voltmeter	EA	506.69	
5920	AC Ammeter	EA	506.69	
5930	AC Wattmeter	EA	1,353.56	
5940	Variometer	EA	1,528.62	
5950	Power Factor Meter	EA	1,221.19	
5960	Frequency Meter	EA	1,347.87	
5970	AC Watthour Meter Indicating 1 Or 2 Element w/Test Block&Plug	EA	1,715.08	
5980	AC Watthour Meter Recording 2 Element w/Recording KW Demand	EA	2,869.37	
16330	Switches			
16331 0010	Feeder section			
Note: Distribution Section - Enclosure, Copper Bus, Interior - Required For The Fusible Switch. For Both 240 Volt And 480 Volt Switches				
16331 0030	Circuit breakers			
16331 0159	FA frame, 15 to 60 amp			
0160	Feeder sect, ckt brkr, 1 pole, FA frame, 15-60 amp, 240 volt	EA	103.20	25.57
0170	Feeder sect, ckt brkr, 2 pole, FA frame, 15-60 amp, 240 volt	EA	153.65	29.11
0180	Feeder sect, ckt brkr, 3 pole, FA frame, 15-60 amp, 240 volt	EA	221.60	31.59
0210	Feeder sect, ckt brkr, 1 pole, FA frame, 15-60 amp, 480 volt	EA	121.10	15.96
0220	Feeder sect, ckt brkr, 2 pole, FA frame, 15-60 amp, 480 volt	EA	246.20	24.79
0230	Feeder sect, ckt brkr, 3 pole, FA frame, 15-60 amp, 480 volt	EA	320.02	28.58
16331 0279	FA frame, 70 to 100 amp			
0280	Feeder sect, ckt brkr, 1 pole, FA frame, 70-100 amp, 240 volt	EA	130.00	29.19
0310	Feeder sect, ckt brkr, 2 pole, FA frame, 70-100 amp, 240 volt	EA	242.07	40.85
0320	Feeder sect, ckt brkr, 3 pole, FA frame, 70-100 amp, 240 volt	EA	311.21	38.94
0330	Feeder sect, ckt brkr, 1 pole, FA frame, 70-100 amp, 480 volt	EA	147.26	29.19
0360	Feeder sect, ckt brkr, 2 pole, FA frame, 70-100 amp, 480 volt	EA	325.79	29.08
0370	Feeder sect, ckt brkr, 3 pole, FA frame, 70-100 amp, 480 volt	EA	386.63	36.74
16331 0411	FA frame, 100 to 225 amp			
0412	Feeder sect, ckt brkr, 2 pole, FA frame, 100-225 amp, 240 volt	EA	451.28	31.52
0414	Feeder sect, ckt brkr, 3 pole, FA frame, 100-225 amp, 240 volt	EA	688.13	37.70
0416	Feeder sect, ckt brkr, 2 pole, FA frame, 100-225 amp, 600 volt	EA	788.78	34.55
0418	Feeder sect, ckt brkr, 3 pole, FA frame, 100-225 amp, 600 volt	EA	993.01	54.84
16331 0424	KA frame, 70 to 225 amp			
0425	Feeder sect, ckt brkr, 3 pole, KA frame, 70-225 amp, 480 volt	EA	975.05	48.76
16331 0434	LA frame, 125 to 400 amp			
0435	Feeder sect, ckt brkr, 3 pole, LA frame, 125-400 amp, 480 volt	EA	1,698.03	57.98
16331 0499	Branch circuit, fusible switch			
Note: Includes Switch, Fuses, And Portion Of Distribution Section Occupied By That Branch Device				
0500	Feeder sect, branch ckt, fusible switch, 600V, dbl 30/30 A	EA	605.42	46.56
0550	Feeder sect, branch ckt, fusible switch, 600V, dbl 60/60 A	EA	623.15	61.10
0600	Feeder sect, branch ckt, dbl 100/100 A, fusible switch, 600V	EA	773.20	65.46
0650	Feeder sect, branch ckt, fusible switch, 600V, single, 30 A	EA	466.71	33.33
0750	Feeder sect, branch ckt, 100 A, fusible switch, 600V, single	EA	739.05	46.56
0800	Feeder sect, branch ckt, 200 A, fusible switch, 600V, single	EA	1,243.80	65.07
0850	Feeder sect, branch ckt, 400 A, fusible switch, 600V, single	EA	2,360.12	78.97
0900	Feeder sect, branch ckt, 600 A, fusible switch, 600V, single	EA	2,830.12	114.01
0950	Feeder sect, branch ckt, 800 A, fusible switch, 600V, single	EA	4,691.78	124.33
1000	Feeder sect, branch ckt, 1200 A, fusible switch, 600V, single	EA	5,438.19	278.61
1010	Feeder sect, branch ckt, 30/30A, fusible switch, 600V, space, db	EA	272.87	39.08
1015	Feeder sect, branch ckt, 60/60A, fusible switch, 600V, space, db	EA	279.17	39.96
1020	Feeder sect, branch ckt, 100/100A, fusible switch, 600V, space, db	EA	287.05	40.28
1025	Feeder sect, branch ckt, 100A, fusible switch, 600V, space, sgl	EA	309.37	42.20
1030	Feeder sect, branch ckt, 200A, fusible switch, 600V, space, sgl	EA	402.25	55.21
1035	Feeder sect, branch ckt, 400A, fusible switch, 600V, space, sgl	EA	621.05	106.28
1040	Feeder sect, branch ckt, 600A, fusible switch, 600V, space, sgl	EA	692.71	117.02
1045	Feeder sect, branch ckt, 800A, fusible switch, 600V, space, sgl	EA	1,096.25	156.09

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1050	Feeder sect, branch ckt, 1200A, fusible switch, 600V, space, sgl	EA	1,106.61	162.94
16331 1080	Branch circuit, circuit breakers, high interrupt			
1150	Feeder sect, branch ckt, 240,480 or 600 V, 1 P, CB, 100 A, hi intrpt	EA	263.63	28.37
1180	Feeder sect, branch ckt, 240,480 or 600 V, 3 P, CB, 100 A, hi intrpt	EA	832.01	48.23
1200	Feeder sect, brancd ckt, 240,480 or 600 V, 2 P, CB, 225 A, hi intrpt	EA	581.16	55.92
1220	Feeder sect, branch ckt, 240,480 or 600 V, 3 P, CB, 225 A, hi intrpt	EA	1,442.34	53.19
16331 1499	Switchboard, branch breaker			
1500	Feeder sect, switchboard, branch breaker, 480 V, 3p, 60 A	EA	748.12	34.66
1510	Feeder sect, switchboard, branch breaker, 480 V, 3p, 100 A	EA	829.01	45.50
1520	Feeder sect, switchboard, branch breaker, 480 V, 3p, 225 A	EA	1,457.05	70.28
1530	Feeder sect, switchboard, branch breaker, 480 V, 3p, 400 A	EA	1,988.81	77.81
1540	Feeder sect, switchboard, branch breaker, 480 V, 3p, 600 A	EA	2,904.57	107.84
1550	Feeder sect, switchboard, branch breaker, 480 V, 3p, 800 A	EA	4,144.51	122.57
1560	Feeder sect, switchboard, branch breaker, 480 V, 3p, 1000 A	EA	5,016.53	200.37
1570	Feeder sect, switchboard, branch breaker, 480 V, 3p, 1200 A	EA	6,672.33	200.37
1580	Feeder sect, switchboard, branch breaker, 480 V, 3p, 1600 A	EA	12,037.01	285.28
1590	Feeder sect, switchboard, branch breaker, 480 V, 3p, 2000 A	EA	17,474.54	427.92
16331 2000 600				
2002	14 W Distr Sec, 600A Main Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,204.35	289.45
2004	24-30 W Distr Sec, 600A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,518.99	285.46
2006	34-38 W Main Distribution, 600A M Type WRI, 600VAC, 250VDC	EA	1,689.78	363.13
2008	42-48 W Distr Sec, 600A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,804.98	366.08
16331 2020 800				
2021	14 W Distr Sec, 800A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,309.19	362.38
2022	34-38W Distr Sec, 1200A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,979.23	511.72
2023	24-30 W Distr Sec, 800A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,619.27	380.35
2024	42-48W Distr Sec, 1200A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,130.85	436.48
2026	34-38 W Main Distribution, 800A M Type WRI, 600VAC, 250VDC	EA	1,804.98	413.01
2028	42-48 W Distr Sec, 800A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,908.48	415.69
16331 2030 1200				
2032	14 W Distr Sec, 1200A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,471.45	417.76
2034	24-30W Distr Sec, 1200A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	1,785.43	411.12
16331 2100 1600 Amp Min Bus, 4 Wire				
2102	14 W Distr Sec, 1600A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,070.20	447.07
2104	24-30 W Distr Sec, 1600A Mh Bus, 4 Type WRI, 600VAC, 250VDC	EA	2,419.14	444.75
2106	34-38 W Distr Sec, 1600A Mh Bus, 4 Type WRI, 600VAC, 250VDC	EA	2,641.86	550.63
2108	42-48 W Distr Sec, 1600A Mh Bus, 4 Type WRI, 600VAC, 250VDC	EA	2,773.93	553.76
16331 2300 2000				
2302	14W Distr Sec, 2000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,119.21	446.61
2304	34-38W Distr Sec, 2000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,573.78	498.21
2306	42-48W Distr Sec, 2000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,643.76	527.88
2308	24-30W Distr Sec, 2000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	2,479.89	500.17
16331 2400 3000 Amp Min Bus, 4 Wire				
2402	24-30W Distr Sec, 3000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,407.42	491.57
2404	34-38W Distr Sec, 3000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,501.36	490.65
2406	42-48W Distr Sec, 3000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,571.34	519.50
16331 2500 Pull Boy, Horizontal Mounted Across Top Of Switch Board				
2502	18-24"W, 30"H, Opn Bot, Pull Boy Horz Md, Top of Switchboard	EA	349.89	35.84
2504	Drilled Ebony Ashstore Bottom	EA	392.48	35.84
2506	Cable Supports in Pullboy	EA	162.14	8.77
16331 2600 Distribution				
2602	24-30W Distr Sec, 4000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,418.30	514.65
2604	34-38W Distr Sec, 4000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,535.05	514.11
2606	42-48W Distr Sec, 4000A Mh Bus, 4W Type WRI, 600VAC, 250VDC	EA	3,560.31	514.64
16332 0010 Switchboard instruments				
2000	Switchboard instruments, 3 phase, 4 wire, AC voltmeter	EA	1,086.44	
2010	Switchboard instruments, 3 phase, 4 wire, AC ammeter	EA	1,086.44	
2020	Switchboard instruments, 3 phase, 4 wire, AC wattmeter	EA	2,527.27	
2030	Switchboard instruments, 3 phase, 4 wire, varioneter	EA	3,021.11	
2040	Switchboard instruments, power factor meter, 3 phase, 4 wire	EA	2,614.42	
2050	Switchboard instruments, 3 phase, 4 wire, frequency meter	EA	2,904.91	
2060	Swbrd instr, AC wathour meter ind 1/ 2 element w/test	EA	2,527.27	
2070	Swbrd instr, AC wathour meter rodg 2 elem w/recording kw	EA	286.19	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2080	Swbrd instr, modify meter, 3 ph, 4 wire, weatherproof	EA	2,495.18	
2090	Swbrd instr, control sw resistor type 130V, 3 ph, 4 wire	EA	49.29	
2100	Swbrd instr, amp & watt hr, 3 ph, 4 W, metering instr volt	EA	133.86	
16333 Switches				
16333 0010 Contactors, AC				
Note: 600 Volt Class. Ampere Ratings At 120 V, 240 V Or 480 V				
16333 0020 Lighting				
16333 0020 600 volt 2 pole, electrically held				
0025	Contact, lighting, 30 amp, 600 volt 2 pole, electrically held	EA	256.83	39.86
0030	Contact, lighting, 60 amp, 600 volt 2 pole, electrically held	EA	469.41	47.27
0035	Contact, lighting, 100 amp, 600 volt 2 pole, electrically	EA	730.60	56.88
0040	Contact, lighting, 200 amp, 600 volt 2 pole, electrically	EA	1,659.90	88.97
16333 0050 600 volt 3 pole, electrically held				
0100	Contact, lighting, 20 amp, 600 volt 3 pole, electrically held	EA	262.64	34.04
0200	Contact, lighting, 30 amp, 600 volt 3 pole, electrically held	EA	280.98	43.79
0300	Contact, lighting, 60 amp, 600 volt 3 pole, electrically held	EA	501.25	55.92
0400	Contact, lighting, 100 amp, 600 volt 3 pole, electrically	EA	781.60	64.54
0500	Contact, lighting, 200 amp, 600 volt 3 pole, electrically	EA	1,777.09	107.09
16333 0610 600 volt 4 pole, electrically held				
0620	Contact, lighting, 30 amp, 600 volt 4 pole, electrically held	EA	341.59	47.83
0630	Contact, lighting, 60 amp, 600 volt 4 pole, electrically held	EA	649.26	67.87
0640	Contact, lighting, 100 amp, 600 volt 4 pole, electrically	EA	1,023.66	77.41
0650	Contact, lighting, 200 amp, 600 volt 4 pole, electrically	EA	2,489.86	118.58
16333 0700 600 volt 2 pole, mechanically held				
0710	Contact, lighting, 30 amp, 600 volt 2 pole, mechanically held	EA	367.22	44.22
0720	Contact, lighting, 60 amp, 600 volt 2 pole, mechanically held	EA	685.53	55.03
0730	Contact, lighting, 100 amp, 600 volt 2 pole, mechanically	EA	945.56	63.37
0740	Contact, lighting, 200 amp, 600 volt 2 pole, mechanically	EA	2,275.75	101.17
16333 0799 600 volt 3 pole, mechanically held				
0800	Contact, lighting, 30 amp, 600 volt 3 pole, mechanically held	EA	392.53	45.21
0900	Contact, lighting, 60 amp, 600 volt 3 pole, mechanically held	EA	722.02	54.96
1100	Contact, lighting, 100 amp, 600 volt 3 pole, mechanically	EA	996.56	72.90
1300	Contact, lighting, 200 amp, 600 volt 3 pole, mechanically	EA	2,642.76	113.33
16333 1350 600 volt 4 pole, mechanically held				
1360	Contact, lighting, 30 amp, 600 volt 4 pole, mechanically held	EA	417.12	53.65
1370	Contact, lighting, 60 amp, 600 volt 4 pole, mechanically held	EA	840.99	71.91
1380	Contact, lighting, 100 amp, 600 volt 4 pole, mechanically	EA	1,186.34	82.73
1390	Contact, lighting, 200 amp, 600 volt 4 pole, mechanically	EA	3,123.13	131.56
16333 1399 Photo-cell, light arrester, receptacle And Bracket				
1400	Contact, photo-cell, 105-130 volt relay, light arrester,	EA	54.95	7.27
1410	Contact, photo-cell, 105-285 volt relay, light arrester,	EA	41.53	4.85
16336 0010 Relays				
0800	Relay, enclosed (NEMA 1), 20 amp, single pole double throw,	EA	394.17	35.18
0850	Relay, enclosed (NEMA 1), 20 amp, single pole double throw,	EA	394.17	35.18
16337 0010 Safety switches				
16337 0899 General duty 240 volt				
0900	Safety switch, general duty 240 V, non fused, 60 A, 2 pole NEMA	EA	258.71	74.82
16337 1100 Heavy duty				
16337 1109 600 volt, 3 pole nonfused				
1110	Safety switch, heavy duty, 600 V, 3 pole non fused, 30 A	EA	167.71	61.77
1500	Safety switch, heavy duty, 600 V, 3 pole non fused, 60 A	EA	266.82	60.71
1700	Safety switch, heavy duty, 600 V, 3 pole non fused, 100 A	EA	375.27	109.82
1900	Safety switch, heavy duty, 600 V, 3 pole non fused, 200 A	EA	561.30	95.46
2100	Safety switch, heavy duty, 600 V, 3 pole non fused, 400 A	EA	1,083.35	213.58
2300	Safety switch, heavy duty, 600 V, 3 pole non fused, 600 A	EA	1,841.71	211.34
16337 5700 600 volt, 3 pole NEMA 3R nonfused				
5710	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 30 A,	EA	234.01	65.57
5900	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 60 A,	EA	378.33	67.23
16337 6100 Safety Switches, 240 V Class, 3 Pole, NEMA 1 Enc				
6100	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 100 A,	EA	506.05	125.74

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6101	100A Safety Switch, 240V, 3 Pole	EA	799.82	
6102	200A Safety Switch, 240V, 3 Pole	EA	1,189.76	
6103	400A Safety Switch, 240V, 3 Pole	EA	2,936.50	
6104	600A Safety Switch, 240V, 3 Pole	EA	4,066.67	
6300	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 200 A,	EA	660.01	120.32
6500	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 400 A,	EA	1,406.29	260.45
6700	Safety switch, heavy duty, 3 pole NEMA 3R non fused, 600 A,	EA	2,672.21	322.86
16337 7659 600 volt, 3 pole NEMA 7 & 9, fused				
7660	Safety switch, heavy duty, fused, 30-60 A, 600 V, 3 pole	EA	1,624.59	110.37
7670	Safety switch, heavy duty, fused, 100 A, 600 V, 3 pole NEMA	EA	2,406.30	134.94
7680	Safety switch, heavy duty, fused, 200 A, 600 V, 3 pole NEMA	EA	5,305.24	218.10
16338 0010 Safety switches, with fuses				
16338 2909 Heavy duty				
16338 2909 240 volt, 3 pole NEMA 1				
2910	Safety switch, hvy dty, 30 amp, w/ fuse, 240 volt, 3 pole NEMA 1	EA	214.54	78.94
3000	Safety switch, hvy dty, 60 amp, w/ fuse, 240 volt, 3 pole NEMA 1	EA	329.10	78.76
3300	Safety switch, hvy dty, 100 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	504.41	127.37
3500	Safety switch, hvy dty, 200 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	794.58	156.84
3700	Safety switch, hvy dty, 400 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	1,697.13	222.05
3900	Safety switch, hvy dty, 600 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	2,811.74	390.45
16338 4339 240 volt, 2 pole NEMA 1				
4340	Safety switch, hvy dty, 30 amp, w/ fuse, 240 volt, 2 pole NEMA 1	EA	170.84	68.37
4341	Safety switch, hvy dty, 60 amp, w/ fuse, 240 volt, 2 pole NEMA 1	EA	281.22	68.05
4342	Safety switch, hvy dty, 100 amp, w/ fuse, 240 volt, 2 pole NEMA	EA	397.55	69.68
4343	Safety switch, hvy dty, 200 amp, w/ fuse, 240 volt, 2 pole NEMA	EA	655.58	158.50
4344	Safety switch, hvy dty, 400 amp, w/ fuse, 240 volt, 2 pole NEMA	EA	1,318.00	155.07
16338 4349 600 volt, 3 pole NEMA 1				
4350	Safety switch, hvy dty, 30 amp, w/ fuse, 600 volt, 3 pole NEMA 1	EA	303.41	78.09
4380	Safety switch, hvy dty, 60 amp, w/ fuse, 600 volt, 3 pole NEMA 1	EA	388.29	78.76
4400	Safety switch, hvy dty, 100 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	634.42	123.76
4420	Safety switch, hvy dty, 200 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	974.30	151.13
4440	Safety switch, hvy dty, 400 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	2,102.57	260.45
4450	Safety switch, hvy dty, 600 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	3,409.97	386.13
16338 4509 240 volt, 3 pole NEMA 3R				
4510	Safety switch, hvy dty, 30 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	295.85	75.35
4700	Safety switch, hvy dty, 60 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	447.75	104.54
4900	Safety switch, hvy dty, 100 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	625.73	130.42
5100	Safety switch, hvy dty, 200 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	908.86	167.73
5300	Safety switch, hvy dty, 400 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	1,900.88	245.70
5500	Safety switch, hvy dty, 600 amp, w/ fuse, 240 volt, 3 pole NEMA	EA	3,570.55	393.22
16338 5509 600 volt, 3 pole NEMA 3R				
5510	Safety switch, hvy dty, 30 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	420.48	78.29
5520	Safety switch, hvy dty, 60 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	522.87	105.99
5530	Safety switch, hvy dty, 100 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	794.25	137.23
5540	Safety switch, hvy dty, 200 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	1,155.84	180.45
5550	Safety switch, hvy dty, 400 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	2,451.36	260.81
5560	Safety switch, hvy dty, 600 amp, w/ fuse, 600 volt, 3 pole NEMA	EA	4,496.91	446.19
16338 5600 Safety Switch, 1 Phase, 2 Pole Nema 3R Enclosure				
5610	240V Fused HD Disc Sw, 30A, 2P NEMA 3R	EA	179.11	59.48
5620	240V Fused HD Disc Sw, 60A, 2P NEMA 3R	EA	279.03	65.36
5630	240V Fused HD Disc Sw, 100A, 2P NEMA 3R	EA	347.76	79.52
5640	240V Fused HD Disc Sw, 200A, 2P NEMA 3R	EA	510.02	126.59
5650	240V Fused HD Disc Sw, 400A, 2P	EA	1,111.31	196.81
16338 5700 NEMA 4X Disconnect Switch (Non-Metalic)				
5710	30A, 600V-3Ph Unfused Disconnect Switch	EA	166.77	
5720	60A, 600V-3Ph Unfused Disconnect Switch	EA	190.03	
5730	100A, 600V-3Ph Unfused Disconnect Switch	EA	238.55	
5740	30A, 600V-3Ph Fused Disconnect S witch	EA	204.66	
5750	60A, 600V-3Ph Fused Disconnect S witch	EA	239.55	
16338 5800 Remove & Relocate Disconnect Switch 240V-600V				
5810	30A, 600V 3Ph Fused/Unfused Remove and Relocate	EA	56.63	
5820	60A, 600V 3Ph Fused/Unfused Remove and Relocate	EA	56.63	
5830	100A, 600V 3Ph Fused/Unfused Remove and Relocate	EA	76.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5840	200A, 600V 3Ph And Above Fused R emove and Relocate	EA	153.27	
16339 0010	Time switches			
0100	Time switch, single pole, single throw, 24 hour dial	EA	152.84	46.03
0500	Time switch, single pole, single throw, 7 day calendar dial	EA	196.35	57.59
16340	Fuses See "Controls And Instrumentation"			
16340 1000	Fuses			
16340 1100	Dual Element Plug Fuse			
1101	1 Amp Plug Fuse	EA	9.84	2.03
1102	2 Amp Plug Fuse	EA	9.84	2.03
1103	3 Amp Plug Fuse	EA	9.84	2.03
1104	5 Amp Plug Fuse	EA	8.82	2.03
1105	6 Amp Plug Fuse	EA	9.99	2.03
1106	8 Amp Plug Fuse	EA	8.82	2.03
1107	10 Amp Plug Fuse	EA	8.82	2.03
1108	15 Amp Plug Fuse	EA	7.10	2.03
1109	20 Amp Plug Fuse	EA	7.10	2.03
1111	25 Amp Plug Fuse	EA	7.26	2.03
1112	30 Amp Plug Fuse	EA	7.10	2.03
16340 1200	Time Delay, Current Limiting, Type RKL, 250 Volt			
16340 1210	250 Volt, Ferrule Type			
1211	1 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1212	2 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1213	3 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1214	4 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1215	5 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1216	10 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1217	15 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1218	20 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1219	25 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1221	30 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	11.06	2.03
1222	35 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	16.75	2.03
1223	40 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	16.75	2.03
1224	45 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	16.75	2.03
1225	50 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	16.75	2.03
1226	60 AMP, 250 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	16.75	2.03
16340 1250	250 Volt, Blade Type			
1251	70 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	32.95	2.53
1252	80 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	32.95	2.53
1253	90 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	32.95	2.53
1254	100 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	32.95	2.53
1255	110 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	60.66	2.53
1256	125 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	60.66	2.53
1257	150 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	61.38	2.78
1258	200 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	61.38	2.78
1259	250 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	114.69	2.78
1261	300 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	116.47	3.42
1262	350 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	116.47	3.42
1263	400 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	116.47	3.42
1264	450 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	140.75	3.42
1265	500 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	142.89	4.21
1266	600 AMP, 250 Volt, Current Limiting Fuse RK1, Blade Type	EA	142.89	4.21
16340 1300	Time Delay, Current Limiting, Type RKL, 600 Volt			
16340 1310	600 Volt, Ferrule Type			
1311	1 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1312	2 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1313	3 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1314	4 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1315	5 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1316	10 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1317	15 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1318	20 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1319	25 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03
1321	30 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	12.79	2.03

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1322	35 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	19.57	2.03
1323	40 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	19.57	2.03
1324	45 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	19.57	2.03
1325	50 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	19.57	2.03
1326	60 Amp, 600 Volt, Current Limiting Fuse RK1, Ferrule Type	EA	19.57	2.03
16340 1330 600 Volt, Blade Type				
1331	70 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	42.97	2.53
1332	80 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	43.69	2.78
1333	90 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	43.69	2.78
1334	100 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	42.91	2.78
1335	110 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	71.60	2.78
1336	125 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	71.60	2.78
1337	150 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	69.14	3.42
1338	200 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	69.14	3.42
1339	250 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	140.75	3.42
1341	300 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	130.40	4.21
1342	350 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	142.89	4.21
1343	400 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	130.40	4.21
1344	450 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	174.14	4.21
1345	500 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	176.63	5.06
1346	600 Amp, 600 Volt, Current Limiting Fuse RK1, Blade Type	EA	175.72	5.06

16350 Motors

16352 2750 Mtor Connections

2751	flexible cnd and ftngs, 115 vol t, 1 ph, up to 1 HP mot	EA	9.43	
2752	flexible cnd and fittings, 115 volt, 2 HP motor	EA	10.57	
2753	flexible cnd and fittings, 115 volt, 3 HP motor	EA	14.70	
2754	flexible cnd and ftngs, 230 vol t, 10 HP motor, 3 phase	EA	17.39	
2755	flexible cnd and fittings, 230 volt, 15 HP motor	EA	28.63	
2756	flexible cnd and fittings, 230 volt, 25 HP motor	EA	33.46	
2757	flexible cnd and fittings, 230 volt, 50 HP motor	EA	68.99	
2758	flexible cnd and fittings, 230 volt, 100 HP motor	EA	156.10	
2759	flexible cnd and fittings, 460 volt, 5 HP motor, 3 phase	EA	9.97	
2760	flexible cnd and fittings, 460 volt, 10 HP motor	EA	9.97	
2761	flexible cnd and fittings, 460 volt, 25 HP motor	EA	16.14	
2762	flexible cnd and fittings, 460 volt, 30 HP motor	EA	16.14	
2763	flexible cnd and fittings, 460 volt, 40 HP motor	EA	23.47	
2764	flexible cnd and fittings, 460 volt, 50 HP motor	EA	26.26	
2765	flexible cnd and fittings, 460 volt, 60 HP motor	EA	34.89	
2766	flexible cnd and fittings, 460 volt, 75 HP motor	EA	42.67	
2767	flexible cnd and fittings, 460 volt, 100 HP motor	EA	58.33	
2768	flexible cnd and fittings, 460 volt, 125 HP motor	EA	75.25	
2769	flexible cnd and fittings, 460 volt, 150 HP motor	EA	79.54	
2770	flexible cnd and fittings, 460 volt, 200 HP motor	EA	127.64	
2771	flexible cnd & ftngs, 460 V, 5 HP mot, 3 ph, Wsealtite	EA	14.71	
2772	flexible cnd and fittings, 460 volt, 10 HP motor	EA	14.71	
2773	flexible cnd and fittings, 460 volt, 25 HP motor	EA	24.50	
2774	flexible cnd and fittings, 460 volt, 30 HP motor	EA	24.50	
2775	flexible cnd and fittings, 460 volt, 40 HP motor	EA	41.37	
2776	flexible cnd and fittings, 460 volt, 50 HP motor	EA	40.21	
2777	flexible cnd and fittings, 460 volt, 60 HP motor	EA	57.55	
2778	flexible cnd and fittings, 460 volt, 75 HP motor	EA	61.84	
2779	flexible cnd and fittings, 460 volt, 100 HP motor	EA	82.74	
2780	flexible cnd and fittings, 460 volt, 150 HP motor	EA	92.32	
2781	flexible cnd and fittings, 460 volt, 200 HP motor	EA	476.81	

16353 0010 Mtors w/ equipment, connections & terminations Rotation Testing

Note: If Equipment Rating Is Other Than Horsepower (Kw, Cfm, Tons, Btu/Hr, Etc) Convert Units To Horsepower And Select Proper Circuit Characteristics. Note: Includes Handling And Setting Mtor On Munting Base. Munting Of Base By Others.

16353 0020 Dripproof, 1800 RPM 230 volt, 1 phase

0030	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 1/4 HP	EA	240.07	70.17
0040	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 1/2 HP	EA	269.12	70.28
0050	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 3/4 HP	EA	360.92	70.28
0060	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 1 HP	EA	383.05	77.69
0070	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 1-1/2 HP	EA	419.07	77.69

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0080	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 2 HP	EA	499.24	77.69
0100	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 3 HP	EA	597.21	77.69
0110	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 5 HP	EA	764.12	77.69
0120	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 7-1/2 HP	EA	1,007.88	107.59
0130	Mtor, dripproof, 1800 RPM 230 volt, 1 phase, 10 HP	EA	1,376.83	110.46
16353 1010	Dripproof, 1800 RPM 230 volt, 3 phase			
1020	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 1/2 HP	EA	274.52	65.60
1030	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 3/4 HP	EA	293.11	65.60
1040	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 1 HP	EA	312.74	72.41
1050	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 1-1/2 HP	EA	333.65	72.41
1060	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 2 HP	EA	362.70	72.41
1070	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 3 HP	EA	380.13	72.41
1080	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 5 HP	EA	414.99	72.41
1090	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 7-1/2 HP	EA	581.73	99.97
1100	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 10 HP	EA	689.65	102.34
1110	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 15 HP	EA	891.28	127.27
1120	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 20 HP	EA	1,135.58	144.85
1130	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 25 HP	EA	1,334.19	161.38
1140	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 30 HP	EA	1,600.60	190.74
1150	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 40 HP	EA	1,981.36	209.92
1160	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 50 HP	EA	2,336.18	226.98
1170	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 60 HP	EA	2,858.16	262.40
1180	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 75 HP	EA	3,921.29	310.95
1190	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 100 HP	EA	4,923.94	371.30
1200	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 125 HP	EA	6,177.44	442.15
1210	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 150 HP	EA	7,328.64	524.81
1220	Mtor, dripproof, 1800 RPM 230 volt, 3 phase, 200 HP	EA	9,593.27	737.11
16353 2010	Dripproof, 1800 RPM 460 volt, 3 phase			
2020	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 1/2 HP	EA	274.52	65.60
2030	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 3/4 HP	EA	293.11	65.60
2040	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 1 HP	EA	312.74	72.41
2050	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 1-1/2 HP	EA	333.65	72.41
2060	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 2 HP	EA	362.70	72.41
2070	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 3 HP	EA	380.13	72.41
2080	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 5 HP	EA	414.99	72.41
2090	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 7-1/2 HP	EA	549.31	76.35
2100	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 10 HP	EA	645.56	78.72
2110	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 15 HP	EA	813.99	91.31
2120	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 20 HP	EA	1,035.81	110.46
2130	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 25 HP	EA	1,220.14	116.52
2140	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 30 HP	EA	1,438.44	119.92
2150	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 40 HP	EA	1,838.75	144.85
2160	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 50 HP	EA	2,206.42	175.03
2170	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 60 HP	EA	2,717.91	199.78
2180	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 75 HP	EA	3,325.78	233.29
2190	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 100 HP	EA	4,376.63	318.04
2200	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 125 HP	EA	5,290.81	399.92
2210	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 150 HP	EA	6,837.76	466.55
2220	Mtor, dripproof, 1800 RPM 460 volt, 3 phase, 200 HP	EA	8,758.12	559.45
16353 3010	Mtor mounting only, dripproof, 1800 RPM 460 V Three Phase, 1800 Rpm			
3020	Mtor mounting only, 3 phase, 1/2 HP, dripproof, 1800 RPM 460	EA	56.74	28.87
3030	Mtor mounting only, 3 phase, 3/4 HP, dripproof, 1800 RPM 460	EA	63.04	34.79
3040	Mtor mounting only, 3 phase, 1 HP, dripproof, 1800 RPM 460	EA	68.77	35.50
3050	Mtor mounting only, 3 phase, 1-1/2 HP, dripproof, 1800 RPM	EA	73.68	35.39
3060	Mtor mounting only, 3 phase, 2 HP, dripproof, 1800 RPM 460	EA	81.05	43.19
3070	Mtor mounting only, 3 phase, 3 HP, dripproof, 1800 RPM 460	EA	94.56	43.58
3080	Mtor mounting only, 3 phase, 5 HP, dripproof, 1800 RPM 460	EA	107.05	69.36
3090	Mtor mounting only, 3 phase, 7-1/2 HP, dripproof, 1800 RPM	EA	141.84	71.49
3100	Mtor mounting only, 3 phase, 10 HP, dripproof, 1800 RPM 460	EA	189.12	127.09
3110	Mtor mounting only, 3 phase, 15 HP, dripproof, 1800 RPM 460	EA	226.94	123.90
3120	Mtor mounting only, 3 phase, 20 HP, dripproof, 1800 RPM 460	EA	270.17	178.33
3130	Mtor mounting only, 3 phase, 25 HP, dripproof, 1800 RPM 460	EA	298.61	173.79
3140	Mtor mounting only, 3 phase, 30 HP, dripproof, 1800 RPM 460	EA	378.24	181.55
3150	Mtor mounting only, 3 phase, 40 HP, dripproof, 1800 RPM 460	EA	420.14	268.47
3160	Mtor mounting only, 3 phase, 50 HP, dripproof, 1800 RPM 460	EA	453.74	261.34

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3180	MOTOR mounting only, 3 phase, 75 HP, dripproof, 1800 RPM 460	EA	567.36	396.94
3190	MOTOR mounting only, 3 phase, 100 HP, dripproof, 1800 RPM 460	EA	667.17	387.51
3200	MOTOR mounting only, 3 phase, 125 HP, dripproof, 1800 RPM 460	EA	810.51	525.20
3210	MOTOR mounting only, 3 phase, 150 HP, dripproof, 1800 RPM 460	EA	945.60	527.64
3220	MOTOR mounting only, 3 phase, 200 HP, dripproof, 1800 RPM 460	EA	1,134.72	661.75

16400 Transformers & Bus Ducts

16410 General Purpose "Dry Type" Transformers.

Note: - 60 Hz Type - Ep And Ept 115 C Rise, 185 C Insulation, Type Dt-3 And Ds-3 150 C Rise, 220 C Insul. Indoor Use. Wall Mounted Up to 10 Kva, Floor Mounted For 15 Kva And Larger. Dt-3 And Ds-3 Use Weathershields For Outdoor Placement. UL Listed.

16412 0010 Dry type transformer

16412 0050 Single phase

16412 0050 240/480 volt primary, 120/240 volt

0500	Dry type xfmr, sgl ph, 3 KVA, 240/480 volt pri, 120/240 volt	EA	473.14	138.54
0700	Dry type xfmr, sgl ph, 5 KVA, 240/480 volt pri, 120/240 volt	EA	609.16	136.77
0900	Dry type xfmr, sgl ph, 7.5 KVA, 240/480 volt pri, 120/240 volt	EA	775.20	132.94
1100	Dry type xfmr, sgl ph, 10 KVA, 240/480 volt pri, 120/240 volt	EA	1,017.38	230.24
1300	Dry type xfmr, sgl ph, 15 KVA, 240/480 volt pri, 120/240 volt	EA	1,375.88	176.38
1500	Dry type xfmr, sgl ph, 25 KVA, 240/480 volt pri, 120/240 volt	EA	1,682.85	191.59

16412 2127 480V primary 120/240V secondary

2128	Dry type xfmr, sgl ph, 480 volt pri 120/240V sec, 1 KVA	EA	288.41	82.27
2130	Dry type xfmr, sgl ph, 3 KVA, 480 volt pri, 120/240 volt sec	EA	439.67	103.65
2132	Dry type xfmr, sgl ph, 5 KVA, 480 volt pri, 120/240 volt sec	EA	558.26	96.66
2134	Dry type xfmr, sgl ph, 7.5 KVA, 480 volt pri, 120/240 volt sec	EA	709.89	97.20
2136	Dry type xfmr, sgl ph, 10 KVA, 480 volt pri, 120/240 volt sec	EA	914.67	138.97
2138	Dry type xfmr, sgl ph, 15 KVA, 480 volt pri, 120/240 volt sec	EA	1,224.59	156.63
2140	Dry type xfmr, sgl ph, 25 KVA, 480 volt pri, 120/240 volt sec	EA	1,545.73	175.70
2142	Dry type xfmr, sgl ph, 37.5 KVA, 480 volt pri, 120/240 volt sec	EA	2,012.92	359.28
2144	Dry type xfmr, sgl ph, 50 KVA, 480 volt pri, 120/240 volt sec	EA	2,395.43	354.63
2146	Dry type xfmr, sgl ph, 75 KVA, 480 volt pri, 120/240 volt sec	EA	3,023.03	349.32
2148	Dry type xfmr, sgl ph, 100 KVA, 480 volt pri, 120/240 volt sec	EA	3,728.09	575.25
2150	Dry type xfmr, sgl ph, 167 KVA, 480 volt pri, 120/240 volt sec	EA	5,150.39	509.38
2152	Dry type xfmr, sgl ph, 250 KVA, 480 volt pri, 120/240 volt sec	EA	7,658.39	426.26
2154	333KVA, 480V-120/240V Xformer, Dry 1Ph, 60Hz, General Purpose, Dry	EA	8,731.55	425.99
2160	Dry type xfmr, up to 100 KVA, 3ph mtg brackets (set of 2)	EA	384.69	56.74

16412 2200 Single Phase - Weathershields Use With Type Dt- 3 And Ds-3 Only (Set Of 2)

2202	37.5KVA3 Phase - Weathershields	EA	24.86	
2204	50KVA3 Phase - Weathershields	EA	31.68	
2206	75KVA3 Phase - Weathershields	EA	37.78	
2208	100KVA3 Phase - Weathershields	EA	45.07	
2210	167KVA3 Phase - Weathershields	EA	60.98	
2212	250KVA3 Phase - Weathershields	EA	72.91	
2214	333KVA3 Phase - Weathershields	EA	89.49	

16412 2250 Package power supply

2252	PPS, 480V-120/240V, 5KVA xfmr w/ 6-1 pole/3-2 pole max 20 A brkr	EA	962.57	
2254	PPS, 480V-120/240V, 7.5KVA xfmr w/ 8-1 pole/4-2 pole, max 30 A	EA	1,161.75	
2256	PPS, 480V-120/240V, 10KVA xfmr w/ 10-1 pole/5-2 pole max 40 A	EA	1,465.95	
2258	PPS, 480V-120/240V, 15KVA xfmr w/ 16-1 pole/8-2 pole max 60 A	EA	1,895.02	
2260	PPS, 480V-120/240V, 25KVA xfmr w/ 24-1 pole/12-2 pole max 100 A	EA	2,620.21	
2262	PPS, 480V-208/120V, 15KVA xfmr w/ 12-1 pole/4-3 pole max 40 A	EA	2,656.11	
2264	PPS, 480V-208/120V, 22.5KVA xfmr w/18-1 pole/6-3 pole max 60 A	EA	3,188.62	
2266	PPS, 480V-208/120V, 30KVA xfmr w/ 24-1 pole/8-3 pole max 80 A	EA	3,850.50	

16412 2270 Isolation Transformer, Single Phase, Computer Grade, 240V - 120/240V.

2272	.5Kva, 1Ph, 240 V - 120/240 V	EA	413.16	92.23
2274	1Kva, 1Ph, 240 V - 120/240 V	EA	561.03	92.23
2276	2.5Kva, 1Ph, 240 V - 120/240 V	EA	643.61	107.26
2278	5Kva, 1Ph, 240 V - 120/240 V	EA	722.98	113.78
2280	7.5Kva, 1Ph, 240 V - 120/240 V	EA	842.78	127.72
2282	10Kva, 1Ph, 240 V - 120/240 V	EA	1,097.94	159.07
2284	15Kva, 1Ph, 240 V - 120/240 V	EA	1,411.07	162.69

16412 2290 Packaged Power Supply (2-5 Pct Fcbr Taps)

2292	480V-208/120V, 15 KVA Xfmr w/ 12-1 Pole/4-3 Pole Max 40A Brkr	EA	2,517.90	345.83
2294	480V-208/120V, 22.5 KVA Xfmr w/ 18-1 Pole/6-3 Pole Max 60A Brkr	EA	2,999.60	343.83

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2296	480V-208/120V, 30 KVA Xfrmr w/ 24-1 Pole/8-3 Pole Max 80A Brkr	EA	3,554.42	342.02
16412 2300	3 phase			
Note: 60 Hz Type Ep And Ept 115 C Rise, 185 C Insulation, Type Dt-3 And Ds-3 150 C Rise, 220 C Insul. Indoor Use. Wall Mounted For Up To 10Kva, Floor Mounted For 15Kva And Larger. Dt-3 And Ds-3 Use Weathershields For Outdoor Placement. UL Listed.				
16412 2300	480 volt primary 120/208 volt secondary			
2310	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 3 KVA	EA	752.18	93.61
2700	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 6 KVA	EA	998.79	116.42
2900	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 9 KVA	EA	1,137.30	119.54
3100	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 15 KVA	EA	1,467.43	114.25
3300	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 30 KVA	EA	1,770.98	195.56
3400	Dry type xfnr, 3 ph, 37.5 KVA, 480 V pri 120/208 V sec, vent	EA	2,020.86	162.27
3500	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 45 KVA	EA	2,080.38	185.85
3600	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 50 KVA	EA	2,413.27	166.80
3700	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 75 KVA	EA	2,874.16	347.47
3900	Dry type xfnr, 3 ph, 112.5 KVA, 480 V pri 120/208 V sec, vent	EA	3,691.72	366.62
4100	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 150 KVA	EA	4,580.87	477.75
4300	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 225 KVA	EA	6,167.76	481.07
4500	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 300 KVA	EA	7,682.23	705.45
4700	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 500 KVA	EA	12,045.77	1,240.49
4800	Dry type xfnr, 3 ph, 480 V pri 120/208 V sec, vent, 750 KVA	EA	20,242.25	1,614.50
4820	Dry type xfnr, 3 ph, 1000 KVA, 480 V pri 120/208 V sec, vent	EA	23,053.98	1,754.31
16412 5299	480 volt primary, 480y/277 volt secondary			
5300	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 30 KVA	EA	1,977.12	122.44
5302	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 45 KVA	EA	2,324.33	128.90
5304	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 75 KVA	EA	3,242.50	230.42
5306	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 112.5 KVA	EA	4,206.82	243.50
5308	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 150 KVA	EA	5,217.28	340.88
5310	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 225 KVA	EA	7,003.33	360.86
5312	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 300 KVA	EA	8,935.52	546.86
5314	Dry type xfnr, 3 ph, 480 V pri 480y/277 V sec, 500 KVA	EA	13,625.57	848.68
5320	Dry type xfnr, up to 112.5 KVA, 3ph mtg brackets (set of 2)	EA	384.69	71.59
16412 7100	3 Phase - Weathershields Use With Type Dt-3 And Ds-3 Only (Set Of 2)			
7102	45-112.5 KVA, 3 Ph Weathershields w/DT-3, DS-3 Xfrmr, Only	EA	336.67	
7104	150-300 KVA, 3 Ph Weathershields w/DT-3, DS-3 Xfrmr, Only	EA	571.72	
7106	500-1000 KVA, 3 Ph Weathershields w/DT-3, DS-3 Xfrmr, Only	EA	571.72	
7108	75 KVA, 208y/120V, xfnr, 3Ph	EA	2,610.89	
7110	100 KVA, 208y/120V, xfnr, 3Ph	EA	3,298.72	
16413 2900	K20Dry Type Transformers			
16413 2950	K20Dry Type Transformers, 3PH, 60 HZ, 115 C Rise			
2951	15KVA, 480V-208Y/120 XFMR, 3PH, 60 HZ, K20	EA	1,738.99	
2952	30KVA, 480V-208Y/120 XFMR, 3PH, 60 HZ, K20	EA	2,675.55	
2953	45KVA, 480V-208Y/120 XFMR, 3PH, 60HZ, K20	EA	3,912.90	
2954	75KVA, 480V-208Y/120 XFMR, 3PH, 60HZ, K20	EA	4,981.05	
2955	112.5 KVA 480V-208Y/120 XFMR, 3PH 60HZ, K20	EA	7,425.66	
2956	150 KVA 480V-208Y/120 XFMR, 3PH 6 OHZ, K20	EA	9,001.91	
2957	225 KVA 480V-208Y/120 XFMR, 3PH 6 OHZ, K20	EA	10,482.56	
2958	300 KVA 480V-208Y/120 XFMR, 3PH 6 OHZ, K20	EA	16,702.10	
16413 2960	K20Dry Type Transformers, 3PH, 60 HZ, 80 C Rise 2			
2961	15KVA, 480V-208Y/120 XFMR, 3 PH 60HZ, K20	EA	2,025.70	
2962	30KVA, 480V-208Y/120 XFMR, 3 PH 60HZ, K20	EA	3,128.26	
2963	45KVA, 480V-208Y/120 XFMR, 3 PH 60HZ, K20	EA	4,601.55	
2964	75KVA, 480V-208Y/120 XFMR, 3 PH 60HZ, K20	EA	5,872.71	
2965	112.5 KVA 480V-208Y/120 XFMR 3PH, 60HZ, K20	EA	8,802.96	
2966	150 KVA 480V-208Y/120 XFMR 3PH 6 OHZ, K20	EA	10,693.34	
2967	225 KVA 480V-208Y/120 XFMR 3PH 6 OHZ, K20	EA	12,434.65	
2968	300 KVA 480V-208Y/120 XFMR 3PH 6 OHZ, K20	EA	19,872.34	
16416 0010	Oil filled transformer			
16416 1000	Distribution type, 1 phase, residential Transformers			
Note: Designed For Residential And Multi-Family Buildings. UL Listed.				
16416 1010	4160y/2400 V - 24940y/14.4 KV primary			
1020	Oil dist xfnr, 1ph, 240/120V sec, 25KVA, 4160y/2400V-24940y/14.4K	EA	1,606.88	125.81
1030	Oil dist xfnr, 1ph, 240/120V sec, 37.5KVA,	EA	1,811.78	129.36

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1040	Oil dist xfmr, 1ph, 240/120V sec, 50KVA, 4160y/2400V-24940y/14.4K	EA	2,007.97	164.48
1050	Oil dist xfmr, 1ph, 240/120V sec, 75KVA, 4160y/2400V-24940y/14.4K	EA	2,450.46	162.58
1060	Oil dist xfmr, 1ph, 240/120V sec, 100KVA,	EA	2,802.50	215.01
1070	Oil dist xfmr, 1ph, 240/120V sec, 167KVA,	EA	3,469.67	204.65
1080	Oil dist xfmr, 1ph, 4160y/2400V-24940y/14.4KV pri,	EA	773.48	
1090	Oil dist xfmr, 1ph, lbrk oil sw, 2 posn,	EA	320.70	
16416 1100 Factory Modifications Material Cost Only				
1102	Loadbreak Current Limiting Fuse Factory Modifications	EA	383.27	
1104	Loadbreak Oil Switch, 2 Position Factory Modifications	EA	402.72	
1106	Loadbreak Inserts, Fcty Mbd	EA	442.99	
16416 1200 Primary - 4800 Grd Y/2400 To 24940 Grd Y/14400. Secondary - 240/120, 480/240, 277				
1202	25 KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	1,930.35	147.55
1204	37.5KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	2,124.09	176.08
1206	50 KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	2,534.20	222.40
1208	75 KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	3,117.13	237.25
1210	100KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	3,541.03	267.94
1212	167KVA, Pri 4800GrdY/2400-24940Grd Y/14400, Sec 240/120, 480/240, 277	EA	4,597.77	320.37
16416 1500 4160y/2400 V - 34500y/19.9 KV primary				
1510	Oil dist xfmr, 1ph, 240/120V sec, 25KVA, 4160y/2400V-34500y/19.9K	EA	2,362.16	147.73
1520	Oil dist xfmr, 1ph, 240/120V sec, 37.5KVA,	EA	2,672.55	147.95
1530	Oil dist xfmr, 1ph, 240/120V sec, 50KVA, 4160y/2400V-34500y/19.9K	EA	2,920.12	205.31
1540	Oil dist xfmr, 1ph, 240/120V sec, 75KVA, 4160y/2400V-34500y/19.9K	EA	3,287.08	185.70
1550	Oil dist xfmr, 1ph, 240/120V sec, 100KVA,	EA	3,804.11	251.74
1560	Oil dist xfmr, 1ph, 240/120V sec, 167KVA,	EA	4,527.05	249.21
1570	Oil dist xfmr, 1ph, 240/120V sec, 250KVA,	EA	7,999.41	382.96
1580	Oil dist xfmr, 1ph, lightning arrester,	EA	928.41	
1590	Oil dist xfmr, 1ph, 4160y/2400V-34500y/19.9KV pri,	EA	1,196.82	
1600	Oil dist xfmr, 1ph, lbrk oil sw, 2 posn,	EA	320.70	
16416 1700 Factory Modifications Material Cost Only				
1702	Loadbreak Current Limiting Fuse Factory Modifications	EA	511.03	
1704	Lightning Arresters, Fcty Mbd	EA	129.48	
1706	Loadbreak Oil Switch, 2 Position Factory Modifications	EA	402.72	
1708	Loop Feed Air Switch, Fcty Mbd	EA	655.46	
1710	Loadbreak Inserts (two), Fcty Mbd	EA	174.97	
1712	Bay-o-net Fuse 25 Thru 167 KVA Factory Modifications	EA	151.37	
16416 1800 Primary - 4800 Grd Y/2400 To 34500 Grd Y/19900				
Note: Secondary - 240/120, 120/240, 240/480, 480/240, 277				
1802	25 KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	2,404.35	147.73
1804	37.5KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	2,722.53	174.51
1806	50 KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	2,943.86	217.79
1808	75 KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	3,648.99	252.65
1810	100KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	4,093.72	290.77
1812	167KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	4,925.50	327.50
1814	250KVA, Pri 4800GrdY/2400-34500Grd Y/19900, Sec 240/120, 480/240, 277	EA	7,821.89	400.49
16416 1999 13.8 KV primary				
2000	Oil dist xfmr, 1ph, 13.8 KV pri, 120/240 V sec, 10 KVA	EA	1,026.76	117.09
2010	Oil dist xfmr, 1ph, 13.8 KV pri, 120/240 V sec, 50 KVA	EA	2,033.94	272.63
2020	Oil dist xfmr, 1ph, 13.8 KV pri, 120/240 V sec, 100 KVA	EA	3,343.60	260.66
2030	Oil dist xfmr, 1ph, 13.8 KV pri, 120/240 V sec, 167 KVA	EA	4,046.96	378.04
2040	Oil dist xfmr, 1ph, 13.8 KV pri, 120/240 V sec, 250 KVA	EA	6,181.64	439.61
16416 2199 7.2 KV primary				
2200	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 10 KVA	EA	1,017.47	126.56
2210	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 15 KVA	EA	1,130.47	128.59
2220	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 25 KVA	EA	1,354.65	186.05
2230	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 37.5 KVA	EA	1,716.81	180.81
2240	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 50 KVA	EA	2,042.07	252.70
2250	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 100 KVA	EA	3,368.01	372.29
2260	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 167 KVA	EA	4,046.96	324.17
2270	Oil dist xfmr, 1ph, 7.2 KV pri, 120/240 V sec, 250 KVA	EA	6,181.64	472.15
2600	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 10 KVA	EA	1,034.90	126.31
2610	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 15 KVA	EA	1,147.90	128.59
2620	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 25 KVA	EA	1,372.08	186.05
2630	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 37.5 KVA	EA	1,734.24	180.81

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2640	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 50 KVA	EA	2,059.50	252.70
2650	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 75 KVA	EA	2,913.68	372.29
2660	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 100 KVA	EA	3,385.43	372.29
2670	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 167 KVA	EA	4,081.82	324.17
2680	Oil dist xfmr, 1ph, 7.2 KV pri, 240/480 V sec, 250 KVA	EA	6,181.64	472.15
16416 2899 2400 V primary				
2900	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 10 KVA	EA	1,034.90	128.81
2910	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 15 KVA	EA	1,147.90	130.58
2920	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 25 KVA	EA	1,372.08	155.71
2930	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 37.5 KVA	EA	1,734.24	221.43
2940	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 50 KVA	EA	2,059.50	254.90
2950	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 75 KVA	EA	2,840.62	319.31
2960	Oil dist xfmr, 1ph, 2400 V pri, 120/240 V sec, 100 KVA	EA	3,373.82	328.24
2962	167 KVA, 1 PH Oil Filled Distribution Transformer	EA	3,996.89	401.36
2964	250 KVA, 1 PH Oil Filled Distribution Transformer	EA	5,367.33	434.11
3100	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 10 KVA	EA	1,052.33	127.12
3110	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 15 KVA	EA	1,165.33	130.58
3120	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 25 KVA	EA	1,389.51	189.57
3130	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 37.5 KVA	EA	1,751.67	250.25
3140	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 50 KVA	EA	2,076.93	254.90
3150	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 75 KVA	EA	2,858.05	319.31
3160	Oil dist xfmr, 1ph, 2400 V pri, 240/480 V sec, 100 KVA	EA	3,391.24	332.00
16416 4000 Commercial distribution type, 3 phase				
16416 4009 4160y/13.8 KV primary, 480y/277				
4010	Oil filled dist xfmr, 480V sec, 75KVA, 3ph, 4160y/13.8KVpri,	EA	9,890.66	384.98
4020	Oil filled dist xfmr, 480V sec, 112.5KVA, 3ph, 4160y/13.8KVpri,	EA	10,411.89	359.37
4030	Oil filled dist xfmr, 480V sec, 150KVA, 3ph, 4160y/13.8KVpri,	EA	11,210.01	579.17
4040	Oil filled dist xfmr, 480V sec, 225KVA, 3ph, 4160y/13.8KVpri,	EA	14,147.26	618.42
4050	Oil filled dist xfmr, 480V sec, 300KVA, 3ph, 4160y/13.8KVpri,	EA	16,123.75	934.37
4060	Oil filled dist xfmr, 480V sec, 500KVA, 3ph, 4160y/13.8KVpri,	EA	19,499.82	1,095.45
4070	Oil filled dist xfmr, 480V sec, 750KVA, 3ph, 4160y/13.8KVpri,	EA	23,753.30	1,273.40
4080	Oil filled dist xfmr, 480V sec, 1000KVA, 3ph, 4160y/13.8KVpri,	EA	26,520.95	1,486.25
4200	Oil filled dist xfmr, 75KVA, 3ph, 4160y/13.8KVpri, 208y/120 V sec	EA	10,587.84	412.23
4210	Oil filled dist xfmr, 112.5KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	11,167.17	385.57
4220	Oil filled dist xfmr, 150 KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	12,023.38	621.43
4230	Oil filled dist xfmr, 225 KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	14,379.65	625.78
4240	Oil filled dist xfmr, 300 KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	16,239.95	931.08
4250	Oil filled dist xfmr, 500 KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	20,371.30	1,142.64
4260	Oil filled dist xfmr, 750 KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	24,915.27	1,193.86
4280	Oil filled dist xfmr, 1000KVA, 3ph, 4160y/13.8KVpri, 208y/120 V	EA	27,915.31	1,531.43
4400	Oil filled dist xfmr, 3ph, 4160y/13.8KVpri, mod, CLF 95 KV	EA	4,380.61	
4410	Oil filled dist xfmr, light arrest 9-10KV, 3ph,	EA	1,568.65	
4420	Oil filled dist xfmr, light arrest 15KV, 3ph,	EA	2,567.94	
4430	Oil filled dist xfmr, loadbreak inserts, 3ph, 4160y/13.8KVpri,	EA	313.73	
4440	Oil filled dist xfmr, ldbrk oil sw, 2 posn, 3ph, 4160y/13.8KVpri,	EA	755.28	
4450	Oil filled dist xfmr, loop feed air switch, 3ph, 4160y/13.8KVpri,	EA	1,022.53	
16416 4500 Primary, 4800 Grdy-13800 Thru 14400 V. Secondary, 208Y/120 - 95 Bi l				
4502	75 KVA, Pri 4800 Grd Y/ 13800-14400V, Sec 208Y/120, 3	EA	9,191.76	413.51
4504	112.5KVA, Pri 4800 Grd Y/ 13800-14400V, Sec 208Y/120, 3	EA	10,373.55	457.31
4506	150 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	11,986.98	490.93
4508	225 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	14,248.04	713.54
4510	300 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	16,274.71	862.44
4512	500 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	21,946.53	1,284.37
4514	750 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	32,372.13	1,352.71
4516	1000 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 208Y/120, 3	EA	34,435.24	1,813.35
16416 4600 Primary, 4800 Grdy-13800 Thru 14400 V. Secondary, 480Y/277, 480 V 95 Kv Bi l				
4602	75 KVA, Pri 4800 Grd Y / 13800-14400V, Sec 480Y/277,	EA	9,191.76	413.51
4604	112.5 KVA, Pri 4800 Grd Y / 13800-14400 V, Se 480Y/277,	EA	10,373.55	457.31
4606	150 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	11,986.98	490.93
4608	225 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	14,184.16	713.54
4610	300 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	16,106.68	862.44
4612	500 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	21,906.77	1,284.37
4614	750 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	29,012.92	1,352.71
4616	1000 KVA, Pri 4800 Grd Y/ 13800-14400 V, Sec 480Y/277,	EA	33,717.30	1,813.35

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16416 4899	15 KV, 480 V			
4900	Oil filled dist xfmr, 3 ph, 15 KV, 480 V, 1500 KVA	EA	28,338.09	1,197.88
4910	Oil filled dist xfmr, 3 ph, 15 KV, 480 V, 2000 KVA	EA	32,799.02	1,605.47
4920	Oil filled dist xfmr, 3 ph, 15 KV, 480 V, 2500 KVA	EA	39,896.77	1,663.06
4930	Oil filled dist xfmr, 3 ph, 15 KV, 480 V, 3000 KVA	EA	45,651.55	1,626.29
4940	Oil filled dist xfmr, 3 ph, 15 KV, 480 V, 3750 KVA	EA	54,579.74	1,751.23
16416 5000	Removal & Relocation Of Transformers			
5002	Remove & Relocate Oil Filled Transformer, Up To 37.5Kva	EA	400.72	
5004	Remove & Relocate Oil Filled Transformers, 37.5 To 100Kva	EA	737.45	
5006	Remove & Relocate "Dry Type" Transformer Up To 37.5Kva	EA	149.99	
5008	Remove & Relocate "Dry Type" Transformer, 37.5 To 112.5Kva	EA	666.65	
16416 5050	Rebuilt Transformers, Pole Mounted,			
Note: Single Phase Distribution Transformer, Bushing Primary, Cluster Mountable, Pole Mount, Conventional Type, 12.5 KV, Grd Y 120/240V Secondary, 2-Taps 2-1/2% Above And Below. UL Listed.				
5052	10 KVA Rebuilt Transformer	EA	822.73	
5054	15 KVA Rebuilt Transformer	EA	928.73	
5056	25 KVA Rebuilt Transformer	EA	1,364.83	
5058	37.5 KVA Rebuilt Transformer	EA	1,736.45	
5060	50 KVA Rebuilt Transformer	EA	1,948.47	
5062	75 KVA Rebuilt Transformer	EA	2,285.20	
5064	100 KVA Rebuilt Transformer	EA	2,609.46	
16416 5100	Rebuilt Transformers, Pad Mounted,			
Note: Single Phase Distribution Transformer, Includes Load Break Inserts, Current Limiting Fuse, Feed Through, Load Break Oil Switch, 72/12470 Primary, 120/240V Secondary, 2-Taps 2-1/2% Above And Below. UL Listed				
5102	10 KVA Rebuilt Transformer	EA	2,713.15	
5104	25 KVA Rebuilt Transformer	EA	3,230.84	
5106	50 KVA Rebuilt Transformer	EA	4,458.16	
5108	100 KVA Rebuilt Transformer	EA	5,650.80	
5110	167 KVA Rebuilt Transformer	EA	7,520.91	
5112	250 KVA Rebuilt Transformer	EA	10,718.60	
16416 5200	Rebuilt Transformers, Pad Mounted,			
Note: 3 Phase, Oil Filled, Includes: Load Breaker Inserts, Current Limiting Fuse, Feed Through, Load Break Oil Switch. 72/12470 Primary, 120/208V, 277/480V, 480V Delta Secondary, 2-Taps 2-1/2% Above And Below. UL Listed.				
5202	75 KVA Rebuilt Transformer	EA	4,047.60	
5204	112 KVA Rebuilt Transformer	EA	4,540.98	
5206	180 KVA Rebuilt Transformer	EA	5,469.54	
5208	225 KVA Rebuilt Transformer	EA	6,361.68	
5210	300 KVA Rebuilt Transformer	EA	7,876.34	
5212	500 KVA Rebuilt Transformer	EA	10,936.85	
5214	750 KVA Rebuilt Transformer	EA	14,376.26	
5216	1000 KVA Rebuilt Transformer	EA	17,704.81	
16416 5300	Foam Core Poly Transformer Pads			
5310	Single Phase Foam Core Poly Pads , Does Not Include Site Prep	EA	95.88	5.90
16416 5499	Liquid containment area, curb & 6" slab			
Note: Containment Area-Reinforced Concrete Curb With 6" Slab				
5500	Oil filled xfmr,75 KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5510	Oil filled xfmr,112.5KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5520	Oil filled xfmr,150 KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5530	Oil filled xfmr,225 KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5540	Oil filled xfmr,300 KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5550	Oil filled xfmr,500 KVA xfmr, liquid containment area, curb &	EA	2,008.21	535.51
5560	Oil filled xfmr,750 KVA xfmr, liquid containment area, curb &	EA	2,292.97	604.38
5570	Oil filled xfmr,1000 KVA xfmr, liquid containment area, curb &	EA	3,523.84	786.70
16416 7000	Distribution type, 1 phase, residential +			
16416 7099	4160V primary			
7100	Oil xfmr, dist type, 4 taps, 10KVA, 1 ph, 120/240V sec, 4160V	EA	998.75	105.81
7110	Oil xfmr, dist type, 4 taps, 15KVA, 1 ph, 120/240V sec, 4160V	EA	1,149.68	134.84
7120	Oil xfmr, dist type, 4 taps, 25KVA, 1 ph, 120/240V sec, 4160V	EA	1,374.63	158.30
7125	37.5KVA Xfmr Sec120/240V,4 Taps Pri 4160V Grd Y,Oil Filled,1Ph	EA	2,202.70	252.16
7130	Oil xfmr, dist type, 4 taps, 50KVA, 1 ph, 120/240V sec, 4160V	EA	2,045.07	239.06
7140	Oil xfmr, dist type, 4 taps, 75KVA, 1 ph, 120/240V sec, 4160V	EA	2,687.97	267.40
7150	Oil xfmr, dist type, 4 taps, 100KVA, 1 ph, 120/240V sec,	EA	3,261.75	304.34

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7200	Oil xfmr, dist type, 2 taps, 10KVA, 1 ph, 120/240V sec, 4160V	EA	1,099.84	116.73
7210	Oil xfmr, dist type, 2 taps, 15KVA, 1 ph, 120/240V sec, 4160V	EA	1,261.23	148.24
7220	Oil xfmr, dist type, 2 taps, 25KVA, 1 ph, 120/240V sec, 4160V	EA	1,508.26	174.10
7225	37.5KVA Xfrmr Sec120/240V, 2 Taps Pri 4160V Grd Y, Oil Filled, 1Ph	EA	2,202.70	252.16
7230	Oil xfmr, dist type, 2 taps, 50KVA, 1 ph, 120/240V sec, 4160V	EA	2,268.17	265.82
7240	Oil xfmr, dist type, 2 taps, 75KVA, 1 ph, 120/240V sec, 4160V	EA	3,016.81	300.85
7250	Oil xfmr, dist type, 2 taps, 100KVA, 1 ph, 120/240V sec,	EA	3,652.17	341.57
16416 7299 13.8 KV primary				
7300	Oil xfmr, dist type, 2 taps, 10 KVA, 1 ph, 120/240V sec, 13.8 KV	EA	1,099.84	115.88
7310	Oil xfmr, dist type, 2 taps, 15 KVA, 1 ph, 120/240V sec, 13.8 KV	EA	1,261.23	142.96
7320	Oil xfmr, dist type, 2 taps, 25 KVA, 1 ph, 120/240V sec, 13.8 KV	EA	1,508.26	174.87
7325	37.5KVA Xfrmr Sec120/240V, 2 Taps Pri 13.8-14.4KV Grd Y, Oil	EA	2,346.84	251.29
7330	Oil xfmr, dist type, 2 taps, 50 KVA, 1 ph, 120/240V sec, 13.8 KV	EA	2,268.17	251.89
7340	Oil xfmr, dist type, 2 taps, 75 KVA, 1 ph, 120/240V sec, 13.8 KV	EA	3,016.81	291.60
7350	Oil xfmr, dist type, 2 taps, 100 KVA, 1 ph, 120/240V sec, 13.8 K	EA	3,652.17	343.00
7400	Oil xfmr, dist type, 2 taps, 10 KVA, 1 ph, 240/480V sec, 13.8 KV	EA	1,140.51	107.11
7410	Oil xfmr, dist type, 2 taps, 15 KVA, 1 ph, 240/480V sec, 13.8 KV	EA	1,300.73	133.01
7420	Oil xfmr, dist type, 2 taps, 25 KVA, 1 ph, 240/480V sec, 13.8 KV	EA	1,547.77	144.34
7430	Oil xfmr, dist type, 2 taps, 37.5 KVA, 1 ph, 240/480V sec,	EA	1,920.88	177.67
7440	Oil xfmr, dist type, 2 taps, 50 KVA, 1 ph, 240/480V sec, 13.8 KV	EA	2,308.84	222.01
7450	Oil xfmr, dist type, 2 taps, 75 KVA, 1 ph, 240/480V sec, 13.8 KV	EA	3,057.48	252.42
7460	Oil xfmr, dist type, 2 taps, 100 KVA, 1 ph, 240/480V sec, 13.8 K	EA	3,691.68	283.03
16416 7499 24.9 KV primary 240/480 Volt 2-2.5 Pot Tops Fcbn Auto Fcan				
7500	Oil xfmr, dist type, 2 taps, 10 KVA, 1 ph, 240/480V sec, 24.9 KV	EA	1,869.68	273.53
7510	Oil xfmr, dist type, 2 taps, 15 KVA, 1 ph, 240/480V sec, 24.9 KV	EA	2,074.12	308.29
7520	Oil xfmr, dist type, 2 taps, 25 KVA, 1 ph, 240/480V sec, 24.9 KV	EA	2,482.92	344.74
7522	37.5KVA Xfrmr Sec 240/480V, 2 Taps Pri 24.9KV Grd Y, Oil Filled, 1Ph	EA	3,216.71	477.91
7530	Oil xfmr, dist type, 2 taps, 50 KVA, 1 ph, 240/480V sec, 24.9 KV	EA	3,316.40	493.71
7540	Oil xfmr, dist type, 2 taps, 75 KVA, 1 ph, 240/480V sec, 24.9 KV	EA	4,122.26	563.01
7550	Oil xfmr, dist type, 2 taps, 100 KVA, 1 ph, 240/480V sec, 24.9 K	EA	4,691.81	565.53
7552	167KVA Xfrmr Sec 240/480V, 2 Taps Pri 24.9KV Grd Y, Oil Filled, 1Ph	EA	8,150.74	941.76
7560	Oil xfmr, dist type, 2 taps, 250 KVA, 1 ph, 240/480V sec, 24.9 K	EA	14,682.90	1,583.77
7562	333KVA Xfrmr Sec 240/480V, 2 Taps Pri 24.9KV Grd Y, Oil Filled, 1Ph	EA	12,011.63	1,343.13
7570	Oil xfmr, dist type, 2 taps, 500 KVA, 1 ph, 240/480V sec, 24.9 K	EA	18,292.26	2,005.77
16416 7599 Transformer platforms, 75-167 KVA				
7600	Oil xfmr, dist type, 1 ph, xfmr platform 75-167KVA	EA	1,047.09	105.48
16416 8000 Primary 4800 Grd. Y Secondary 120/240V 4-2.5 Pct Taps Fcbn, Class A, 95 Kv Bil				
8010	10KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,307.62	132.16
8020	15KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,572.80	171.96
8030	25KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,831.60	198.02
8040	37.5KVA Xfrmr Sec120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	2,366.87	238.06
8050	50KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	2,810.21	291.25
8060	75KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	3,862.12	388.69
8070	100KVA Xfrmr Sec 120/240V, 4 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	4,577.08	438.35
16416 8100 Primary 4800 Grd. Y Secondary 120/240V 2-2.5 Pct Taps Fcan And Fcbn				
8110	10KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,307.62	132.16
8120	15KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,599.98	171.96
8130	25KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	1,831.60	198.02
8140	37.5KVA Xfrmr Sec120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	2,366.87	238.06
8150	50KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	2,810.21	291.25
8160	75KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	3,582.73	388.69
8170	100KVA Xfrmr Sec 120/240V, 2 Taps Pri 4800V Grd Y, Oil Filled, 1Ph	EA	4,435.21	438.35
16417 Transformers				
16417 1000 Buck-Boost Transformer				
1001	Buck-boost XFMR, sgl ph, 120/240 V pri, 12/24 V sec, 0.10 kVA	EA	61.37	
1002	Buck-boost XFMR, sgl ph, 120/240 V pri, 12/24 V sec, 0.25 kVA	EA	89.88	
1003	Buck-boost XFMR, sgl ph, 120/240 V pri, 12/24 V sec, 0.50 kVA	EA	122.74	
1004	Buck-boost XFMR, sgl ph, 120/240 V pri, 12/24 V sec, 0.75 kVA	EA	157.85	
1005	sgl ph, 120/240 volt pri, 12/24 volt sec, 1.0 kVA	EA	200.16	
1006	sgl ph, 120/240 volt pri, 12/24 volt sec, 1.5 kVA	EA	243.96	
1007	sgl ph, 120/240 volt pri, 12/24 volt sec, 2.0 kVA	EA	292.90	
1008	sgl ph, 120/240 volt pri, 12/24 volt sec, 3.0 kVA	EA	391.35	
1009	sgl ph, 120/240 volt pri, 12/24 volt sec, 5.0 kVA	EA	511.77	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1010	3 phase, 240 V pri, 208/120 V s ec, 15 kVA	EA	1,423.91	
1011	3 phase, 240 V pri, 208/120 V s ec, 30 kVA	EA	1,583.93	
1012	3 phase, 240 V pri, 208/120 V s ec, 45 kVA	EA	1,909.80	
1013	3 phase, 240 V pri, 208/120 V s ec, 75 kVA	EA	2,324.93	
1014	3 phase, 240 V pri, 208/120 V s ec, 112.5 kVA	EA	2,887.32	
1015	3 phase, 240 V pri, 208/120 V s ec, 150 kVA	EA	3,806.82	
1016	3 phase, 240 V pri, 208/120 V s ec, 225 kVA	EA	4,948.58	
1017	3 phase, 240 V pri, 208/120 V s ec, 300 kVA	EA	6,702.35	
16417 3000 Isolating Panels				
3001	Isolating pnls, for hosp appl, c ritical care area, 8 circ, 3 kV	EA	6,103.35	
3002	Isolating pnls, for hosp appl, c ritical care area, 8 circ, 5 kV	EA	6,282.18	
3003	for hosp appl, critical care ar ea, 8 circ, 7.5 kVA	EA	6,400.90	
3004	for hosp appl, critical care ar ea, 8 circ, 10 kVA	EA	6,616.64	
3005	for hosp appl, operating rm pwr & ltg, 8 circ, 3 kVA	EA	5,115.68	
3006	for hosp appl, operating rm pwr & ltg, 8 circ, 5 kVA	EA	5,381.66	
3007	for hosp appl, operating rm pwr <g, 8 circ, 7.5 kVA	EA	5,907.06	
3008	for hosp appl, operating rm pwr & ltg, 8 circ, 10 kVA	EA	6,297.10	
3009	for hospital applications, x-ra y sys, 15 kVA, 90 amp	EA	12,978.39	
3010	for hospital applications, x-ra y sys, 25 kVA, 125 amp	EA	13,344.89	
16418 Power Filters & Conditioners				
16418 1000 Automatic Voltage Regulators				
1001	Auto vage rgltrs, cmpr GR, sgl- ph, 120 V, 8.6 kVA	EA	5,165.96	
1002	Auto vage rgltrs, cmpr GR, sgl- ph, 120 V, 17.3 kVA	EA	6,104.42	
1003	Auto vage rgltrs, cmpr GR, sgl- ph, 208/240 V, 7.5/8.6 kVA	EA	5,165.96	
1004	Auto vage rgltrs, cmpr GR, sgl- ph, 208/240 V, 13.5/15.6 kVA	EA	6,095.53	
1005	Auto vage rgltrs, cmpr GR, sgl- ph, 208/240 V, 27.0/31.2 kVA	EA	7,673.08	
1006	cmpr GR,two-ph,sgl cont,208/240 V,15.0/17.3 kVA	EA	6,104.42	
1007	Auto vage rgltrs, cmpr GR, two- ph, indv ph cont, 15.0/17.3 kVA	EA	6,104.42	
1008	Auto vage rgltrs,cmpr GR,two-ph ,indv ph cont,30.0/34.6 kVA	EA	7,690.86	
1009	cmpr GR, three-ph sgl cont, 20 8/240 V, 26/30 kVA	EA	6,113.13	
1010	cmpr GR, three-ph sgl cont, 38 0/480 V, 24/30 kVA	EA	6,113.13	
1011	cmpr GR, three-ph sgl cont, 38 0/480 V, 43/54 kVA	EA	11,060.55	
1012	Auto vage rgltrs, cmpr GR, indv ph cont, 208 V, 26 kVA	EA	6,122.20	
1013	Auto vage rgltrs, cmpr GR, indv ph cont, 208 V, 52 kVA	EA	7,717.89	
1014	Auto vage rgltrs, cmpr GR, indv ph cont, 340/480 V, 24/30 kVA	EA	6,113.13	
1015	Auto vage rgltrs, cmpr GR, indv ph cont, 340/480 V, 43/54 kVA	EA	7,681.79	
1016	Auto vage rgltrs, cmpr GR, indv ph cont, 340/480 V, 48/60 kVA	EA	11,118.65	
1017	Auto vage rgltrs, cmpr GR, indv ph cont, 340/480 V, 86/108 kVA	EA	12,423.84	
1018	Auto vage rgltrs, std GR, sgl-ph , 115 V, 2.3 kVA	EA	1,905.92	
1019	Auto vage rgltrs, std GR, sgl-ph , 115 V, 4.2 kVA	EA	3,036.59	
1020	Auto vage rgltrs, std GR, sgl-ph , 115 V, 6.6 kVA	EA	3,749.40	
1021	Auto vage rgltrs, std GR, sgl-ph , 115 V, 13.0 kVA	EA	4,824.21	
1022	Auto vage rgltrs, std GR, sgl-ph , 115 V, 16.6 kVA	EA	5,722.24	
1023	Auto vage rgltrs, std GR, sgl-ph , 230 V, 8.3 kVA	EA	4,846.42	
1024	Auto vage rgltrs, std GR, sgl-ph , 230 V, 21.4 kVA	EA	5,722.24	
1025	Auto vage rgltrs, std GR, sgl-ph , 230 V, 29.9 kVA	EA	5,722.24	
1026	Auto vage rgltrs, std GR, sgl-ph , 460 V, 9.2 kVA	EA	4,846.42	
1027	Auto vage rgltrs, std GR, sgl-ph , 460 V, 20.7 kVA	EA	5,722.24	
1028	Auto vage rgltrs, std GR, three- ph, 230 V, 13.1 kVA	EA	4,868.55	
1029	Auto vage rgltrs, std GR, three- ph, 230 V, 19.1 kVA	EA	5,740.03	
1030	Auto vage rgltrs, std GR, three- ph, 230 V, 25.1 kVA	EA	5,731.07	
1031	Auto vage rgltrs, std GR, three- ph, 230 V, 57.8 kVA	EA	10,385.89	
1032	Auto vage rgltrs, std GR, three- ph, 230 V, 74.9 kVA	EA	10,390.40	
1033	Auto vage rgltrs, std GR, three- ph, 460 V, 14.3 kVA	EA	4,868.55	
1034	Auto vage rgltrs, std GR, three- ph, 460 V, 19.1 kVA	EA	5,740.03	
1035	Auto vage rgltrs, std GR, three- ph, 460 V, 27.9 kVA	EA	5,735.50	
1036	Auto vage rgltrs, std GR, three- ph, 460 V, 59.8 kVA	EA	10,380.76	
1037	Auto vage rgltrs, std GR, three- ph, 460 V, 79.7 kVA	EA	11,605.96	
1038	Auto vage rgltrs, std GR, three- ph, 460 V, 118 kVA	EA	12,186.94	
1039	lab GR,prcn,elek vage rgltr,sgl- ph,115 V,0.5 kVA	EA	1,584.13	
1040	lab GR,prcn,elek vage rgltr,sgl- ph,115 V,1.0 kVA	EA	1,702.58	
1041	lab GR,prcn,elek vage rgltr,sgl- ph,115 V,3.0 kVA	EA	2,368.26	
1042	lab GR,prcn,elek vage rgltr,sgl- ph,115 V,6.0 kVA	EA	4,376.90	
1043	lab GR,prcn,elek vage rgltr,sgl- ph,115 V,10.0 kVA	EA	5,712.87	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1044	lab GR, prcn, elek vage rgltr, sgl- ph, 115 V, 15.0 kVA	EA	6,490.77	
1045	lab GR, prcn, elek vage rgltr, sgl- ph, 230 V, 3.0 kVA	EA	2,687.80	
1046	lab GR, prcn, elek vage rgltr, sgl- ph, 230 V, 6.0 kVA	EA	4,464.04	
1047	lab GR, prcn, elek vage rgltr, sgl- ph, 230 V, 10.0 kVA	EA	5,930.13	
1048	lab GR, prcn, elek vage rgltr, sgl- ph, 230 V, 15.0 kVA	EA	6,689.69	
16418 3000 Capacitors				
3001	Capacitors, indoor, 240 volts, s ingle & 3 phase, 0.5 kVAR	EA	317.56	
3002	Capacitors, indoor, 240 volts, s ingle & 3 phase, 1.0 kVAR	EA	379.15	
3003	Capacitors, indoor, 240 volts, s ingle & 3 phase, 2.5 kVAR	EA	453.47	
3004	Capacitors, indoor, 240 volts, s ingle & 3 phase, 5.0 kVAR	EA	536.77	
3005	Capacitors, indoor, 240 volts, s ingle & 3 phase, 7.5 kVAR	EA	620.57	
3006	Capacitors, indoor, 240 volts, s ingle & 3 phase, 10 kVAR	EA	738.25	
3007	Capacitors, indoor, 240 volts, s ingle & 3 phase, 15 kVAR	EA	1,014.95	
3008	Capacitors, indoor, 240 volts, s ingle & 3 phase, 20 kVAR	EA	1,252.30	
3009	Capacitors, indoor, 240 volts, s ingle & 3 phase, 25 kVAR	EA	1,487.92	
3010	Capacitors, indoor, 480 volts, s ingle & 3 phase, 1 kVAR	EA	298.97	
3011	Capacitors, indoor, 480 volts, s ingle & 3 phase, 2 kVAR	EA	341.97	
3012	Capacitors, indoor, 480 volts, s ingle & 3 phase, 5 kVAR	EA	436.04	
3013	Capacitors, indoor, 480 volts, s ingle & 3 phase, 7.5 kVAR	EA	470.90	
3014	Capacitors, indoor, 480 volts, s ingle & 3 phase, 10 kVAR	EA	517.37	
3015	Capacitors, indoor, 480 volts, s ingle & 3 phase, 15 kVAR	EA	639.38	
3016	Capacitors, indoor, 480 volts, s ingle & 3 phase, 20 kVAR	EA	713.53	
3017	Capacitors, indoor, 480 volts, s ingle & 3 phase, 30 kVAR	EA	889.30	
3018	Capacitors, indoor, 480 volts, s ingle & 3 phase, 40 kVAR	EA	1,127.61	
3019	Capacitors, indoor, 480 volts, s ingle & 3 phase, 50 kVAR	EA	1,281.35	
3020	Capacitors, indoor, 600 volts, s ingle & 3 phase, 1 kVAR	EA	298.97	
3021	Capacitors, indoor, 600 volts, s ingle & 3 phase, 2 kVAR	EA	341.97	
3022	Capacitors, indoor, 600 volts, s ingle & 3 phase, 5 kVAR	EA	436.04	
3023	Capacitors, indoor, 600 volts, s ingle & 3 phase, 7.5 kVAR	EA	470.90	
3024	Capacitors, indoor, 600 volts, s ingle & 3 phase, 10 kVAR	EA	517.37	
3025	Capacitors, indoor, 600 volts, s ingle & 3 phase, 15 kVAR	EA	643.81	
3026	Capacitors, indoor, 600 volts, s ingle & 3 phase, 20 kVAR	EA	713.53	
3027	Capacitors, indoor, 600 volts, s ingle & 0 phase, 25 kVAR	EA	796.35	
3028	Capacitors, indoor, 600 volts, s ingle & 3 phase, 35 kVAR	EA	1,007.19	
3029	Capacitors, indoor, 600 volts, s ingle & 3 phase, 50 kVAR	EA	1,276.39	
16418 3400 Computer Isolation Transformer				
3401	computer GR, single-phase, 120/ 240 V, 0.5 kVA	EA	473.66	
3402	computer GR, single-phase, 120/ 240 V, 1.0 kVA	EA	617.50	
3403	computer GR, single-phase, 120/ 240 V, 2.5 kVA	EA	924.06	
3404	computer grade, single-phase, 1 20/240 V, 5 kVA	EA	995.54	
16418 3600 Computer Regulator Transformer				
3601	ferro-resonant, sgl-phase, 240 V, 0.5 kVA	EA	524.54	
3602	ferro-resonant, sgl-phase, 240 V, 1.0 kVA	EA	720.72	
3603	ferro-resonant, sgl-phase, 240 V, 2.0 kVA	EA	1,226.47	
3604	ferro-resonant, sgl-ph, pl-in unit 120 V, 0.14 kVA	EA	299.57	
3605	ferro-resonant, sgl-ph, pl-in unit 120 V, 0.25 kVA	EA	349.53	
3606	ferro-resonant, sgl-ph, pl-in u nit 120 V, 0.5 kVA	EA	515.69	
3607	ferro-resonant, sgl-ph, pl-in unit 120 V, 1.0 kVA	EA	709.64	
3608	ferro-resonant, sgl-ph, pl-in unit 120 V, 2.0 kVA	EA	1,199.88	
16418 6000 Power Conditioner Transformer				
6001	Power condtnr XFMR, sgl-ph, 115 V, 3.0 kVA, + or - 3% accuracy	EA	2,804.00	
6002	Power condtnr XFMR, sgl-ph, 208-24 0V, 5.0 kVA, + or - 1.5% accuracy	EA	3,639.53	
6003	Power condtnr XFMR, sgl-ph, 208-24 0V, 5.0 kVA, + or - 6% accuracy	EA	3,257.61	
6004	Power condtnr XFMR, sgl-ph, 208-24 0V, 7.5 kVA, + or - 1.5% accuracy	EA	4,602.58	
6005	Power condtnr XFMR, sgl-ph, 208-24 0V, 7.5 kVA, + or - 6% accuracy	EA	3,842.87	
6006	Power condtnr XFMR, sgl-ph, 208-24 0V, 10.0 kVA, + or - 1.5% accurac	EA	6,122.20	
6007	Power condtnr XFMR, sgl-ph, 208-24 0V, 10.0 kVA, + or - 6% accuracy	EA	5,217.14	
16418 8200 Transient Suppressor/Voltage Regul				
8201	single-phase, 115 V, 1.0 kVA	EA	1,035.81	
8202	Transient suppressor/voltage reg ulator, 1 phase, 115 V, 2.0 kVA	EA	1,409.84	
8203	Transient suppressor/voltage reg ulator, 1 phase, 115 V, 4.0 kVA	EA	1,730.55	
8204	Transient suppressor/voltage reg ulator, 1 phase, 220 V, 1.0 kVA	EA	1,035.81	
8205	Transient suppressor/voltage reg ulator, 1 phase, 220 V, 2.0 kVA	EA	1,409.84	
8206	Transient suppressor/voltage reg ulator, 1 phase, 220 V, 4.0 kVA	EA	1,817.69	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
8207	Transient suppressor/voltage rgl tr, 1 ph, pl-in unit, 120 V, 1.0 kV	EA	980.48	
8208	Transient suppressor/voltage rgl tr, 1 ph, pl-in unit, 120 V, 2.0 kV	EA	1,369.74	
16418 8400	Transient Voltage Suppressor Trans			
8401	1 phase, 120 volt, 1.8 kVA	EA	578.23	
8402	1 phase, 120 volt, 3.6 kVA	EA	1,013.97	
8403	1 phase, 120 volt, 7.2 kVA	EA	1,318.29	
8404	1 phase, 240 volt, 3.6 kVA	EA	1,013.97	
8405	1 phase, 240 volt, 7.2 kVA	EA	1,316.08	
8406	1 phase, 240 volt, 14.4 kVA	EA	1,666.88	
8407	sgl-phase, pl-in unit, 120 V, 1.8 kVA	EA	550.55	
16419	Power Distribution Unit			
16419 1000	Power Distribution Unit Complete W Spike Suppre			
1001	125 Kva Power Distribution Unit	EA	19,296.14	
16420	Bus Ducts/Busways			
16423 0010	Copper bus duct plug in			
16423 0049	Indoor, 3 pole 4 wire, straight section Copper Conductors			
0050	Copper bus duct, plug-in, indr, 3P 4W, str sect, 225 amp	LF	172.21	6.95
2301	For 14'-20' Installed Elevation, Add		1.42	
2302	For 21'-25' Installed Elevation, Add		2.84	
2303	For 26'-30' Installed Elevation, Add		3.55	
2304	For 31'-35' Installed Elevation, Add		4.25	
2305	For 36'-40' Installed Elevation, Add		4.96	
2306	For Over 40' Installed Elevation, Add		5.67	
1000	Copperbus duct, plug-in, indr, 3P 4W str sect, 400 amp	LF	175.76	8.69
2301	For 14'-20' Installed Elevation, Add		1.77	
2302	For 21'-25' Installed Elevation, Add		3.55	
2303	For 26'-30' Installed Elevation, Add		4.43	
2304	For 31'-35' Installed Elevation, Add		5.32	
2305	For 36'-40' Installed Elevation, Add		6.21	
2306	For Over 40' Installed Elevation, Add		7.09	
1500	Copperbus duct, plug-in, indr, 3P 4W, str sect, 600 amp	LF	179.85	9.82
2301	For 14'-20' Installed Elevation, Add		2.18	
2302	For 21'-25' Installed Elevation, Add		4.36	
2303	For 26'-30' Installed Elevation, Add		5.46	
2304	For 31'-35' Installed Elevation, Add		6.55	
2305	For 36'-40' Installed Elevation, Add		7.64	
2306	For Over 40' Installed Elevation, Add		8.73	
2400	Copperbus duct, plug-in, indr, 3P 4W str sect, 800 amp	LF	216.61	13.33
2301	For 14'-20' Installed Elevation, Add		2.84	
2302	For 21'-25' Installed Elevation, Add		5.67	
2303	For 26'-30' Installed Elevation, Add		7.09	
2304	For 31'-35' Installed Elevation, Add		8.51	
2305	For 36'-40' Installed Elevation, Add		9.93	
2306	For Over 40' Installed Elevation, Add		11.35	
2450	Copperbus duct, plug-in, indr, 3P 4W, str sect, 1000 amp	LF	239.51	14.18
2301	For 14'-20' Installed Elevation, Add		3.15	
2302	For 21'-25' Installed Elevation, Add		6.30	
2303	For 26'-30' Installed Elevation, Add		7.88	
2304	For 31'-35' Installed Elevation, Add		9.46	
2305	For 36'-40' Installed Elevation, Add		11.03	
2306	For Over 40' Installed Elevation, Add		12.61	
2500	Copperbus duct, plug-in, indr, 3P 4W str sect, 1350 amp	LF	331.76	16.56
2301	For 14'-20' Installed Elevation, Add		3.55	
2302	For 21'-25' Installed Elevation, Add		7.09	
2303	For 26'-30' Installed Elevation, Add		8.87	
2304	For 31'-35' Installed Elevation, Add		10.64	
2305	For 36'-40' Installed Elevation, Add		12.41	
2306	For Over 40' Installed Elevation, Add		14.18	
2510	Copperbus duct, plug-in, indr, 3P 4W str sect, 1600 amp	LF	383.09	19.33
2301	For 14'-20' Installed Elevation, Add		4.73	
2302	For 21'-25' Installed Elevation, Add		9.46	
2303	For 26'-30' Installed Elevation, Add		11.82	
2304	For 31'-35' Installed Elevation, Add		14.18	
2305	For 36'-40' Installed Elevation, Add		16.55	
2306	For Over 40' Installed Elevation, Add		18.91	
2520	Copperbus duct, plug-in, indr, 3P 4W str sect, 2000 amp	LF	480.86	25.53

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	For 14' - 20' Installed Elevation, Add		5.67	
2302	For 21' - 25' Installed Elevation, Add		11.35	
2303	For 26' - 30' Installed Elevation, Add		14.19	
2304	For 31' - 35' Installed Elevation, Add		17.02	
2305	For 36' - 40' Installed Elevation, Add		19.86	
2306	For Over 40' Installed Elevation, Add		22.70	
2530	Copperbus duct, plug-in, indr, 3P 4W str sect, 2500 amp	LF	593.80	33.33
2301	For 14' - 20' Installed Elevation, Add		7.09	
2302	For 21' - 25' Installed Elevation, Add		14.18	
2303	For 26' - 30' Installed Elevation, Add		17.73	
2304	For 31' - 35' Installed Elevation, Add		21.28	
2305	For 36' - 40' Installed Elevation, Add		24.82	
2306	For Over 40' Installed Elevation, Add		28.37	
2540	Copperbus duct, plug-in, indr, 3P 4W str sect, 3000 amp	LF	727.83	45.39
2301	For 14' - 20' Installed Elevation, Add		9.46	
2302	For 21' - 25' Installed Elevation, Add		18.91	
2303	For 26' - 30' Installed Elevation, Add		23.64	
2304	For 31' - 35' Installed Elevation, Add		28.37	
2305	For 36' - 40' Installed Elevation, Add		33.10	
2306	For Over 40' Installed Elevation, Add		37.82	
16423 2549	Indoor, 3 pole 4 wire, feeder plug-in			
2550	Copper feeder duct 600amp, 3P, 4W plug-in	LF	158.53	9.11
2301	For 14' - 20' Installed Elevation, Add		2.03	
2302	For 21' - 25' Installed Elevation, Add		4.05	
2303	For 26' - 30' Installed Elevation, Add		5.07	
2304	For 31' - 35' Installed Elevation, Add		6.08	
2305	For 36' - 40' Installed Elevation, Add		7.09	
2306	For Over 40' Installed Elevation, Add		8.10	
2600	Copper feeder duct 800amp, 3P, 4W plug-in	LF	194.27	11.84
2301	For 14' - 20' Installed Elevation, Add		2.58	
2302	For 21' - 25' Installed Elevation, Add		5.16	
2303	For 26' - 30' Installed Elevation, Add		6.45	
2304	For 31' - 35' Installed Elevation, Add		7.74	
2305	For 36' - 40' Installed Elevation, Add		9.03	
2306	For Over 40' Installed Elevation, Add		10.32	
2700	Copper feeder duct 1000amp, 3P, 4W plug-in	LF	216.61	12.20
2301	For 14' - 20' Installed Elevation, Add		2.84	
2302	For 21' - 25' Installed Elevation, Add		5.67	
2303	For 26' - 30' Installed Elevation, Add		7.09	
2304	For 31' - 35' Installed Elevation, Add		8.51	
2305	For 36' - 40' Installed Elevation, Add		9.93	
2306	For Over 40' Installed Elevation, Add		11.35	
2800	Copper feeder duct 1350amp, 3P, 4W plug-in	LF	308.07	13.55
2301	For 14' - 20' Installed Elevation, Add		3.15	
2302	For 21' - 25' Installed Elevation, Add		6.30	
2303	For 26' - 30' Installed Elevation, Add		7.88	
2304	For 31' - 35' Installed Elevation, Add		9.46	
2305	For 36' - 40' Installed Elevation, Add		11.03	
2306	For Over 40' Installed Elevation, Add		12.61	
2900	Copper feeder duct 1600amp, 3P, 4W plug-in	LF	356.58	18.65
2301	For 14' - 20' Installed Elevation, Add		4.05	
2302	For 21' - 25' Installed Elevation, Add		8.11	
2303	For 26' - 30' Installed Elevation, Add		10.13	
2304	For 31' - 35' Installed Elevation, Add		12.16	
2305	For 36' - 40' Installed Elevation, Add		14.19	
2306	For Over 40' Installed Elevation, Add		16.21	
3000	Copper feeder duct 2000amp, 3P, 4W plug-in	LF	453.97	20.74
2301	For 14' - 20' Installed Elevation, Add		4.73	
2302	For 21' - 25' Installed Elevation, Add		9.46	
2303	For 26' - 30' Installed Elevation, Add		11.82	
2304	For 31' - 35' Installed Elevation, Add		14.18	
2305	For 36' - 40' Installed Elevation, Add		16.55	
2306	For Over 40' Installed Elevation, Add		18.91	
3010	Copper feeder duct 2500amp, 3P, 4W plug-in	LF	576.37	31.91
2301	For 14' - 20' Installed Elevation, Add		7.09	
2302	For 21' - 25' Installed Elevation, Add		14.18	
2303	For 26' - 30' Installed Elevation, Add		17.73	
2304	For 31' - 35' Installed Elevation, Add		21.28	
2305	For 36' - 40' Installed Elevation, Add		24.82	
2306	For Over 40' Installed Elevation, Add		28.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3020	Copper feeder duct 3000amp, 3P, 4W plug-in	LF	704.59	45.39
2301	For 14'-20' Installed Elevation, Add		9.46	
2302	For 21'-25' Installed Elevation, Add		18.91	
2303	For 26'-30' Installed Elevation, Add		23.64	
2304	For 31'-35' Installed Elevation, Add		28.37	
2305	For 36'-40' Installed Elevation, Add		33.10	
2306	For Over 40' Installed Elevation, Add		37.82	
3030	Copper feeder duct 4000amp, 3P, 4W plug-in	LF	949.41	66.66
2301	For 14'-20' Installed Elevation, Add		14.18	
2302	For 21'-25' Installed Elevation, Add		28.37	
2303	For 26'-30' Installed Elevation, Add		35.46	
2304	For 31'-35' Installed Elevation, Add		42.55	
2305	For 36'-40' Installed Elevation, Add		49.64	
2306	For Over 40' Installed Elevation, Add		56.74	
3040	Copper feeder duct 5000amp, 3P, 4W plug-in	LF	1,271.35	130.49
2301	For 14'-20' Installed Elevation, Add		28.37	
2302	For 21'-25' Installed Elevation, Add		56.74	
2303	For 26'-30' Installed Elevation, Add		70.92	
2304	For 31'-35' Installed Elevation, Add		85.10	
2305	For 36'-40' Installed Elevation, Add		99.29	
2306	For Over 40' Installed Elevation, Add		113.47	
16423 3099	Indoor, 3 pole 4 wire, elbows plug-in			
3100	Copperbus duct, plug-in, indr, 3P 4W Elbows, 225 amp	EA	1,077.22	62.41
2301	For 14'-20' Installed Elevation, Add		14.18	
2302	For 21'-25' Installed Elevation, Add		28.37	
2303	For 26'-30' Installed Elevation, Add		35.46	
2304	For 31'-35' Installed Elevation, Add		42.55	
2305	For 36'-40' Installed Elevation, Add		49.64	
2306	For Over 40' Installed Elevation, Add		56.74	
3200	Copperbus duct, plug-in, indr, 3P 4W Elbows, 400 amp	EA	1,092.98	70.85
2301	For 14'-20' Installed Elevation, Add		15.76	
2302	For 21'-25' Installed Elevation, Add		31.52	
2303	For 26'-30' Installed Elevation, Add		39.40	
2304	For 31'-35' Installed Elevation, Add		47.28	
2305	For 36'-40' Installed Elevation, Add		55.16	
2306	For Over 40' Installed Elevation, Add		63.04	
3300	Copperbus duct, plug-in, indr, 3P 4W Elbows, 600 amp	EA	1,112.68	81.56
2301	For 14'-20' Installed Elevation, Add		17.73	
2302	For 21'-25' Installed Elevation, Add		35.46	
2303	For 26'-30' Installed Elevation, Add		44.33	
2304	For 31'-35' Installed Elevation, Add		53.19	
2305	For 36'-40' Installed Elevation, Add		62.06	
2306	For Over 40' Installed Elevation, Add		70.92	
3400	Copperbus duct, plug-in, indr, 3P 4W Elbows, 800 amp	EA	1,219.35	93.15
2301	For 14'-20' Installed Elevation, Add		20.26	
2302	For 21'-25' Installed Elevation, Add		40.53	
2303	For 26'-30' Installed Elevation, Add		50.66	
2304	For 31'-35' Installed Elevation, Add		60.79	
2305	For 36'-40' Installed Elevation, Add		70.92	
2306	For Over 40' Installed Elevation, Add		81.05	
3500	Copperbus duct, plug-in, indr, 3P 4W Elbows, 1000 amp	EA	1,351.14	102.55
2301	For 14'-20' Installed Elevation, Add		21.82	
2302	For 21'-25' Installed Elevation, Add		43.64	
2303	For 26'-30' Installed Elevation, Add		54.56	
2304	For 31'-35' Installed Elevation, Add		65.47	
2305	For 36'-40' Installed Elevation, Add		76.38	
2306	For Over 40' Installed Elevation, Add		87.29	
3600	Copperbus duct, plug-in, indr, 3P 4W Elbows, 1350 amp	EA	1,572.50	115.88
2301	For 14'-20' Installed Elevation, Add		23.62	
2302	For 21'-25' Installed Elevation, Add		47.25	
2303	For 26'-30' Installed Elevation, Add		59.06	
2304	For 31'-35' Installed Elevation, Add		70.87	
2305	For 36'-40' Installed Elevation, Add		82.68	
2306	For Over 40' Installed Elevation, Add		94.50	
3700	Copperbus duct, plug-in, indr, 3P 4W Elbows, 1600 amp	EA	1,710.35	116.03
2301	For 14'-20' Installed Elevation, Add		25.79	
2302	For 21'-25' Installed Elevation, Add		51.58	
2303	For 26'-30' Installed Elevation, Add		64.47	
2304	For 31'-35' Installed Elevation, Add		77.37	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2305	For 36'-40' Installed Elevation, Add		90.26	
2306	For Over 40' Installed Elevation, Add		103.16	
3800	Copperbus duct, plug-in, indr, 3P 4W, Elbows, 2000 amp	EA	2,116.52	141.88
2301	For 14'-20' Installed Elevation, Add		31.55	
2302	For 21'-25' Installed Elevation, Add		63.10	
2303	For 26'-30' Installed Elevation, Add		78.87	
2304	For 31'-35' Installed Elevation, Add		94.64	
2305	For 36'-40' Installed Elevation, Add		110.42	
2306	For Over 40' Installed Elevation, Add		126.19	
3810	Copperbus duct, plug-in, indr, 3P 4W, Elbows, 2500 amp	EA	3,172.36	160.63
2301	For 14'-20' Installed Elevation, Add		35.46	
2302	For 21'-25' Installed Elevation, Add		70.92	
2303	For 26'-30' Installed Elevation, Add		88.65	
2304	For 31'-35' Installed Elevation, Add		106.38	
2305	For 36'-40' Installed Elevation, Add		124.11	
2306	For Over 40' Installed Elevation, Add		141.84	
3820	Copperbus duct, plug-in, indr, 3P 4W, Elbows, 3000 amp	EA	3,687.81	186.45
2301	For 14'-20' Installed Elevation, Add		40.53	
2302	For 21'-25' Installed Elevation, Add		81.05	
2303	For 26'-30' Installed Elevation, Add		101.32	
2304	For 31'-35' Installed Elevation, Add		121.58	
2305	For 36'-40' Installed Elevation, Add		141.84	
2306	For Over 40' Installed Elevation, Add		162.10	
3830	Copperbus duct, plug-in, indr, 3P 4W, Elbows, 4000 amp	EA	4,713.97	217.44
2301	For 14'-20' Installed Elevation, Add		47.28	
2302	For 21'-25' Installed Elevation, Add		94.56	
2303	For 26'-30' Installed Elevation, Add		118.20	
2304	For 31'-35' Installed Elevation, Add		141.84	
2305	For 36'-40' Installed Elevation, Add		165.48	
2306	For Over 40' Installed Elevation, Add		189.12	
3840	Copperbus duct, plug-in, indr, 3P 4W, Elbows, 5000 amp	EA	7,393.90	243.96
2301	For 14'-20' Installed Elevation, Add		56.74	
2302	For 21'-25' Installed Elevation, Add		113.47	
2303	For 26'-30' Installed Elevation, Add		141.84	
2304	For 31'-35' Installed Elevation, Add		170.21	
2305	For 36'-40' Installed Elevation, Add		198.58	
2306	For Over 40' Installed Elevation, Add		226.94	
16423 3999	Indoor, 3 pole 4 wire, end box plug-in			
4000	Copperbus duct, 225 A, plug-in, indr, 3P 4W, End box	EA	143.34	7.70
2301	For 14'-20' Installed Elevation, Add		1.67	
2302	For 21'-25' Installed Elevation, Add		3.34	
2303	For 26'-30' Installed Elevation, Add		4.17	
2304	For 31'-35' Installed Elevation, Add		5.01	
2305	For 36'-40' Installed Elevation, Add		5.84	
2306	For Over 40' Installed Elevation, Add		6.68	
4100	Copperbus duct, 400 A, plug-in, indr, 3P 4W, End box	EA	144.40	8.69
2301	For 14'-20' Installed Elevation, Add		1.78	
2302	For 21'-25' Installed Elevation, Add		3.55	
2303	For 26'-30' Installed Elevation, Add		4.44	
2304	For 31'-35' Installed Elevation, Add		5.33	
2305	For 36'-40' Installed Elevation, Add		6.21	
2306	For Over 40' Installed Elevation, Add		7.10	
4200	Copperbus duct, 600 A, plug-in, indr, 3P 4W, End box	EA	146.89	9.11
2301	For 14'-20' Installed Elevation, Add		2.02	
2302	For 21'-25' Installed Elevation, Add		4.05	
2303	For 26'-30' Installed Elevation, Add		5.06	
2304	For 31'-35' Installed Elevation, Add		6.07	
2305	For 36'-40' Installed Elevation, Add		7.08	
2306	For Over 40' Installed Elevation, Add		8.10	
4300	Copperbus duct, 800 A, plug-in, indr, 3P 4W, End box	EA	148.31	9.82
2301	For 14'-20' Installed Elevation, Add		2.17	
2302	For 21'-25' Installed Elevation, Add		4.33	
2303	For 26'-30' Installed Elevation, Add		5.42	
2304	For 31'-35' Installed Elevation, Add		6.50	
2305	For 36'-40' Installed Elevation, Add		7.58	
2306	For Over 40' Installed Elevation, Add		8.66	
4400	Copperbus duct, 1000 A, plug-in, indr, 3P 4W, End box	EA	150.29	11.59
2301	For 14'-20' Installed Elevation, Add		2.36	
2302	For 21'-25' Installed Elevation, Add		4.73	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2303	For 26'-30' Installed Elevation, Add		5.91	
2304	For 31'-35' Installed Elevation, Add		7.09	
2305	For 36'-40' Installed Elevation, Add		8.27	
2306	For Over 40' Installed Elevation, Add		9.46	
4500	Copperbus duct, 1300 A, plug-in, indr, 3P 4W End box	EA	152.44	11.88
2301	For 14'-20' Installed Elevation, Add		2.58	
2302	For 21'-25' Installed Elevation, Add		5.16	
2303	For 26'-30' Installed Elevation, Add		6.45	
2304	For 31'-35' Installed Elevation, Add		7.74	
2305	For 36'-40' Installed Elevation, Add		9.03	
2306	For Over 40' Installed Elevation, Add		10.32	
4600	Copperbus duct, 1600 A, plug-in, indr, 3P 4W End box	EA	154.91	12.20
2301	For 14'-20' Installed Elevation, Add		2.83	
2302	For 21'-25' Installed Elevation, Add		5.65	
2303	For 26'-30' Installed Elevation, Add		7.07	
2304	For 31'-35' Installed Elevation, Add		8.48	
2305	For 36'-40' Installed Elevation, Add		9.89	
2306	For Over 40' Installed Elevation, Add		11.30	
4700	Copperbus duct, 2000 A, plug-in, indr, 3P 4W End box	EA	185.98	13.54
2301	For 14'-20' Installed Elevation, Add		3.14	
2302	For 21'-25' Installed Elevation, Add		6.29	
2303	For 26'-30' Installed Elevation, Add		7.86	
2304	For 31'-35' Installed Elevation, Add		9.43	
2305	For 36'-40' Installed Elevation, Add		11.00	
2306	For Over 40' Installed Elevation, Add		12.58	
4710	Copperbus duct, 2500 A, plug-in, indr, 3P 4W End box	EA	189.87	16.56
2301	For 14'-20' Installed Elevation, Add		3.53	
2302	For 21'-25' Installed Elevation, Add		7.07	
2303	For 26'-30' Installed Elevation, Add		8.83	
2304	For 31'-35' Installed Elevation, Add		10.60	
2305	For 36'-40' Installed Elevation, Add		12.37	
2306	For Over 40' Installed Elevation, Add		14.13	
4720	Copperbus duct, 3000 A, plug-in, indr, 3P 4W End box	EA	194.82	18.65
2301	For 14'-20' Installed Elevation, Add		4.03	
2302	For 21'-25' Installed Elevation, Add		8.06	
2303	For 26'-30' Installed Elevation, Add		10.07	
2304	For 31'-35' Installed Elevation, Add		12.08	
2305	For 36'-40' Installed Elevation, Add		14.10	
2306	For Over 40' Installed Elevation, Add		16.11	
4730	Copperbus duct, 4000 A, plug-in, indr, 3P 4W End box	EA	235.23	20.74
2301	For 14'-20' Installed Elevation, Add		4.70	
2302	For 21'-25' Installed Elevation, Add		9.40	
2303	For 26'-30' Installed Elevation, Add		11.75	
2304	For 31'-35' Installed Elevation, Add		14.10	
2305	For 36'-40' Installed Elevation, Add		16.45	
2306	For Over 40' Installed Elevation, Add		18.80	
4740	Copperbus duct, 5000 A, plug-in, indr, 3P 4W End box	EA	244.98	25.53
2301	For 14'-20' Installed Elevation, Add		5.67	
2302	For 21'-25' Installed Elevation, Add		11.35	
2303	For 26'-30' Installed Elevation, Add		14.19	
2304	For 31'-35' Installed Elevation, Add		17.02	
2305	For 36'-40' Installed Elevation, Add		19.86	
2306	For Over 40' Installed Elevation, Add		22.70	
16423 4799	Indoor, 3 pole 4 wire, cable tap box plug-in			
4800	Copper bus duct, 225 A, plug-in, indr, 3P 4W cable tap box end	EA	839.62	86.66
2301	For 14'-20' Installed Elevation, Add		17.73	
2302	For 21'-25' Installed Elevation, Add		35.46	
2303	For 26'-30' Installed Elevation, Add		44.33	
2304	For 31'-35' Installed Elevation, Add		53.19	
2305	For 36'-40' Installed Elevation, Add		62.06	
2306	For Over 40' Installed Elevation, Add		70.92	
5000	Copper bus duct, 400 A, plug-in, indr, 3P 4W cable tap box end	EA	1,008.36	96.24
2301	For 14'-20' Installed Elevation, Add		21.82	
2302	For 21'-25' Installed Elevation, Add		43.64	
2303	For 26'-30' Installed Elevation, Add		54.56	
2304	For 31'-35' Installed Elevation, Add		65.47	
2305	For 36'-40' Installed Elevation, Add		76.38	
2306	For Over 40' Installed Elevation, Add		87.29	
5100	Copper bus duct, 600 A, plug-in, indr, 3P 4W cable tap box end	EA	1,181.65	144.61

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	For 14'-20' Installed Elevation, Add		25.79	
2302	For 21'-25' Installed Elevation, Add		51.58	
2303	For 26'-30' Installed Elevation, Add		64.47	
2304	For 31'-35' Installed Elevation, Add		77.37	
2305	For 36'-40' Installed Elevation, Add		90.26	
2306	For Over 40' Installed Elevation, Add		103.16	
5200	Copper bus duct, 800 A, plug-in, indr, 3P 4W cable tap box end	EA	1,399.17	152.62
2301	For 14'-20' Installed Elevation, Add		28.37	
2302	For 21'-25' Installed Elevation, Add		56.74	
2303	For 26'-30' Installed Elevation, Add		70.92	
2304	For 31'-35' Installed Elevation, Add		85.10	
2305	For 36'-40' Installed Elevation, Add		99.29	
2306	For Over 40' Installed Elevation, Add		113.47	
5300	Copper bus duct, 1000 A, plug-in, indr, 3P 4W cable tap box end	EA	1,475.90	204.50
2301	For 14'-20' Installed Elevation, Add		35.46	
2302	For 21'-25' Installed Elevation, Add		70.92	
2303	For 26'-30' Installed Elevation, Add		88.65	
2304	For 31'-35' Installed Elevation, Add		106.38	
2305	For 36'-40' Installed Elevation, Add		124.11	
2306	For Over 40' Installed Elevation, Add		141.84	
5400	Copper bus duct, 1350 A, plug-in, indr, 3P 4W cable tap box end	EA	1,567.22	190.46
2301	For 14'-20' Installed Elevation, Add		40.53	
2302	For 21'-25' Installed Elevation, Add		81.05	
2303	For 26'-30' Installed Elevation, Add		101.32	
2304	For 31'-35' Installed Elevation, Add		121.58	
2305	For 36'-40' Installed Elevation, Add		141.84	
2306	For Over 40' Installed Elevation, Add		162.10	
16423 7199	Switches, 600 volt, 3 pole			
7200	Copper bus duct, 30 amp, plug-in, indr, plug-in switch,	EA	326.55	30.03
2301	For 14'-20' Installed Elevation, Add		7.09	
2302	For 21'-25' Installed Elevation, Add		14.18	
2303	For 26'-30' Installed Elevation, Add		17.73	
2304	For 31'-35' Installed Elevation, Add		21.28	
2305	For 36'-40' Installed Elevation, Add		24.82	
2306	For Over 40' Installed Elevation, Add		28.37	
7300	Copper bus duct, 60 amp, plug-in, indr, plug-in switch,	EA	353.02	29.93
2301	For 14'-20' Installed Elevation, Add		7.88	
2302	For 21'-25' Installed Elevation, Add		15.76	
2303	For 26'-30' Installed Elevation, Add		19.70	
2304	For 31'-35' Installed Elevation, Add		23.64	
2305	For 36'-40' Installed Elevation, Add		27.58	
2306	For Over 40' Installed Elevation, Add		31.52	
7400	Copper bus duct, 100 amp, plug-in, indr, plug-in switch,	EA	500.14	31.38
2301	For 14'-20' Installed Elevation, Add		10.51	
2302	For 21'-25' Installed Elevation, Add		21.01	
2303	For 26'-30' Installed Elevation, Add		26.27	
2304	For 31'-35' Installed Elevation, Add		31.52	
2305	For 36'-40' Installed Elevation, Add		36.77	
2306	For Over 40' Installed Elevation, Add		42.03	
7500	Copper bus duct, 200 amp, plug-in, indr, plug-in switch,	EA	874.48	67.09
2301	For 14'-20' Installed Elevation, Add		17.73	
2302	For 21'-25' Installed Elevation, Add		35.46	
2303	For 26'-30' Installed Elevation, Add		44.33	
2304	For 31'-35' Installed Elevation, Add		53.19	
2305	For 36'-40' Installed Elevation, Add		62.06	
2306	For Over 40' Installed Elevation, Add		70.92	
7600	Copper bus duct, 400 amp, plug-in, indr, plug-in switch,	EA	2,800.07	197.34
2301	For 14'-20' Installed Elevation, Add		40.53	
2302	For 21'-25' Installed Elevation, Add		81.05	
2303	For 26'-30' Installed Elevation, Add		101.32	
2304	For 31'-35' Installed Elevation, Add		121.58	
2305	For 36'-40' Installed Elevation, Add		141.84	
2306	For Over 40' Installed Elevation, Add		162.10	
7700	Copper bus duct, 600 amp, plug-in, indr, plug-in switch,	EA	4,061.08	364.67
2301	For 14'-20' Installed Elevation, Add		63.10	
2302	For 21'-25' Installed Elevation, Add		126.19	
2303	For 26'-30' Installed Elevation, Add		157.74	
2304	For 31'-35' Installed Elevation, Add		189.29	
2305	For 36'-40' Installed Elevation, Add		220.84	
2306	For Over 40' Installed Elevation, Add		252.38	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7800	Copper bus duct, 800 amp, plug-in, in dr, plug-in switch,	EA	6,812.51	478.64
2301	For 14'-20' Installed Elevation, Add		85.86	
2302	For 21'-25' Installed Elevation, Add		171.72	
2303	For 26'-30' Installed Elevation, Add		214.65	
2304	For 31'-35' Installed Elevation, Add		257.58	
2305	For 36'-40' Installed Elevation, Add		300.51	
2306	For Over 40' Installed Elevation, Add		343.44	
16424 0010	Copper bus duct			
16424 3279	3 pole, 3 wire, cable tap box center			
3280	Copper bus duct, 225 amp, 3 pole 3 wire, cable tap box center	EA	1,290.46	69.96
2301	For 14'-20' Installed Elevation, Add		15.76	
2302	For 21'-25' Installed Elevation, Add		31.52	
2303	For 26'-30' Installed Elevation, Add		39.40	
2304	Add 31'-35' Installed Elevation, Add		47.28	
2305	For 36'-40' Installed Elevation, Add		55.16	
2306	For Over 40' Installed Elevation, Add		63.04	
3290	Copper bus duct, 400 amp, 3 pole 3 wire, cable tap box center	EA	1,321.98	69.71
2301	For 14'-20' Installed Elevation, Add		18.91	
2302	For 21'-25' Installed Elevation, Add		37.82	
2303	For 26'-30' Installed Elevation, Add		47.28	
2304	Add 31'-35' Installed Elevation, Add		56.74	
2305	For 36'-40' Installed Elevation, Add		66.19	
2306	For Over 40' Installed Elevation, Add		75.65	
3300	Copper bus duct, 600 amp, 3 pole 3 wire, cable tap box center	EA	1,351.08	89.68
2301	For 14'-20' Installed Elevation, Add		21.82	
2302	For 21'-25' Installed Elevation, Add		43.64	
2303	For 26'-30' Installed Elevation, Add		54.56	
2304	Add 31'-35' Installed Elevation, Add		65.47	
2305	For 36'-40' Installed Elevation, Add		76.38	
2306	For Over 40' Installed Elevation, Add		87.29	
3310	Copper bus duct, 800 amp, 3 pole 3 wire, cable tap box center	EA	1,490.74	93.37
2301	For 14'-20' Installed Elevation, Add		23.64	
2302	For 21'-25' Installed Elevation, Add		47.28	
2303	For 26'-30' Installed Elevation, Add		59.10	
2304	Add 31'-35' Installed Elevation, Add		70.92	
2305	For 36'-40' Installed Elevation, Add		82.74	
2306	For Over 40' Installed Elevation, Add		94.56	
3320	Copper bus duct, 1000 amp, 3 pole 3 wire, cable tap box	EA	1,668.31	128.33
2301	For 14'-20' Installed Elevation, Add		31.52	
2302	For 21'-25' Installed Elevation, Add		63.04	
2303	For 26'-30' Installed Elevation, Add		78.80	
2304	Add 31'-35' Installed Elevation, Add		94.56	
2305	For 36'-40' Installed Elevation, Add		110.32	
2306	For Over 40' Installed Elevation, Add		126.08	
3330	Copper bus duct, 1350 amp, 3 pole 3 wire, cable tap box	EA	2,070.18	145.56
2301	For 14'-20' Installed Elevation, Add		35.46	
2302	For 21'-25' Installed Elevation, Add		70.92	
2303	For 26'-30' Installed Elevation, Add		88.65	
2304	Add 31'-35' Installed Elevation, Add		106.38	
2305	For 36'-40' Installed Elevation, Add		124.11	
2306	For Over 40' Installed Elevation, Add		141.84	
16424 4599	Plugs, fusible			
16424 4599	3 pole 250 volt			
4600	Copper bus duct, plugs, fusible, 3 pole 250 volt, 30 amp	EA	328.70	28.79
2301	For 14'-20' Installed Elevation, Add		7.09	
2302	For 21'-25' Installed Elevation, Add		14.18	
2303	For 26'-30' Installed Elevation, Add		17.73	
2304	Add 31'-35' Installed Elevation, Add		21.28	
2305	For 36'-40' Installed Elevation, Add		24.82	
2306	For Over 40' Installed Elevation, Add		28.37	
4610	Copper bus duct, plugs, fusible, 3 pole 250 volt, 60 amp	EA	374.11	30.03
2301	For 14'-20' Installed Elevation, Add		7.88	
2302	For 21'-25' Installed Elevation, Add		15.76	
2303	For 26'-30' Installed Elevation, Add		19.70	
2304	Add 31'-35' Installed Elevation, Add		23.64	
2305	For 36'-40' Installed Elevation, Add		27.58	
2306	For Over 40' Installed Elevation, Add		31.52	
4620	Copper bus duct, plugs, fusible, 3 pole 250 volt, 100 amp	EA	500.14	34.65

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	For 14' - 20' Installed Elevation, Add		10.51	
2302	For 21' - 25' Installed Elevation, Add		21.01	
2303	For 26' - 30' Installed Elevation, Add		26.27	
2304	Add 31' - 35' Installed Elevation, Add		31.52	
2305	For 36' - 40' Installed Elevation, Add		36.77	
2306	For Over 40' Installed Elevation, Add		42.03	
4630	Copper bus duct, plugs, fusible, 3 pole 250 volt, 200 amp	EA	898.30	74.04
2301	For 14' - 20' Installed Elevation, Add		17.73	
2302	For 21' - 25' Installed Elevation, Add		35.46	
2303	For 26' - 30' Installed Elevation, Add		44.33	
2304	Add 31' - 35' Installed Elevation, Add		53.19	
2305	For 36' - 40' Installed Elevation, Add		62.06	
2306	For Over 40' Installed Elevation, Add		70.92	
4640	Copper bus duct, plugs, fusible, 3 pole 250 volt, 400 amp	EA	2,375.66	173.05
2301	For 14' - 20' Installed Elevation, Add		40.53	
2302	For 21' - 25' Installed Elevation, Add		81.05	
2303	For 26' - 30' Installed Elevation, Add		101.32	
2304	Add 31' - 35' Installed Elevation, Add		121.58	
2305	For 36' - 40' Installed Elevation, Add		141.84	
2306	For Over 40' Installed Elevation, Add		162.10	
4650	Copper bus duct, plugs, fusible, 3 pole 250 volt, 600 amp	EA	3,396.44	290.95
2301	For 14' - 20' Installed Elevation, Add		63.10	
2302	For 21' - 25' Installed Elevation, Add		126.19	
2303	For 26' - 30' Installed Elevation, Add		157.74	
2304	Add 31' - 35' Installed Elevation, Add		189.29	
2305	For 36' - 40' Installed Elevation, Add		220.84	
2306	For Over 40' Installed Elevation, Add		252.38	
16424 4699	4 pole 120/208 volt			
4700	Copper bus duct, 30 amp, plugs, fusible, 4 pole 120/208 volt	EA	379.91	37.34
2301	For 14' - 20' Installed Elevation, Add		7.27	
2302	For 21' - 25' Installed Elevation, Add		14.55	
2303	For 26' - 30' Installed Elevation, Add		18.19	
2304	Add 31' - 35' Installed Elevation, Add		21.82	
2305	For 36' - 40' Installed Elevation, Add		25.46	
2306	For Over 40' Installed Elevation, Add		29.10	
4710	Copper bus duct, 60 amp, plugs, fusible, 4 pole 120/208 volt	EA	419.82	38.72
2301	For 14' - 20' Installed Elevation, Add		8.11	
2302	For 21' - 25' Installed Elevation, Add		16.21	
2303	For 26' - 30' Installed Elevation, Add		20.26	
2304	Add 31' - 35' Installed Elevation, Add		24.32	
2305	For 36' - 40' Installed Elevation, Add		28.37	
2306	For Over 40' Installed Elevation, Add		32.42	
4720	Copper bus duct, 100 amp, plugs, fusible, 4 pole 120/208 volt	EA	572.33	39.01
2301	For 14' - 20' Installed Elevation, Add		10.91	
2302	For 21' - 25' Installed Elevation, Add		21.82	
2303	For 26' - 30' Installed Elevation, Add		27.28	
2304	Add 31' - 35' Installed Elevation, Add		32.73	
2305	For 36' - 40' Installed Elevation, Add		38.19	
2306	For Over 40' Installed Elevation, Add		43.64	
4730	Copper bus duct, 200 amp, plugs, fusible, 4 pole 120/208 volt	EA	901.23	75.14
2301	For 14' - 20' Installed Elevation, Add		18.91	
2302	For 21' - 25' Installed Elevation, Add		37.82	
2303	For 26' - 30' Installed Elevation, Add		47.28	
2304	Add 31' - 35' Installed Elevation, Add		56.74	
2305	For 36' - 40' Installed Elevation, Add		66.19	
2306	For Over 40' Installed Elevation, Add		75.65	
4740	Copper bus duct, 400 amp, plugs, fusible, 4 pole 120/208 volt	EA	2,535.50	187.48
2301	For 14' - 20' Installed Elevation, Add		43.67	
2302	For 21' - 25' Installed Elevation, Add		87.34	
2303	For 26' - 30' Installed Elevation, Add		109.18	
2304	Add 31' - 35' Installed Elevation, Add		131.01	
2305	For 36' - 40' Installed Elevation, Add		152.85	
2306	For Over 40' Installed Elevation, Add		174.68	
4750	Copper bus duct, 600 amp, plugs, fusible, 4 pole 120/208 volt	EA	3,514.18	273.96
2301	For 14' - 20' Installed Elevation, Add		70.92	
2302	For 21' - 25' Installed Elevation, Add		141.84	
2303	For 26' - 30' Installed Elevation, Add		177.30	
2304	Add 31' - 35' Installed Elevation, Add		212.76	
2305	For 36' - 40' Installed Elevation, Add		248.22	
2306	For Over 40' Installed Elevation, Add		283.68	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16424 4899	4 pole 277/480 volt			
4900	Copper bus duct, 30 amp, plugs, fusible, 4 pole 277/480 volt	EA	402.62	38.26
2301	For 14'-20' Installed Elevation, Add		7.27	
2302	For 21'-25' Installed Elevation, Add		14.55	
2303	For 26'-30' Installed Elevation, Add		18.19	
2304	Add 31'-35' Installed Elevation, Add		21.82	
2305	For 36'-40' Installed Elevation, Add		25.46	
2306	For Over 40' Installed Elevation, Add		29.10	
4910	Copper bus duct, 60 amp, plugs, fusible, 4 pole 277/480 volt	EA	421.80	31.95
2301	For 14'-20' Installed Elevation, Add		8.11	
2302	For 21'-25' Installed Elevation, Add		16.21	
2303	For 26'-30' Installed Elevation, Add		20.26	
2304	Add 31'-35' Installed Elevation, Add		24.32	
2305	For 36'-40' Installed Elevation, Add		28.37	
2306	For Over 40' Installed Elevation, Add		32.42	
4920	Copper bus duct, 100 amp, plugs, fusible, 4 pole 277/480 volt	EA	624.67	45.96
2301	For 14'-20' Installed Elevation, Add		10.91	
2302	For 21'-25' Installed Elevation, Add		21.82	
2303	For 26'-30' Installed Elevation, Add		27.28	
2304	Add 31'-35' Installed Elevation, Add		32.73	
2305	For 36'-40' Installed Elevation, Add		38.19	
2306	For Over 40' Installed Elevation, Add		43.64	
4930	Copper bus duct, 200 amp, plugs, fusible, 4 pole 277/480 volt	EA	1,033.58	82.66
2301	For 14'-20' Installed Elevation, Add		18.91	
2302	For 21'-25' Installed Elevation, Add		37.82	
2303	For 26'-30' Installed Elevation, Add		47.28	
2304	Add 31'-35' Installed Elevation, Add		56.74	
2305	For 36'-40' Installed Elevation, Add		66.19	
2306	For Over 40' Installed Elevation, Add		75.65	
4940	Copper bus duct, 400 amp, plugs, fusible, 4 pole 277/480 volt	EA	2,486.11	183.79
2301	For 14'-20' Installed Elevation, Add		43.67	
2302	For 21'-25' Installed Elevation, Add		87.34	
2303	For 26'-30' Installed Elevation, Add		109.18	
2304	Add 31'-35' Installed Elevation, Add		131.01	
2305	For 36'-40' Installed Elevation, Add		152.85	
2306	For Over 40' Installed Elevation, Add		174.68	
4950	Copper bus duct, 600 amp, plugs, fusible, 4 pole 277/480 volt	EA	3,696.90	288.36
2301	For 14'-20' Installed Elevation, Add		70.92	
2302	For 21'-25' Installed Elevation, Add		141.84	
2303	For 26'-30' Installed Elevation, Add		177.30	
2304	Add 31'-35' Installed Elevation, Add		212.76	
2305	For 36'-40' Installed Elevation, Add		248.22	
2306	For Over 40' Installed Elevation, Add		283.68	
5050	Copper bus duct, 800 amp, plugs, fusible, 4 pole 277/480 volt	EA	10,335.72	671.54
2301	For 14'-20' Installed Elevation, Add		94.56	
2302	For 21'-25' Installed Elevation, Add		189.12	
2303	For 26'-30' Installed Elevation, Add		236.40	
2304	Add 31'-35' Installed Elevation, Add		283.68	
2305	For 36'-40' Installed Elevation, Add		330.96	
2306	For Over 40' Installed Elevation, Add		378.24	
16424 5599	Circuit breaker			
16424 5599	3 pole 250 volt			
5600	Copper bus duct, 60 amp, plugs, circuit breaker, 3 pole 250 volt	EA	447.24	39.22
2301	For 14'-20' Installed Elevation, Add		6.30	
2302	For 21'-25' Installed Elevation, Add		12.61	
2303	For 26'-30' Installed Elevation, Add		15.76	
2304	Add 31'-35' Installed Elevation, Add		18.91	
2305	For 36'-40' Installed Elevation, Add		22.06	
2306	For Over 40' Installed Elevation, Add		25.22	
5610	Copper bus duct, 100 amp, plugs, circuit breaker, 3 pole 250 volt	EA	559.77	24.15
2301	For 14'-20' Installed Elevation, Add		8.87	
2302	For 21'-25' Installed Elevation, Add		17.73	
2303	For 26'-30' Installed Elevation, Add		22.16	
2304	Add 31'-35' Installed Elevation, Add		26.60	
2305	For 36'-40' Installed Elevation, Add		31.03	
2306	For Over 40' Installed Elevation, Add		35.46	
16424 5619	3 pole 600 volt			
5620	Copper bus duct, 60 amp, plugs, circuit breaker, 3 pole, 600	EA	605.27	26.74

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	For 14' - 20' Installed Elevation, Add		6.30	
2302	For 21' - 25' Installed Elevation, Add		12.61	
2303	For 26' - 30' Installed Elevation, Add		15.76	
2304	Add 31' - 35' Installed Elevation, Add		18.91	
2305	For 36' - 40' Installed Elevation, Add		22.06	
2306	For Over 40' Installed Elevation, Add		25.22	
5630	Copper bus duct, 100 amp, plugs, circuit breaker, 3 pole, 600	EA	690.14	23.51
2301	For 14' - 20' Installed Elevation, Add		8.87	
2302	For 21' - 25' Installed Elevation, Add		17.73	
2303	For 26' - 30' Installed Elevation, Add		22.16	
2304	Add 31' - 35' Installed Elevation, Add		26.60	
2305	For 36' - 40' Installed Elevation, Add		31.03	
2306	For Over 40' Installed Elevation, Add		35.46	
16424 5649	4 pole 120/208 volt			
5650	Copper bus duct, 4 pole 120/208 volt, 60 amp, plugs, circuit	EA	498.06	45.56
2301	For 14' - 20' Installed Elevation, Add		6.45	
2302	For 21' - 25' Installed Elevation, Add		12.89	
2303	For 26' - 30' Installed Elevation, Add		16.12	
2304	Add 31' - 35' Installed Elevation, Add		19.34	
2305	For 36' - 40' Installed Elevation, Add		22.56	
2306	For Over 40' Installed Elevation, Add		25.79	
5660	Copper bus duct, 4 pole 120/208 volt, 100 amp, plugs, circuit	EA	606.09	46.49
2301	For 14' - 20' Installed Elevation, Add		9.15	
2302	For 21' - 25' Installed Elevation, Add		18.30	
2303	For 26' - 30' Installed Elevation, Add		22.88	
2304	Add 31' - 35' Installed Elevation, Add		27.45	
2305	For 36' - 40' Installed Elevation, Add		32.03	
2306	For Over 40' Installed Elevation, Add		36.60	
16424 5699	3 pole 277/480 volt			
5700	Copper bus duct, 60 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	650.67	51.66
2301	For 14' - 20' Installed Elevation, Add		6.60	
2302	For 21' - 25' Installed Elevation, Add		13.19	
2303	For 26' - 30' Installed Elevation, Add		16.49	
2304	Add 31' - 35' Installed Elevation, Add		19.79	
2305	For 36' - 40' Installed Elevation, Add		23.09	
2306	For Over 40' Installed Elevation, Add		26.39	
5710	Copper bus duct, 100 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	859.13	43.90
2301	For 14' - 20' Installed Elevation, Add		9.46	
2302	For 21' - 25' Installed Elevation, Add		18.91	
2303	For 26' - 30' Installed Elevation, Add		23.64	
2304	Add 31' - 35' Installed Elevation, Add		28.37	
2305	For 36' - 40' Installed Elevation, Add		33.10	
2306	For Over 40' Installed Elevation, Add		37.82	
5720	Copper bus duct, 225 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	1,618.31	125.99
2301	For 14' - 20' Installed Elevation, Add		17.73	
2302	For 21' - 25' Installed Elevation, Add		35.46	
2303	For 26' - 30' Installed Elevation, Add		44.33	
2304	Add 31' - 35' Installed Elevation, Add		53.19	
2305	For 36' - 40' Installed Elevation, Add		62.06	
2306	For Over 40' Installed Elevation, Add		70.92	
5730	Copper bus duct, 400 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	3,463.46	178.54
2301	For 14' - 20' Installed Elevation, Add		47.28	
2302	For 21' - 25' Installed Elevation, Add		94.56	
2303	For 26' - 30' Installed Elevation, Add		118.20	
2304	Add 31' - 35' Installed Elevation, Add		141.84	
2305	For 36' - 40' Installed Elevation, Add		165.48	
2306	For Over 40' Installed Elevation, Add		189.12	
5740	Copper bus duct, 600 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	4,610.82	423.82
2301	For 14' - 20' Installed Elevation, Add		59.10	
2302	For 21' - 25' Installed Elevation, Add		118.20	
2303	For 26' - 30' Installed Elevation, Add		147.75	
2304	Add 31' - 35' Installed Elevation, Add		177.30	
2305	For 36' - 40' Installed Elevation, Add		206.85	
2306	For Over 40' Installed Elevation, Add		236.40	
5760	Copper bus duct, 800 amp, plugs, ckt brkr, 3P, 4 wire 277/480	EA	6,038.02	674.84
2301	For 14' - 20' Installed Elevation, Add		94.56	
2302	For 21' - 25' Installed Elevation, Add		189.12	
2303	For 26' - 30' Installed Elevation, Add		236.40	
2304	Add 31' - 35' Installed Elevation, Add		283.68	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2305	For 36'-40' Installed Elevation, Add		330.96	
2306	For Over 40' Installed Elevation, Add		378.24	
16427 0010	Copper bus duct with fittings & support			
16427 0099	3 pole, 3 wire, plug-in type			
0100	Cu bus duct w/ fitting & support, 225 amp, 3P, 3W	LF	188.33	11.70
2301	For 14'-20' Installed Elevation, Add		2.10	
2302	For 21'-25' Installed Elevation, Add		4.20	
2303	For 26'-30' Installed Elevation, Add		5.25	
2304	For 31'-35' Installed Elevation, Add		6.30	
2305	For 36'-40' Installed Elevation, Add		7.35	
2306	For Over 40' Installed Elevation, Add		8.40	
0110	Cu bus duct w/ fitting & support, 400 amp, 3P, 3W	LF	190.96	13.12
2301	For 14'-20' Installed Elevation, Add		2.36	
2302	For 21'-25' Installed Elevation, Add		4.73	
2303	For 26'-30' Installed Elevation, Add		5.91	
2304	For 31'-35' Installed Elevation, Add		7.09	
2305	For 36'-40' Installed Elevation, Add		8.27	
2306	For Over 40' Installed Elevation, Add		9.46	
0120	Cu bus duct w/ fitting & support, 600 amp, 3P, 3W	LF	194.34	13.97
2301	For 14'-20' Installed Elevation, Add		2.70	
2302	For 21'-25' Installed Elevation, Add		5.40	
2303	For 26'-30' Installed Elevation, Add		6.76	
2304	For 31'-35' Installed Elevation, Add		8.11	
2305	For 36'-40' Installed Elevation, Add		9.46	
2306	For Over 40' Installed Elevation, Add		10.81	
0130	Cu bus duct w/ fitting & support, 800 amp, 3P, 3W	LF	228.56	11.77
2301	For 14'-20' Installed Elevation, Add		2.99	
2302	For 21'-25' Installed Elevation, Add		5.97	
2303	For 26'-30' Installed Elevation, Add		7.47	
2304	For 31'-35' Installed Elevation, Add		8.96	
2305	For 36'-40' Installed Elevation, Add		10.45	
2306	For Over 40' Installed Elevation, Add		11.94	
0140	Cu bus duct w/ fitting & support, 1000 amp, 3P, 3W	LF	252.98	15.46
2301	For 14'-20' Installed Elevation, Add		3.34	
2302	For 21'-25' Installed Elevation, Add		6.67	
2303	For 26'-30' Installed Elevation, Add		8.34	
2304	For 31'-35' Installed Elevation, Add		10.01	
2305	For 36'-40' Installed Elevation, Add		11.68	
2306	For Over 40' Installed Elevation, Add		13.35	
0150	Cu bus duct w/ fitting & support, 1350 amp, 3P, 3W	LF	349.19	15.25
2301	For 14'-20' Installed Elevation, Add		3.55	
2302	For 21'-25' Installed Elevation, Add		7.09	
2303	For 26'-30' Installed Elevation, Add		8.87	
2304	For 31'-35' Installed Elevation, Add		10.64	
2305	For 36'-40' Installed Elevation, Add		12.41	
2306	For Over 40' Installed Elevation, Add		14.18	
16427 1099	3 pole, 4 wire, plug-in type Copper Conductors			
1100	Cu bus duct w/ fitting & support, 225 amp, 3P, 4W	LF	228.71	13.40
2301	For 14'-20' Installed Elevation, Add		1.96	
2302	For 21'-25' Installed Elevation, Add		3.91	
2303	For 26'-30' Installed Elevation, Add		4.89	
2304	For 31'-35' Installed Elevation, Add		5.87	
2305	For 36'-40' Installed Elevation, Add		6.85	
2306	For Over 40' Installed Elevation, Add		7.82	
1110	Cu bus duct w/ fitting & support, 400 amp, 3P, 4W	LF	231.84	9.36
2301	For 14'-20' Installed Elevation, Add		2.27	
2302	For 21'-25' Installed Elevation, Add		4.54	
2303	For 26'-30' Installed Elevation, Add		5.67	
2304	For 31'-35' Installed Elevation, Add		6.81	
2305	For 36'-40' Installed Elevation, Add		7.94	
2306	For Over 40' Installed Elevation, Add		9.08	
1120	Cu bus duct w/ fitting & support, 600 amp, 3P, 4W	LF	234.94	11.17
2301	For 14'-20' Installed Elevation, Add		2.58	
2302	For 21'-25' Installed Elevation, Add		5.16	
2303	For 26'-30' Installed Elevation, Add		6.45	
2304	For 31'-35' Installed Elevation, Add		7.74	
2305	For 36'-40' Installed Elevation, Add		9.03	
2306	For Over 40' Installed Elevation, Add		10.32	
1130	Cu bus duct w/ fitting & support, 800 amp, 3P, 4W	LF	279.35	10.39

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2301	For 14' - 20' Installed Elevation, Add		2.84	
2302	For 21' - 25' Installed Elevation, Add		5.67	
2303	For 26' - 30' Installed Elevation, Add		7.09	
2304	For 31' - 35' Installed Elevation, Add		8.51	
2305	For 36' - 40' Installed Elevation, Add		9.93	
2306	For Over 40' Installed Elevation, Add		11.35	
1140	Cu bus duct w/ fitting & support, 1000 amp, 3P, 4W	LF	345.25	13.16
2301	For 14' - 20' Installed Elevation, Add		3.15	
2302	For 21' - 25' Installed Elevation, Add		6.30	
2303	For 26' - 30' Installed Elevation, Add		7.88	
2304	For 31' - 35' Installed Elevation, Add		9.46	
2305	For 36' - 40' Installed Elevation, Add		11.03	
2306	For Over 40' Installed Elevation, Add		12.61	
1150	Cu bus duct w/ fitting & support, 1350 amp, 3P, 4W	LF	451.68	13.22
2301	For 14' - 20' Installed Elevation, Add		3.34	
2302	For 21' - 25' Installed Elevation, Add		6.67	
2303	For 26' - 30' Installed Elevation, Add		8.34	
2304	For 31' - 35' Installed Elevation, Add		10.01	
2305	For 36' - 40' Installed Elevation, Add		11.68	
2306	For Over 40' Installed Elevation, Add		13.35	
1160	Cu bus duct w/ fitting & support, 1600 amp, 3P, 4W	LF	518.87	14.36
2301	For 14' - 20' Installed Elevation, Add		3.78	
2302	For 21' - 25' Installed Elevation, Add		7.56	
2303	For 26' - 30' Installed Elevation, Add		9.46	
2304	For 31' - 35' Installed Elevation, Add		11.35	
2305	For 36' - 40' Installed Elevation, Add		13.24	
2306	For Over 40' Installed Elevation, Add		15.13	
16427 2099 3 pole, 3 wire, feeder type Low Impedance, Copper Conductors				
2100	Cu bus duct w/ fitting & support, 800 amp, 3P, 3W feeder	LF	275.65	12.30
2301	For 14' - 20' Installed Elevation, Add		2.47	
2302	For 21' - 25' Installed Elevation, Add		4.93	
2303	For 26' - 30' Installed Elevation, Add		6.17	
2304	For 31' - 35' Installed Elevation, Add		7.40	
2305	For 36' - 40' Installed Elevation, Add		8.63	
2306	For Over 40' Installed Elevation, Add		9.87	
2110	Cu bus duct w/ fitting & support, 1000 amp, 3P, 3W	LF	288.46	12.73
2301	For 14' - 20' Installed Elevation, Add		2.70	
2302	For 21' - 25' Installed Elevation, Add		5.40	
2303	For 26' - 30' Installed Elevation, Add		6.76	
2304	For 31' - 35' Installed Elevation, Add		8.11	
2305	For 36' - 40' Installed Elevation, Add		9.46	
2306	For Over 40' Installed Elevation, Add		10.81	
2120	Cu bus duct w/ fitting & support, 1350 amp, 3P, 3W	LF	343.59	11.52
2301	For 14' - 20' Installed Elevation, Add		2.99	
2302	For 21' - 25' Installed Elevation, Add		5.97	
2303	For 26' - 30' Installed Elevation, Add		7.47	
2304	For 31' - 35' Installed Elevation, Add		8.96	
2305	For 36' - 40' Installed Elevation, Add		10.45	
2306	For Over 40' Installed Elevation, Add		11.94	
2130	Cu bus duct w/ fitting & support, 1600 amp, 3P, 3W	LF	387.08	10.78
2301	For 14' - 20' Installed Elevation, Add		3.15	
2302	For 21' - 25' Installed Elevation, Add		6.30	
2303	For 26' - 30' Installed Elevation, Add		7.88	
2304	For 31' - 35' Installed Elevation, Add		9.46	
2305	For 36' - 40' Installed Elevation, Add		11.03	
2306	For Over 40' Installed Elevation, Add		12.61	
2140	Cu bus duct w/ fitting & support, 2000 amp, 3P, 3W	LF	487.50	11.10
2301	For 14' - 20' Installed Elevation, Add		3.78	
2302	For 21' - 25' Installed Elevation, Add		7.56	
2303	For 26' - 30' Installed Elevation, Add		9.46	
2304	For 31' - 35' Installed Elevation, Add		11.35	
2305	For 36' - 40' Installed Elevation, Add		13.24	
2306	For Over 40' Installed Elevation, Add		15.13	
2150	Cu bus duct w/ fitting & support, 3000 amp, 3P, 3W	LF	720.87	28.65
2301	For 14' - 20' Installed Elevation, Add		5.16	
2302	For 21' - 25' Installed Elevation, Add		10.32	
2303	For 26' - 30' Installed Elevation, Add		12.90	
2304	For 31' - 35' Installed Elevation, Add		15.47	
2305	For 36' - 40' Installed Elevation, Add		18.05	
2306	For Over 40' Installed Elevation, Add		20.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2160	Cu bus duct w/ fitting & support, 4000 amp, 3P, 3W	LF	941.49	27.02
2301	For 14'-20' Installed Elevation, Add		6.30	
2302	For 21'-25' Installed Elevation, Add		12.61	
2303	For 26'-30' Installed Elevation, Add		15.76	
2304	For 31'-35' Installed Elevation, Add		18.91	
2305	For 36'-40' Installed Elevation, Add		22.06	
2306	For Over 40' Installed Elevation, Add		25.22	
2170	Cu bus duct w/ fitting & support, 5000 amp, 3P, 3W	LF	1,142.33	27.73
2301	For 14'-20' Installed Elevation, Add		7.57	
2302	For 21'-25' Installed Elevation, Add		15.13	
2303	For 26'-30' Installed Elevation, Add		18.91	
2304	For 31'-35' Installed Elevation, Add		22.70	
2305	For 36'-40' Installed Elevation, Add		26.48	
2306	For Over 40' Installed Elevation, Add		30.26	
2180	Cu bus duct w/ fitting & support, 6000 amp, 3P, 3W	LF	1,553.69	30.60
2301	For 14'-20' Installed Elevation, Add		8.73	
2302	For 21'-25' Installed Elevation, Add		17.46	
2303	For 26'-30' Installed Elevation, Add		21.82	
2304	For 31'-35' Installed Elevation, Add		26.19	
2305	For 36'-40' Installed Elevation, Add		30.55	
2306	For Over 40' Installed Elevation, Add		34.92	
16427 2199 3 pole, 4 wire, feeder type Ventilated, Low Impedance, Copper Conductors				
2200	Cu bus duct w/ fitting & support, 800 amp, 3P, 4W feeder	LF	312.84	13.01
2301	For 14'-20' Installed Elevation, Add		2.47	
2302	For 21'-25' Installed Elevation, Add		4.93	
2303	For 26'-30' Installed Elevation, Add		6.17	
2304	For 31'-35' Installed Elevation, Add		7.40	
2305	For 36'-40' Installed Elevation, Add		8.63	
2306	For Over 40' Installed Elevation, Add		9.87	
2210	Cu bus duct w/ fitting & support, 1000 amp, 3P, 4W	LF	383.93	15.78
2301	For 14'-20' Installed Elevation, Add		2.84	
2302	For 21'-25' Installed Elevation, Add		5.67	
2303	For 26'-30' Installed Elevation, Add		7.09	
2304	For 31'-35' Installed Elevation, Add		8.51	
2305	For 36'-40' Installed Elevation, Add		9.93	
2306	For Over 40' Installed Elevation, Add		11.35	
2220	Cu bus duct w/ fitting & support, 1350 amp, 3P, 4W	LF	512.57	16.31
2301	For 14'-20' Installed Elevation, Add		3.15	
2302	For 21'-25' Installed Elevation, Add		6.30	
2303	For 26'-30' Installed Elevation, Add		7.88	
2304	For 31'-35' Installed Elevation, Add		9.46	
2305	For 36'-40' Installed Elevation, Add		11.03	
2306	For Over 40' Installed Elevation, Add		12.61	
2230	Cu bus duct w/ fitting & support, 1600 amp, 3P, 4W	LF	586.27	15.74
2301	For 14'-20' Installed Elevation, Add		3.78	
2302	For 21'-25' Installed Elevation, Add		7.56	
2303	For 26'-30' Installed Elevation, Add		9.46	
2304	For 31'-35' Installed Elevation, Add		11.35	
2305	For 36'-40' Installed Elevation, Add		13.24	
2306	For Over 40' Installed Elevation, Add		15.13	
2240	Cu bus duct w/ fitting & support, 2000 amp, 3P, 4W	LF	639.73	14.18
2301	For 14'-20' Installed Elevation, Add		4.36	
2302	For 21'-25' Installed Elevation, Add		8.73	
2303	For 26'-30' Installed Elevation, Add		10.91	
2304	For 31'-35' Installed Elevation, Add		13.09	
2305	For 36'-40' Installed Elevation, Add		15.27	
2306	For Over 40' Installed Elevation, Add		17.46	
2250	Cu bus duct w/ fitting & support, 3000 amp, 3P, 4W	LF	977.02	24.08
2301	For 14'-20' Installed Elevation, Add		5.67	
2302	For 21'-25' Installed Elevation, Add		11.35	
2303	For 26'-30' Installed Elevation, Add		14.19	
2304	For 31'-35' Installed Elevation, Add		17.02	
2305	For 36'-40' Installed Elevation, Add		19.86	
2306	For Over 40' Installed Elevation, Add		22.70	
2260	Cu bus duct w/ fitting & support, 4000 amp, 3P, 4W	LF	1,284.01	25.25
2301	For 14'-20' Installed Elevation, Add		7.09	
2302	For 21'-25' Installed Elevation, Add		14.18	
2303	For 26'-30' Installed Elevation, Add		17.73	
2304	For 31'-35' Installed Elevation, Add		21.28	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2305	For 36'-40' Installed Elevation, Add		24.82	
2306	For Over 40' Installed Elevation, Add		28.37	
2270	Cu bus duct w/ fitting & support, 5000 amp, 3P, 4W	LF	1,540.91	47.55
2301	For 14'-20' Installed Elevation, Add		8.73	
2302	For 21'-25' Installed Elevation, Add		17.46	
2303	For 26'-30' Installed Elevation, Add		21.82	
2304	For 31'-35' Installed Elevation, Add		26.19	
2305	For 36'-40' Installed Elevation, Add		30.55	
2306	For Over 40' Installed Elevation, Add		34.92	
2280	Cu bus duct w/ fitting & support, 6000 amp, 3P, 4W	LF	2,044.11	51.10
2301	For 14'-20' Installed Elevation, Add		10.13	
2302	For 21'-25' Installed Elevation, Add		20.26	
2303	For 26'-30' Installed Elevation, Add		25.33	
2304	For 31'-35' Installed Elevation, Add		30.39	
2305	For 36'-40' Installed Elevation, Add		35.46	
2306	For Over 40' Installed Elevation, Add		40.52	

16428 Enclosed Transfer Switch

16428 1000 2 Pole 600V W Switched Neutral, Solid State Con

1001	30A Xfer Sw, 2P	EA	3,248.83	
1002	70A Xfer Sw, 2P	EA	4,036.61	
1003	100A Xfer Sw, 2P	EA	4,817.01	
1004	150A Xfer Sw, 2P	EA	6,172.61	
1005	260A Xfer Sw, 2P	EA	6,258.22	
1006	400A Xfer Sw, 2P	EA	10,187.84	

16428 2000 2 Pole 600V W Switched Neutral, Solid State Con

2001	30A Xfer Sw, 2P	EA	3,722.25	
2002	70A Xfer Sw, 2P	EA	4,626.05	
2003	100A Xfer Sw, 2P	EA	5,523.51	
2004	150A Xfer Sw, 2P	EA	7,081.39	
2005	260A Xfer Sw, 2P	EA	7,167.00	
2006	400A Xfer Sw, 2P	EA	11,686.06	

16428 3000 3 Pole 600V W Switched Neutral, Solid State Con

3001	30A Xfer Sw, 3P	EA	3,762.17	
3002	70A Xfer Sw, 3P	EA	4,542.67	
3003	100A Xfer Sw, 3P	EA	5,456.42	
3004	150A Xfer Sw, 3P	EA	7,318.98	
3005	260A Xfer Sw, 3P	EA	10,476.53	
3006	400A Xfer Sw, 3P	EA	12,478.57	
3007	600A Xfer Sw, 3P	EA	18,974.92	
3008	800A Xfer Sw, 3P	EA	23,097.95	

16428 4000 3 Pole 600V W Switched Neutral, Solid State Con

4001	30A Xfer Sw, 3P	EA	4,127.70	
4002	70A Xfer Sw, 3P	EA	4,986.24	
4003	100A Xfer Sw, 3P	EA	5,988.50	
4004	150A Xfer Sw, 3P	EA	8,033.77	
4005	260A Xfer Sw, 3P	EA	11,499.20	
4006	400A Xfer Sw, 3P	EA	13,701.43	
4007	600A Xfer Sw, 3P	EA	20,831.08	
4008	800A Xfer Sw, 3P	EA	25,366.38	

16428 5000 3 Pole 600V W Bypass Isolation Switch, Switched

5004	150A Xfer Sw, 3P	EA	7,376.89	
5005	260A Xfer Sw, 3P	EA	10,534.44	
5006	400A Xfer Sw, 3P	EA	12,536.48	
5007	600A Xfer Sw, 3P	EA	19,032.83	
5008	800A Xfer Sw, 3P	EA	23,155.86	
5009	1200A Xfer Sw, 3P	EA	28,239.82	
5011	2000A Xfer Sw, 3P	EA	34,459.57	

16428 6000 3 Pole 600V W Bypass Isolation Switch, Switched

6004	150A Xfer Sw, 3P	EA	8,091.68	
6005	260A Xfer Sw, 3P	EA	11,557.11	
6006	400A Xfer Sw, 3P	EA	13,759.34	
6007	600A Xfer Sw, 3P	EA	20,888.99	
6008	800A Xfer Sw, 3P	EA	25,424.29	
6009	1200A Xfer Sw, 3P	EA	32,406.26	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6011	2000A Xfer Sw, 3P	EA	39,548.43	

16430 Computer Power Supplies

Note: Lead-Calcium Wet Cell Maintenance Free, High Voltage Disconnect, Internal Fuse Protection, System Status And State Of Charge Indicators.

16439 0010 Uninterruptible power system

16439 0020 Incl static transfer switch & mech bypass switch

0120	UPS, 5KVA, 120V in, 1ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	8,783.88	604.88
0150	UPS, 5KVA, 240V in, 1ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	8,783.88	604.88
0152	1. 15KVA, UPS, 120V In, 1Ph, 60Hz, 120V, w/Stat Xfr Sw, Mech BP Sw	EA	1,387.80	14.73
0154	2. 1KVA, UPS, 120V In, 1Ph, 60Hz, 120V Output, w/Stat Xfr Sw, Mech BP Sw	EA	2,289.22	14.73
0156	4. 3KVA, UPS, 120V In, 1Ph, 60Hz, 120V Output, w/Stat Xfr Sw, Mech BP Sw	EA	5,019.24	14.73
0158	5KVA, UPS, 480V In, 3Ph, 60Hz, 120V Output, w/Stat Xfr Sw, Mech BP Sw	EA	10,259.21	415.97
0200	7. 5KVA, UPS, 208V In, 3Ph, 60Hz, 120V Output, w/Stat Xfr Sw, Mech BP Sw	EA	10,763.57	416.08
0202	7. 5KVA, UPS, 480V In, 3Ph, 60Hz, 120V Output, w/Stat Xfr Sw, Mech BP Sw	EA	10,763.57	416.08
0300	UPS, 10KVA, 208V in, 3ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	16,992.87	652.31
0350	UPS, 15KVA, 208V in, 3ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	18,986.47	608.63
0500	UPS, 10KVA, 480V in, 3ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	17,690.05	679.41
0550	UPS, 15KVA, 480V in, 3ph, 120V out, 60 Hz, w/stat xfr sw & mech byp	EA	20,148.43	646.46
0820	UPS, remote status panel, optl access, 1 ph, w/stat xfr sw & mech	EA	902.93	85.78
0840	UPS, ext btry disc w/encl, 5KVA, access, 1ph, w/stat xfr sw & mech	EA	850.45	113.40
0860	UPS, ext btry disc w/encl, 7-15KVA, access, 1ph, w/stat xfr	EA	2,558.73	63.83
0870	Ext 120/240 V Out Xformer, 5KVA Accessories, 1 Ph Out Units, Only	EA	968.56	134.65
0880	Ext 120/240 V Out Xformer, 7.5KVA Accessories, 1 Ph Out Units, Only	EA	1,267.64	134.22
0890	Ext 120/240 V Out Xformer, 10KVA Accessories, 1 Ph Out Units, Only	EA	1,679.65	207.61
0900	Ext 120/240 V Out Xformer, 15KVA Accessories, 1 Ph Out Units, Only	EA	2,164.71	208.01
1100	UPS, 15KVA, 208V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	12,189.56	1,187.77
1150	UPS, 30KVA, 208V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	14,029.51	1,379.15
1200	UPS, 50KVA, 208V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	36,804.01	1,379.15
1300	UPS, 15KVA, 480V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	12,177.36	1,187.77
1350	UPS, 30KVA, 480V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	14,029.51	1,379.15
1360	UPS, 35KVA, 480V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	33,591.18	1,379.15
1361	UPS, 35KVA, 480V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech byp	EA	4,269.01	1,379.15
1400	UPS, 50KVA, 480V in, 3ph, 120/208V out, 60Hz, w/stat xfr sw & mech	EA	36,804.01	1,379.15
1600	UPS, 30KVA, 480V in, 3ph, 277/480V out, 60 Hz, w/stat xfr sw & mech	EA	27,508.30	1,379.15
1650	UPS, 50KVA, 480V in, 3ph, 277/480V out, 60 Hz, w/stat xfr sw & mech	EA	36,804.01	1,379.15
1800	UPS, remote status panel, access, 3 ph unit, w/stat xfr sw & mech	EA	851.61	113.51
1802	Digital Information System UPS Accessories, 3 Ph Out Units, Only	EA	2,458.12	100.78

16439 1900 50 Hertz Models, 220-240 Volt Output

16439 1910 220 Volt Input, Single Phase

1911	5KVA, UPS, 220V In, 1Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,692.62	347.58
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16439 1920 240 Volt Input, Single Phase

1921	5KVA, UPS, 240V In, 1Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,692.62	347.58
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16439 1930 380 Volt Input, Three Phase

1931	5KVA, UPS, 380V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,343.15	421.21
1932	7.5KVA, UPS, 380V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,900.92	421.29
1933	10KVA, UPS, 380V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	13,455.42	464.40
1934	15KVA, UPS, 380V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	16,070.42	463.94

16439 1940 415 Volt Input, Three Phase

1941	5KVA, UPS, 415V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,343.15	421.21
1942	7.5KVA, UPS, 415V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	11,900.92	421.29
1943	10KVA, UPS, 415V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	13,455.42	464.40
1944	15KVA, UPS, 415V In, 3Ph, 50Hz, 220V -240V Out, w/Stat Xfr Sw, BP Sw	EA	16,070.42	463.94

16439 2000 Battery reservoir system with rack

2020	UPS, battery reservoir system with rack, 5 min, 5 KVA	EA	1,886.62	277.57
2040	UPS, battery reservoir system with rack, 5 min, 7.5 KVA	EA	1,886.62	266.90
2060	UPS, battery reservoir system with rack, 5 min, 10 KVA	EA	1,984.22	272.70
2100	UPS, battery reservoir system with rack, 5 min, 15 KVA	EA	1,984.22	229.12
2120	UPS, battery reservoir system with rack, 5 min, 30 KVA	EA	3,307.32	310.91
2140	UPS, battery reservoir system with rack, 5 min, 50 KVA	EA	7,792.50	638.47
2142	75KVA, 5 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	6,061.80	304.74
2144	<5 KVA, 5 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	1,265.02	186.74
2200	UPS, battery reservoir system with rack, 15 min, 5 KVA	EA	2,402.53	300.32
2220	UPS, battery reservoir system with rack, 15 min, 7.5 KVA	EA	2,402.53	286.75
2240	UPS, battery reservoir system with rack, 15 min, 10 KVA	EA	2,744.93	382.89

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2260	UPS, battery reservoir system with rack, 15 min, 15 KVA	EA	3,697.74	390.96
2280	UPS, battery reservoir system with rack, 15 min, 30 KVA	EA	4,743.51	291.66
2300	UPS, battery reservoir system with rack, 15 min, 50 KVA	EA	9,639.30	562.70
2302	75KVA, 15 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	9,700.97	383.19
2304	<5KVA, 15 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	1,477.87	186.74
2400	UPS, battery reservoir system with rack, 30 min, 5 KVA	EA	3,703.93	445.47
2420	UPS, battery reservoir system with rack, 30 min, 7.5 KVA	EA	4,046.33	569.61
2440	UPS, battery reservoir system with rack, 30 min, 10 KVA	EA	6,718.85	569.61
2460	UPS, battery reservoir system with rack, 30 min, 15 KVA	EA	7,471.08	715.36
2480	UPS, battery reservoir system with rack, 30 min, 30 KVA	EA	8,749.24	443.17
2500	UPS, battery reservoir system with rack, 30 min, 50 KVA	EA	11,708.00	375.03
2502	75KVA, 30 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	22,252.86	437.65
2504	<5KVA, 30 Min, UPS, Battery System W/Rack, Lead Wet, Full Output Load	EA	1,531.07	186.74
16439 3000 50 Hertz Models				
16439 3010 220 Volt Input, 380 Volt Output,				
3011	15KVA, UPS, 220V In, 3Ph, 50Hz, 380V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	32,175.06	563.09
3012	30KVA, UPS, 220V In, 3Ph, 50Hz, 380V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	44,337.23	562.63
3014	45KVA, UPS, 220V In, 3Ph, 50Hz, 380V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	55,861.69	562.16
16439 3020 240 Volt Input, 415 Volt Output				
3022	15KVA, UPS, 240V In, 3Ph, 50Hz, 415V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	35,274.75	562.73
3024	30KVA, UPS, 240V In, 3Ph, 50Hz, 415V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	48,628.21	562.33
3026	45KVA, UPS, 240V In, 3Ph, 50Hz, 415V 3Ph Output, w/Stat Xfr Sw, BP Sw	EA	61,286.14	561.86
16500 Power Systems & Capacitors				
16510 Power Systems				
2040	Recessed Fluorescent Fixture, 1x 4 foot (204A1), 1 lamp		213.29	
16511 0010 Automatic transfer switches				
16511 0014 Switches, enclosed 120/240 volt, 2 pole				
Note: Solid State Logic, 120/240 Volt Single Phase, 3 Wire, Nema 1 Enclosure,				
0015	Automatic transfer switch, 30 amp, enclosed 120/240 volt, 2	EA	1,744.95	57.34
0020	Automatic transfer switch, 70 amp, enclosed 120/240 volt, 2	EA	2,233.38	62.94
0030	Automatic transfer switch, 100 amp, enclosed 120/240 volt, 2	EA	2,998.78	94.89
0040	Automatic transfer switch, 225 amp, enclosed 120/240 volt, 2	EA	4,685.73	107.69
0050	Automatic transfer switch, 400 amp, enclosed 120/240 volt, 2	EA	5,794.81	179.82
0060	Automatic transfer switch, 600 amp, enclosed 120/240 volt, 2	EA	8,437.01	189.00
0070	Automatic transfer switch, 800 amp, enclosed 120/240 volt, 2	EA	9,971.14	273.79
16511 1309 Switches, enclosed 600 volt, 3 pole				
Note: Panel, Solid State Logic, 600 Volt, Three Phase, 3 Or 4 Wire, Nema 1 Enclosure				
1310	Automatic transfer switch, 30 amp, enclosed 600 volt, 3 pole	EA	1,866.29	86.13
1320	Automatic transfer switch, 70 amp, enclosed 600 volt, 3 pole	EA	2,502.29	64.72
1330	Automatic transfer switch, 100 amp, enclosed 600 volt, 3 pole	EA	3,558.87	116.91
1340	Automatic transfer switch, 225 amp, enclosed 600 volt, 3 pole	EA	5,686.81	130.78
1350	Automatic transfer switch, 400 amp, enclosed 600 volt, 3 pole	EA	7,994.52	239.21
1360	Automatic transfer switch, 600 amp, enclosed 600 volt, 3 pole	EA	11,025.04	261.41
1370	Automatic transfer switch, 800 amp, enclosed 600 volt, 3 pole	EA	12,328.84	374.14
16511 1409 Switches, enclosed 600 volt, 4 pole				
Note: Solid State Logic, 600 Volt, Three Phase 3 Or 4 Wire, Nema 1 Enclosure				
1410	Automatic transfer switch, 30 amp, enclosed 600 volt, 4 pole	EA	2,336.68	55.67
1420	Automatic transfer switch, 70 amp, enclosed 600 volt, 4 pole	EA	2,830.12	55.39
1430	Automatic transfer switch, 100 amp, enclosed 600 volt, 4 pole	EA	4,177.55	94.29
1440	Automatic transfer switch, 225 amp, enclosed 600 volt, 4 pole	EA	6,515.25	135.53
1450	Automatic transfer switch, 400 amp, enclosed 600 volt, 4 pole	EA	9,087.99	249.32
1460	Automatic transfer switch, 600 amp, enclosed 600 volt, 4 pole	EA	11,397.27	255.49
1470	Automatic transfer switch, 800 amp, enclosed 600 volt, 4 pole	EA	14,109.12	387.69
2510	Automatic transfer switch, access, time delay relay	EA	278.91	39.01
2520	Automatic transfer switch, access, under voltage relay	EA	592.64	39.01
2530	Automatic transfer switch, access, over voltage relay	EA	592.64	39.01
2535	Automatic transfer switch, access, test push button	EA	70.92	39.01
2540	Automatic transfer switch, four position selector switch, access	EA	460.66	75.56
2550	Automatic transfer switch, two position selector switch, access	EA	425.32	52.16
2560	Automatic transfer switch, access, pilot light	EA	154.58	18.69
2565	Automatic transfer switch, aux contact when normal fails, access	EA	168.06	21.88

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2570	Automatic transfer switch, access, voltmeter & ammeter	EA	1,208.52	99.29
2580	Automatic transfer switch, access, frequency meter	EA	845.95	45.53
2590	Automatic transfer switch, access, running time meter	EA	870.35	49.89
2600	Automatic transfer switch, access, plant exerciser	EA	484.62	67.66
2610	Automatic transfer switch, access, battery charger	EA	698.42	51.20
16511 2620 For NEMA 3R cabinet				
2630	Auto transfer sw. for encl NEMA 3R, add for NEMA 1, 30 amp - 100	EA	421.79	
2640	Auto transfer sw. for encl NEMA 3R, add for NEMA 1, 225 amp -	EA	521.72	
2650	Auto transfer sw. for encl NEMA 3R, add for NEMA 1, 600 amp -	EA	1,336.26	
16511 4000 Accessories				
4001	Time Delay Relay Auto Transfer Sw, Accessories	EA	108.20	31.38
4002	Under Voltage Relay Auto Transfer Sw, Accessories	EA	255.71	31.38
4003	Over Voltage Relay Auto Transfer Sw, Accessories	EA	255.71	31.38
4004	Test Push Botton Auto Transfer Sw, Accessories	EA	159.83	31.38
4005	Four Position Selector Switch Auto Transfer Sw, Accessories	EA	283.94	47.78
4006	Two Position Selector Switch Auto Transfer Sw, Accessories	EA	248.34	31.38
4007	Pilot Light Auto Transfer Sw, Accessories	EA	248.34	31.38
4008	Auxiliary Contacts Auto Transfer Sw, Accessories	EA	232.11	31.38
4009	Voltmeter And Ammeter Auto Transfer Sw, Accessories	EA	617.63	62.76
4011	Frequency Meter Auto Transfer Sw, Accessories	EA	546.31	31.38
4012	Running Time Meter Auto Transfer Sw, Accessories	EA	513.86	31.38
4013	Plant Exerciser Auto Transfer Sw, Accessories	EA	437.67	69.89
4014	Battery Charger Auto Transfer Sw, Accessories	EA	806.45	68.32
16511 6000 Contactor Type WInphase Mbntr & Exerciser				
16511 6100 3 Pole With Switched Neutral & Nema Type 1 Encl				
6101	30A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,651.23	57.34
6102	70A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,796.58	57.38
6103	100A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	7,321.21	97.67
6104	150A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	8,279.43	97.67
6105	260A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	11,407.51	143.53
6106	400A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	13,847.94	143.60
6107	600A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	19,152.20	238.34
6108	800A, Auto Xfr Sw, 3P w/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	22,554.49	313.55
6109	1000A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	35,535.65	312.78
6111	1200A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	36,720.55	374.45
6112	1600A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	46,470.36	411.87
6113	2000A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	48,472.59	707.07
6114	3000A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	82,447.73	706.19
6115	4000A, Auto Xfr Sw, 3Pw/Sw Neutral Cntor w/Inphase Mbn & Exer, NEMA1	EA	112,704.38	941.06
16511 6200 3 Pole WBypass Isolation Sw & Nema Type 1 Encl				
6201	150A, Auto Xfr Sw, 3P w/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	18,077.12	120.10
6202	260A, Auto Xfr Sw, 3P w/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	20,099.86	120.20
6203	400A, Auto Xfr Sw, 3P w/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	27,330.72	213.62
6204	600A, Auto Xfr Sw, 3P w/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	37,787.38	213.72
6205	800A, Auto Xfr Sw, 3P w/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	44,779.00	333.96
6206	1000A, Auto Xfr Sw, 3Pw/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	68,163.97	367.05
6207	1200A, Auto Xfr Sw, 3Pw/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	76,773.06	440.41
6208	1600A, Auto Xfr Sw, 3Pw/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	99,138.38	440.33
6209	2000A, Auto Xfr Sw, 3Pw/BP Isol Sw Cntor w/Inphase Mbn & Exer, NEMA1	EA	110,988.66	631.34
16511 6300 3 Pole WSw Neutral, Byp Isol Sw & Nema 1 Encl				
6301	150A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	20,372.46	125.44
6302	260A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	22,402.57	125.51
6303	400A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	32,627.25	253.65
6304	600A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	44,278.75	253.75
6305	800A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	51,574.12	390.09
6306	1000A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	88,809.59	428.63
6307	1200A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	100,772.83	557.77
6308	1600A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	130,155.05	557.70
6309	2000A, AutoXSw, 3Pw/BP Isol & Sw Ne Cntor w/Inphase Mbn & Exer, NEMA1	EA	145,617.29	792.86
16511 6400 Enclosure Mdfications				
6401	Add for NEMA 4 Encl, 30-150Amp	EA	1,436.78	
6402	Add for NEMA 4 Encl, 260-400Amp	EA	2,212.70	
6403	Add for NEMA 4 Encl, 600-800Amp	EA	2,540.18	
6411	Add for NEMA 12 Encl, 30-150Amp	EA	1,333.52	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6412	Add for NEMA 12 Encl, 260-400Amp	EA	2,017.98	
6413	Add for NEMA 12 Encl, 600-800Amp	EA	2,060.76	
6414	Add for NEMA 12 Encl, 1000-1200A	EA	3,159.73	
16511 6500 3 Pole W Nema Type 1 Enclosure				
16512 Transfer Switches				
16512 0010 Non-automatic transfer switches				
0100	Non-auto transfer sw, 30 amp, enclosed, w/fuses, 480 volt 3 P	EA	1,575.80	
0150	Non-auto transfer sw, 60 amp, enclosed, w/fuses, 480 volt 3 P	EA	2,172.99	
16512 6500 Automatic transfer switches				
6501	30A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,021.22	
3049	For Type 300 Emergency Unit Quartz Standby Add		38.64	
6502	70A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,108.32	
3049	For Type 300 Emergency Unit Quartz Standby Add		38.64	
6503	100A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,273.01	
6504	150A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	6,948.10	
6505	260A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	10,356.00	
6506	400A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	11,493.84	
6507	600A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	16,924.89	
6508	800A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	20,014.99	
6509	1000A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	31,789.49	
6511	1200A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	33,060.38	
6512	1600A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	40,556.89	
6513	2000A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	41,543.34	
6514	3000A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	75,997.07	
6515	4000A, Auto Transfer Sw, 3P, NEMA 1 Cntor w/Inphase Mbn & Exer, NEMA1	EA	104,666.62	
16513 0010 Generator set				
16513 1950 Gas or Gasoline Driven Generator Set 3 Phase				
Note: 4-Wire 480/277 Or 208/120 Volt Complete With Radiator, 100 Gal. Fuel Tank, Auto Transfer Switch, Battery Charger, Miffler Indicating And Operating Controls. Pricing Based On Installation Above Grade On Concrete Pad. Utility Piping, Wiring Or Concrete Excluded				
1952	7.5KW, Gas Or Gasoline Generator Set, 3 Ph, w/o Piping, Wiring.	EA	7,372.14	555.07
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1954	10 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	9,709.79	585.07
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1956	15 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	15,806.72	673.03
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1958	30 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	16,001.86	831.67
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1960	40 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	17,710.54	832.28
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1962	50 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	19,414.92	1,003.48
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1964	60 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	23,242.26	1,049.87
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1966	75 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	26,671.94	1,242.21
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1968	80 KW, Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring.	EA	30,970.68	1,266.35
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1970	100KW Gas Or Gasoline Generator Set, 3 Ph w/o	EA	48,537.07	1,466.99
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1972	125KW Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring,	EA	60,210.02	1,666.49
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1974	150KW Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring,	EA	76,329.90	1,852.10
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
1976	175KW Gas Or Gasoline Generator Set, 3 Ph w/o Piping, Wiring,	EA	92,239.84	2,216.30
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
16513 2000 Diesel engine				
Note: 1800 RPM 3 Phase, 4-Wire 480/277 Or 208/120 Volt Complete With Radiator, 100 Gal. Fuel Tank, Auto Transfer Switch, Battery Charger, Indicating And Operating Controls. Pricing Based On Installation Above Grade On Concrete Pad. Utility Piping, Wiring Or Concrete Excluded				
2010	Generator set, dsl eng, xfr sw&fuel tank, 30 KW, incl btry,	EA	20,142.67	989.17
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2020	Generator set, dsl eng, xfr sw&fuel tank, 40 KW, incl btry,	EA	23,240.22	1,173.68
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2100	Generator set, dsl eng, xfr sw&fuel tank, 50 KW, incl btry,	EA	24,865.47	1,330.40
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2110	Generator set, dsl eng, xfr sw&fuel tank, 60 KW, incl btry,	EA	27,522.30	1,385.25
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2200	Generator set, dsl eng, xfr sw&fuel tank, 75 KW, incl btry,	EA	32,304.71	1,515.67
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2220	Generator set, dsl eng, xfr sw&fuel tank, 80 KW, incl btry,	EA	32,373.66	1,579.70
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2300	Generator set, dsl eng, xfr sw&fuel tank, 100 KW, incl btry,	EA	35,873.74	1,739.49
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2400	Generator set, dsl eng, xfr sw&fuel tank, 125 KW, incl btry,	EA	38,263.81	1,965.75
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2500	Generator set, dsl eng, xfr sw&fuel tank, 150 KW, incl btry,	EA	43,952.61	2,007.04
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2600	Generator set, dsl eng, xfr sw&fuel tank, 175 KW, incl btry,	EA	45,821.46	2,201.11
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2700	Generator set, dsl eng, xfr sw&fuel tank, 200 KW, incl btry,	EA	47,712.16	2,146.94
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2800	Generator set, dsl eng, xfr sw&fuel tank, 250 KW, incl btry,	EA	51,940.17	2,301.38
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2850	Generator set, dsl eng, xfr sw&fuel tank, 275 KW, incl btry,	EA	53,845.40	2,031.80

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
2900	Generator set, dsl eng, xfr sw&fuel tank, 300 KW incl btry,	EA	61,746.75	2,324.78
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3000	Generator set, dsl eng, xfr sw&fuel tank, 350 KW incl btry,	EA	66,434.10	2,753.21
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3100	Generator set, dsl eng, xfr sw&fuel tank, 400 KW incl btry,	EA	80,611.84	2,447.81
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3200	Generator set, dsl eng, xfr sw&fuel tank, 500 KW incl btry,	EA	92,936.44	2,415.54
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3220	Generator set, dsl eng, xfr sw&fuel tank, 600 KW incl btry,	EA	121,230.65	3,326.42
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3230	Generator set, dsl eng, xfr sw&fuel tank, 650 KW incl btry,	EA	168,737.12	2,794.83
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3240	Generator set, dsl eng, xfr sw&fuel tank, 750 KW incl btry,	EA	168,737.12	2,794.83
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3250	Generator set, dsl eng, xfr sw&fuel tank, 800 KW incl btry,	EA	177,143.10	3,060.33
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3260	Generator set, dsl eng, xfr sw&fuel tank, 900 KW incl btry,	EA	186,583.65	4,137.34
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
3270	Generator set, dsl eng, xfr sw&fuel tank,1000 KW incl btry,	EA	189,916.13	4,091.53
3300	Generator set, for increase in fuel tank size to 200 gallon, add		1,215.00	
3310	Generator set, for increase in fuel tank size to 275 gallon, add		1,650.00	
3320	Generator set, for increase in fuel tank size to 300 gallon, add		2,000.00	
16513 4999	Mtor drive, 460 V AC, to 250 V DC			
5000	Generator set, motor drive, 460V AC, to 250V DC, 65 KW	EA	13,391.66	1,695.83
5010	Generator set, motor drive, 460V AC, to 250V DC, 85 KW	EA	15,401.01	1,705.02
5020	Generator set, motor drive, 460V AC, to 250V DC, 100 KW	EA	18,107.87	2,585.12
5030	Generator set, motor drive, 460V AC, to 250V DC, 125 KW	EA	21,161.34	2,521.23
5032	33 KW 460VAC Drive Mtr to 250VDC AC To DC Electrical Conversion	EA	8,956.74	1,120.73
5034	40 KW 460VAC Drive Mtr to 250VDC AC To DC Electrical Conversion	EA	9,858.49	1,126.10
5036	50 KW 460VAC Drive Mtr to 250VDC AC To DC Electrical Conversion	EA	11,174.53	1,612.19
16513 5050	4160 Volt 3 Phase Ac Mtor Drive 250 Or 500 Volt Dc			
5052	170 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	31,484.93	3,177.51
5054	200 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	34,276.35	3,179.33
5056	240 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	41,278.05	4,130.48
5058	320 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	46,866.92	5,023.90
5060	400 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	55,676.32	5,015.20
5062	560 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	79,160.71	7,479.69
5064	640 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	81,610.22	7,496.19
5066	800 KW 4160VAC Drive Mtr-250VDC AC To DC Electrical Conversion	EA	94,178.30	8,723.23
16513 5199	Rectifier, 230/460 V AC, to 125 V DC conversion			
5200	Generator set, rectifier 230/460V AC, 3 KW, 24 A, to 125V	EA	3,396.14	58.80
5210	Generator set, rectifier 230/460V AC, 5 KW, 40 A, to 125V	EA	4,151.42	58.84
5220	Generator set, rectifier 230/460V AC, 7.5 KW, 60 A, to	EA	5,510.92	58.73
5230	Generator set, rectifier 230/460V AC, 10 KW, 80 A, to	EA	5,557.39	58.77
5240	Generator set, rectifier 230/460V AC, 15 KW, 120 A, to	EA	6,162.42	73.50
5250	Generator set, rectifier 230/460V AC, 20 KW, 160 A, to	EA	6,673.68	73.42

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5260	Generator set, rectifier 230/460V AC, 25 KW 200 A, to	EA	6,993.22	73.42
5270	Generator set, rectifier 230/460V AC, 40 KW 320 A, to	EA	8,510.92	96.96
5280	Generator set, rectifier 230/460V AC, 50 KW 400 A, to	EA	9,033.80	103.70
5400	Generator set, rectifier 230/460V AC, 3 KW 12 A, to 250V	EA	3,942.26	58.84
5410	Generator set, rectifier 230/460V AC, 5 KW 20 A, to 250V	EA	4,709.16	58.77
5420	Generator set, rectifier 230/460V AC, 7.5 KW 30 A, to	EA	5,394.72	58.77
5430	Generator set, rectifier 230/460V AC, 10 KW 40 A, to	EA	5,545.77	58.77
5440	Generator set, rectifier 230/460V AC, 15 KW 60 A, to	EA	6,278.61	73.50
5450	Generator set, rectifier 230/460V AC, 20 KW 80 A, to	EA	6,906.07	73.42
5460	Generator set, rectifier 230/460V AC, 25 KW 100 A, to	EA	7,138.47	73.46
5470	Generator set, rectifier 230/460V AC, 40 KW 160 A, to	EA	8,476.06	96.96
5480	Generator set, rectifier 230/460V AC, 50 KW 200 A, to	EA	8,998.94	96.96
16513 6999 Generator receptacle				
7000	Generator set, generator receptacle, 400 A, 4 P w/ box	EA	2,235.52	254.36

16600 Lighting

Note: All Standard Fluorescent And Incandescent Fixtures To Include 1 Set Of Lamps (Light Bulbs) As The Standard And Dimming Ballast. Lamps To Comply With Energy Policy Act Of 1992. Items Provided List Old/Failed Lamps, See, Supplemental Data For Correct Replacements Lamps.

16610 Lighting

16610 0500 Miscellaneous Lighting Fixtures

Note: Per COE Std Det # 40-06-04

0502	Recessed Round Incandescent Down light (116)		222.26	
0504	Recessed Fluorescent Fixture, 1x 4 foot (204B1), 2 lamp		217.94	
0506	Recessed Parabolic Fluorescent Fixture, 2x4 foot (235A), 2 lamp		262.27	
0508	Recessed Fluorescent Fixture, 2x 4 foot (207B1), 3 lamp		274.54	
0510	Fluorescent Strip Fixture (220A) , 1 lamp		99.42	
0512	Fluorescent Strip Fixture (220B) , 2 lamp		118.56	
0514	Industrial Open Type Fluorescent , 8 foot, (231A)		253.10	
0516	Industrial Open Type Fluorescent , 4 foot, (230A)		190.93	
0518	Industrial Open Type Fluorescent , 4 foot, (230b)		246.65	
0520	Vapor Tight Fluorescent Fixture (232), 4 foot		229.65	
0522	Emergency Light for HID Fixture (300)		191.02	
0524	High Bay Industrial HID, HPS (30 1B)		659.32	
0526	Emergency Battery Pack w/Floodlights (603)		236.82	
0528	Exit Sign w/Emergency Battery, Single Face (604A)		204.66	
0530	Exit Sign w/Emergency Battery, Double Face (604B)		204.66	
0532	Emergency Battery Power Supply (600)		1,049.61	

16610 1000 Globe - Opal Glass

16610 1100 Type 114 Pendant Mounted

1101	Rd Glass Globe Fxtr, (Type 114A1) 12"D 100W Lamp, Pendant Mt'd	EA	108.48	8.00
1102	Rd Glass Globe Fxtr, (Type 114B1) 14"D 150W Lamp, Pendant Mt'd	EA	61.87	8.20
1103	Rd Glass Globe Fxtr, (Type 114B1) 14"D 200W Lamp, Pendant Mt'd	EA	66.46	8.17
1104	Rd Glass Globe Fxtr, (Type 114B1) 14"D 300W Lamp, Pendant Mt'd	EA	70.08	9.67

16610 1200 Type 114 Ceiling Mounted

1201	Rd Glass Globe Fxtr, (Type 114A2) 12"D 100W Lamp, Ceiling Mt'd	EA	92.89	6.60
1202	Rd Glass Globe Fxtr, (Type 114B2) 14"D 150W Lamp, Ceiling Mt'd	EA	97.14	6.60
1203	Rd Glass Globe Fxtr, (Type 114B2) 14"D 200W Lamp, Ceiling Mt'd	EA	84.89	6.64
1204	Rd Glass Globe Fxtr, (Type 114B2) 14"D 300W Lamp, Ceiling Mt'd	EA	91.22	8.04

16610 2000 Recessed Square Incandescent

16610 2100 Type 115 Drop Opal Glass Lens

2101	Recessed Sq Fixture (Type 115A1) Wh Enamel Frame, 150W, Dp Opal Gl	EA	61.16	15.24
2102	Recessed Sq Fixture (Type 115B1) Satin Al Frame, 150W, Dp Opal Gl	EA	64.25	15.17
2103	Recessed Sq Fixture (Type 115C1) Satin Chrm Frame, 150W, Dp Opal Gl	EA	62.39	15.21
2104	Recessed Sq Fixture, 300W	EA	89.85	16.88

16610 2200 Type 115 Flat Prismatic Glass Lens

2201	Recessed Sq Fixture (Type 115A2) Wh Enamel Frame, 150W, Fl Prsm Gl	EA	61.16	15.24
2202	Recessed Sq Fixture (Type 115B2) Satin Al Frame, 150W, Fl Prsm Gl	EA	64.25	15.17
2203	Recessed Sq Fixture (Type 115C2) Satin Chrm Frame, 150W, Fl Prsm Gl	EA	62.39	15.21
2204	Recessed Sq Fixture, 300W	EA	90.02	16.84

16610 2300 Type 115 Semi-Flush Drop Prismatic Glass Lens

2301	Recessed Sq Fixture (Type 115A3) Wh Enamel Frame, 150W, Sfl Prsm Gl	EA	61.16	15.24
2302	Recessed Sq Fixture (Type 115B3) Satin Al Frame, 150W, Sfl Prsm Gl	EA	64.25	15.17
2303	Recessed Sq Fixture (Type 115C3) Satin Chrm Frame, 150W, Sfl Prsm G	EA	62.39	15.21

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2304	Recessed Sq Fixture, 300W	EA	90.02	16.84
16610 2400	Type 115 Flat Albalite Glass Lens			
2401	Recessed Sq Fixture(Type 115A4) Wh Enamel Frame, 150W Fl Alb Gl	EA	50.70	15.67
2402	Recessed Sq Fixture(Type 115B4) Satin Al Frame, 150W Fl Alb Gl	EA	53.79	15.51
2403	Recessed Sq Fixture(Type 115C4) Satin Chrm Frame, 150W Fl Alb Gl	EA	51.93	15.61
2404	Recessed Sq Fixture, 300W	EA	72.37	17.25
16610 2500	Type Rc-Prismatic Asymmetric Glass Drop Lens			
2501	Type RC-Fxtr 150W Prismatic Asymmetric Glass Drop Lens	EA	83.56	16.98
16610 2600	Wearthight Insect-Proof Recessed Fixture Square			
2601	Weatight, Rec, Sq Fxtr, Type 126A1 Suspended Plaster, Drop Gl Lens	EA	59.71	19.48
2602	Weatight, Rec, Sq Fxtr, Type 126A2 Concrete Pour, Drop Gl Lens	EA	80.36	19.48
2603	Weatight, Rec, Sq Fxtr, Type 126B1 Suspended Plaster, Flat Gl Lens	EA	64.93	19.48
2604	Weatight, Rec, Sq Fxtr, Type 126B2 Concrete Pour, Flat Gl Lens	EA	90.84	19.48
16610 2700	Wearthight Insect-Proof Recessed Fixture			
2701	Weatight, Rec, Rd Fxtr, Type 127A1 Suspended Plaster, Drop Gl Lens	EA	58.33	19.48
2702	Weatight, Rec, Rd Fxtr, Type 127A2 Concrete Pour, Drop Gl Lens	EA	77.65	19.48
2703	Weatight, Rec, Rd Fxtr, Type 127B1 Suspended Plaster, Flat Gl Lens	EA	61.65	19.48
2704	Weatight, Rec, Rd Fxtr, Type 127B2 Concrete Pour, Flat Gl Lens	EA	95.13	19.48
16610 2800	Type 116 recessed Round Downlight			
2801	Recessed Rd Fixture, Type 116	EA	217.17	59.87
16610 3000	Surface Munted Incandescent			
16610 3100	White Opal Glass Globe - Drum Type			
3101	Rd Surface Mtd Fxtr(Type 117A) Rated For Two 40 Watt Lamps	EA	75.95	12.67
3102	Rd Surface Mtd Fxtr(Type 117B) Rated For Two 60 Watt Lamps	EA	78.91	13.91
3103	Rd Surface Mtd Fxtr(Type 117C) Rated For Two 75 Watt Lamps	EA	88.64	15.28
16610 3200	White Opal Square Diffuser			
3201	Sq Surface Mtd Fxtr(Type 118A) Rated For Two 40 Watt Lamps	EA	65.24	12.67
3202	Sq Surface Mtd Fxtr(Type 118B) Rated For Two 60 Watt Lamps	EA	68.18	16.31
3203	Sq Surface Mtd Fxtr(Type 118C) Rated For Two 75 Watt Lamps	EA	71.72	16.38
16610 3300	Fixture For Wall Outlet Box Mounting With Grounding Receptacle			
3301	Wall Box Mtd Fxtr Type 119A Chrome Plated Steel Base	EA	48.49	11.97
3302	Wall Box Mtd Fxtr Type 119B Polished Aluminum Base	EA	52.42	11.94
3303	Wall Box Mtd Fxtr Type 119C Brass Finish Steel Base	EA	52.42	11.94
16610 3400	60 To 150 Watt Lamps			
16610 3410	Basic Cost Items			
3411	Std Fxtr, Brass Fin (Type 120A) Brass Finish on Steel	EA	28.38	10.47
3412	Std Fxtr, Copper Fin (Type 120B) Copper Finish on Steel	EA	28.42	10.47
3413	Std Fxtr, Chrome Fin (Type 120C) Chrome Finish on Steel	EA	28.38	10.47
3414	Std Fxtr, Baked Wht En(Type 120D) Baked White Enamel Finish	EA	28.38	10.47
3415	Std Fxtr, Brush Al Fin(Type 120E) Double Face Stem Mtd	EA	28.38	10.47
16610 3420	Fixture For Ceiling Outlet Box Mg Two 60 Watt			
3421	Clg Box Mtd Fxtr, 2 60W Type 121A Antique Brass Finish	EA	50.13	12.64
3422	Clg Box Mtd Fxtr, 2 60W Type 121b Antique Copper Finish	EA	57.34	12.64
3423	Clg Box Mtd Fxtr, 2 60W Type 121c Matte Black Finish	EA	57.41	12.64
3425	Clg Box Mtd Fxtr, 2 60W Type 122a Brushed Aluminum Finish	EA	50.13	12.64
16610 3430	Ceiling Mounted Adjustable Height Fixture Three			
3431	Clg Mtd Fxtr, Adj, 2 60W Type 122A Antique Brass Finish	EA	124.09	15.84
3432	Clg Mtd Fxtr, Adj, 2 60W Type 122B Antique Copper Finish	EA	117.85	15.84
3433	Clg Mtd Fxtr, Adj, 2 60W Type 122C Matte Black Finish	EA	117.85	15.84
16610 4000	Recessed Mercury Vapor			
16610 4100	Round Downlight			
4101	Recess Rd HID Fxtr, E&G, TYPE 308 100W Plaster Ceiling	EA	199.74	20.08
4102	Recess Rd HID Fxtr, E&G, TYPE 308 100W Poured Concrete	EA	553.34	18.51
16610 5000	Ceiling Mounted Circline			
16610 5100	Ceiling Mounted Circline Residential Fixture			
5101	Ceil Mtd Circline Resi Fxtr(201) White Opal Or Prismatic Diffuse	EA	53.33	12.57
16610 5200	Ceiling Mounted Circline Residential Fixture			
5201	Ceil Mtd Circline Resi Fxtr(202) Crystal Or Prismatic Diffuser	EA	53.33	12.57
16610 5300	Ceiling Mounted Circline Residential Fixture			
5301	Ceil Mtd Circline Resi Fxtr(203) White Opal Or Prismatic Diffuse	EA	53.33	12.57
16610 6000	Deluxe Compact Fluorescent W PL Lamps			

Note: Includes Clear Reflector, Encased Ballast, Pre-wired W/ Junction Box. Listed For Damp Locations.

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16610 6000	Black Groove Baffle			
6001	Black Groove Baffle 75 W R30 6-1/2" Aperature	EA	120.74	16.08
6002	Black Groove Baffle 150 W R40 6-1/2" Aperature	EA	136.22	16.08
16610 6100	8" Open Reflector			
6101	8" Open Reflector, Two 9W Twin Tube Fixture	EA	79.60	16.24
6102	8" Open Reflector, Two 13W Twin Tube	EA	79.60	16.24
6103	8" Open Reflector, Two 18W Double Twin Tube	EA	83.37	16.24
6104	8" Open Reflector, Two 26W Double Twin Tube	EA	89.02	16.24
16610 6200	8" Baffled Reflector			
6201	8" Baffled Reflector, Two 9W Twin Tube Fixture	EA	89.63	16.24
6202	8" Baffled Reflector, Two 13W Twin Tube	EA	89.63	16.24
6203	8" Baffled Reflector, Two 18W Double Twin Tube	EA	93.40	16.24
6204	8" Baffled Reflector, Two 26W Double Twin Tube	EA	99.05	16.24
16610 6300	8" Wall Washers			
6301	8" Wall Washers, Two 13W Twin Tube	EA	85.86	16.24
6302	8" Wall Washers, Two 16W Twin Tube	EA	85.86	16.24
16610 6400	6" Open Reflector			
6401	6" Open Reflector, Two 7W Twin Tube Fixture	EA	72.03	14.78
6402	6" Open Reflector, One 13W Double Twin Tube	EA	72.03	14.78
6403	8" Open Reflector, Two 13W Double Twin Tube	EA	76.74	14.78
16610 6500	6" Baffled Reflector			
6501	6" Baffled Reflector, Two 7W Twin Tube Fixture	EA	79.20	14.78
6502	6" Baffled Reflector, One 13W Double Twin Tube	EA	81.08	14.78
6503	8" Baffled Reflector, Two 13W Double Twin Tube	EA	84.85	14.78
16610 7000	Daybrite 3" Paralouwer Or Equal.			
16610 7100	Daybrite 3" Paralouwer 2X4 DEL Door w/Lamps And			
7101	2PB3GS332-33SL MBRNT8-1LL 120V-3 /F032T8	EA	174.23	
7102	2PB3GS332-33SL MBRNT8-1LL 120V-3 /F032T8-E7 W/EMERG Ballast	EA	309.42	
7103	2PB3GS332-33SL MBRNT8-1LL 120V-3 /F032T8-E5 W/Emerg Ballast	EA	399.53	
7104	2PB3GS332-33SL MBRNT8-1LL-120V 3 /F032T8 W/FAC INST LA12-5M	EA	187.00	
7105	2PB3GS332-33SL MBRNT8-1LL-120V 3 /F032T8-E7WE Ballast &LA12-5M	EA	322.19	
7106	2PB3GS332-33SL MBRNT8-1LL-120V 3 /F032T8-E5WE Ballast &LA12-5M	EA	412.32	
7107	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8	EA	174.23	
7108	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8-E7 W/Emerg Ballast	EA	309.42	
7109	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8-E5 W/Emerg Ballast	EA	399.53	
7111	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8 W FAC INST LA27-5M	EA	187.00	
7112	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8-E7 W/E Bllst &LA27-5M	EA	322.19	
7113	2PB3GS332-33SL MBRNT8-1LL-277V 3 /F032T8-E5 W/E Bllst &LA27-5M	EA	412.32	
7114	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8	EA	282.20	
7115	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8-E7 w/Emerg Ballast	EA	417.39	
7116	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8-E5 W/Emerg Ballast	EA	507.51	
7117	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8 W/FAC INST LA12-5M	EA	294.97	
7118	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8-E7 W/E Bllst&LA12-5M	EA	430.16	
7119	2S3P 332 36SL MBRNT8-1LL-120V 3/ F032T8-E5 W/E Bllst&LA12-5M	EA	520.29	
7121	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8	EA	282.20	
7122	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8-E7 W/Emerg Ballast	EA	417.39	
7123	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8-E5 W/Emerg Ballast	EA	507.51	
7124	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8 W/FAC INST LA27-5M	EA	294.97	
7125	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8-E7 W/E Bllst& LA27-5M	EA	430.16	
7126	2S3P 332 36SL MBRNT8-1LL-277V 3/ F032T8-E5 W/E Bllst& LA27-5M	EA	520.29	
16610 7200	Daybrite 3" Paralouwer 2' X2' 2 Lamp T8 "N" 6", 9			
7201	2P3GSZ31U6-33SL-M2-RN-T8- 1LL-27 7	EA	135.87	
7202	2P3GSZ31U6-33SL-M2-RN-T8- 1LL-27 7 W LA27-5M	EA	148.91	
7203	2S3P231U6-33SL-M2-RN-T8-1LL -277	EA	213.94	
7204	2S3P231U6-33SL-M2-RN-T8-1LL -277 With LA27-5M	EA	220.06	
16610 7300	Daybrite 3" Paralouwer 2' X2' 3 Lamp F40EX 9 Cell			
7301	2P3GS3CF40-33SL-MB-RN-T8- 1LL-27 7 W/LA27-5M	EA	241.08	
7302	2P3GS3CF40-33SL-MB-RN-T8- 1LL-27 7	EA	228.30	
7303	2S3P3CF40-33SL-MB-RN-T8-1LL 277 W LA27-5M	EA	337.79	
7304	2S3P3CF40-33SL-MB-RN-T8-1LL 272	EA	325.00	
16611 0010	Fixtures			
16611 0049	Incandescent, lamphold			

MINOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0050	Ltg fxtr, porcelain lamphold, w/ pull switch, 100 W	EA	29.11	8.67
0060	Porc Lphldr,Swless(Type 101A) Lampholder For Outlet Box	EA	43.39	16.04
0100	Ltg fxtr, lampholder, adjustable, for outlet box, 150	EA	64.42	8.67
16611 0499 Incandescent, industrial, ceiling mounted Fixture Cast Alum Guard Integral Outlet Box				
0500	Ltg fxtr, indl, ceiling mtd, encl & gasket, w/concealed box, 150 W	EA	120.39	34.79
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0510	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type103B	EA	138.13	27.22
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0520	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type104B	EA	207.85	27.22
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0530	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type105B	EA	161.95	27.22
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0540	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type106A	EA	187.20	34.69
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0550	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type106C	EA	174.42	34.69
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0570	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type107A	EA	179.65	34.69
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0580	Ltg fxtr, indl, pend mtd, w/std dome reflector, 150 W type107C	EA	163.38	34.69
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0596	Wall Mtd(Type 108B) Fixture Indus, Encl & Gasket, w/Cncl Box	EA	156.99	49.13
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0598	Pendant Mtd(Type 108C) Fixture Indus, Encl & Gasket, w/Cncl Box	EA	134.66	49.13
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0600	Ceiling Mtd (Type 109A1) Indus, HD Encl & Gasket, Dome Reel	EA	210.99	49.13
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
0602	Ceiling Mtd (Type 109B1) Ind, HD Encl & Gasket, Dome 30 Deg	EA	201.28	49.13
0560	Ltg fxtr, incand indl, pendant mtd, for wire guard, add		14.83	
16611 0999 Accent fixture Mg Double				
1002	Std Fxtr, Brass Fin (Type 120A) Brass Finish on Steel	EA	81.24	31.52
1004	Std Fxtr, Copper Fin (Type 120B) Copper Finish on Steel	EA	81.24	31.52
1006	Std Fxtr, Chrome Fin (Type 120C) Chrome Finish on Steel	EA	81.24	31.52
1010	Ltg fxtr, accent, satin aluminum finish, single, 100 W	EA	67.91	13.64
1020	Ltg fxtr, accent, satin aluminum finish, double, 100 W	EA	105.69	20.78
1022	Accent Fixture, Sgl (Type 110B) Satin Brass Finish	EA	64.22	13.64
1024	Accent Fixture, Sgl (Type 110C) Textured Black Finish	EA	64.22	13.64
1026	Accent Fixture, Dbl (Type 111B) Satin Brass Finish	EA	101.91	23.58
1028	Accent Fixture, Dbl (Type 111C) Textured Black Finish	EA	101.91	23.58
16611 1099 Exterior flood light Box Mg Single				
16611 1100 Opal Glass Spherical Globe Fixture				
1100	Ltg fxtr, satin aluminum finish, single, exterior floodlight, 10	EA	52.80	14.44
1102	Rd Glass Globe Fxtr, (Type 114A1) 12"D 100W Lamp, Pendant Mtd	EA	171.82	39.02
1104	Rd Glass Globe Fxtr, (Type 114A2) 12"D 100W Lamp, Ceiling Mtd	EA	177.72	39.02
1106	Rd Glass Globe Fxtr, (Type 114B1) 14"D 150W Lamp, Pendant Mtd	EA	201.33	39.02
1108	Rd Glass Globe Fxtr, (Type 114B2) 14"D 150W Lamp, Ceiling Mtd	EA	183.23	39.02
1110	Ltg fxtr, satin aluminum finish, double, exterior floodlight, 10	EA	81.29	23.75
1112	Ext Floodlt Fxtr, Sgl (Type 112B) Textured Black Finish	EA	73.94	13.64
1114	Ext Floodlt Fxtr, Dbl (Type 113B) Textured Black Finish	EA	126.01	23.58
16611 1199 Incandescent, recessed				
1200	Ltg fxtr, baked white enamel finish, incand recessed, square,	EA	97.17	27.01
1201	Ltg, incand recessed, square, for drop opal glass lens, add		11.34	
1202	Ltg, incand recessed, square, for flat prismatic glass lens, add		27.84	
1203	Ltg, incand sq recessed, for semi-fl drop prismatic glass lens, add		27.84	
1210	Ltg fxtr, incand recessed, round, downlight, 200 watt lamp	EA	195.82	27.01
1201	Ltg, incand recessed, square, for drop opal glass lens, add		11.34	
1202	Ltg, incand recessed, square, for flat prismatic glass lens, add		27.84	
1203	Ltg, incand sq recessed, for semi-fl drop prismatic glass lens, add		27.84	
1212	Recessed Sq Fixture (Type 115B4) Satin Aluminum Finish	EA	143.01	59.20
1201	Ltg, incand recessed, square, for drop opal glass lens, add		11.34	
1202	Ltg, incand recessed, square, for flat prismatic glass lens, add		27.84	
1203	Ltg, incand sq recessed, for semi-fl drop prismatic glass lens, add		27.84	
1214	Recessed Sq Fixture (Type 115C4)	EA	140.61	59.20
1201	Ltg, incand recessed, square, for drop opal glass lens, add		11.34	
1202	Ltg, incand recessed, square, for flat prismatic glass lens, add		27.84	
1203	Ltg, incand sq recessed, for semi-fl drop prismatic glass lens, add		27.84	
16611 1299 Incandescent, surface mounted				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1300	Ltg fxtr, for two 60 watt lamps, incand surface mounted, round	EA	72.88	17.48
1310	Ltg fxtr, for two 75 watt lamps, incand surface mounted, round	EA	60.57	17.48
1350	Ltg fxtr, metal cylinder, 150W incand surface mounted	EA	95.78	16.98
1352	Sq Surface Mtd Fxtr Type 118A Rated For Two 40 Watt Lamps	EA	110.57	39.19
1354	Sq Surface Mtd Fxtr Type 118B Rated For Two 60 Watt Lamps	EA	110.57	39.19
1356	Sq Surface Mtd Fxtr Type 118C Rated For Two 75 Watt Lamps	EA	110.57	39.19
16611 1360 Fixture For Wall Outlet Box Mounting With Grounding Receptacle				
1362	Wall Box Mtd Fxtr Type 119A Chrome Plated Steel Base	EA	83.41	23.58
1364	Wall Box Mtd Fxtr Type 119B Polished Aluminum Base	EA	88.44	23.58
1366	Wall Box Mtd Fxtr Type 119C Brass Finish Steel Base	EA	88.44	23.58
16611 1399 Incandescent, standard				
1400	Ltg fxtr, baked white enamel finish, incand std, 60-150 watt	EA	90.31	17.48
1410	Ltg fxtr, 2 face stem mtd, incand std, 60-150 watt lamps,	EA	114.13	17.48
16611 1499 Incandescent, exterior wall mounted Fixture For Wet Locations One 100 Watt Lamp				
1500	Ltg fxtr, incand ext mtd, encl & gsktd, clear glass globe, 100 W	EA	120.79	23.75
1510	Ltg fxtr, white opal temp glass, one 75 W incand ext mtd, encl &	EA	108.01	23.75
1520	Ltg fxtr, white opal temp glass, two 60 W incand ext mtd, encl &	EA	142.20	39.02
1521	Ext Wall Mtg Fixture Type 124B w/ Guard, 1 Lamp, Encl & Gasketed	EA	106.21	39.02
1522	Ext Wall Mtg Fixture (Type 125B) w/ Guard, 1 Lamp, Encl & Gasketed	EA	160.72	49.53
16611 1599 Incandescent, weathertight, recessed Square				
1600	Ltg fxtr, flat prntc gls lens, weatght, Rec, rnd, 150 W Type126A2	EA	109.02	27.01
1610	Ltg fxtr, flat prntc gls lens, weatght, Rec, rnd, 150 W Type126B2	EA	106.35	27.01
1620	Ltg fxtr, flat prntc gls lens, weatght, Rec, rnd, 150 W Type127A2	EA	90.66	27.01
1630	Ltg fxtr, flat prntc gls lens, weatght, Rec, rnd, 150 W Type127B2	EA	91.82	27.01
16611 1699 Track light, single circuit				
1700	Ltg fxtr, track light, single circuit, 8' track	EA	145.10	41.72
1710	Ltg fxtr, white cylinder light, track light, single circuit	EA	64.68	22.43
16611 1799 Cord reel w/150W hand lamp				
1800	Ltg fxtr, cord reel w/150W hand lamp	EA	556.68	111.70
16611 1899 Supply unit for fluorescent fixture				
1900	Ltg fxtr, emer battery & lamp, supply unit for fluor fxtr	EA	145.17	24.70
16611 1999 Residential, ceiling mounted				
2000	Ltg fxtr, resi, white opal or prismatic diffuser, clg mtd,	EA	110.31	18.56
2010	Ltg fxtr, resi, crystal/prismatic diffuser, clg	EA	135.64	18.56
2020	Ltg fxtr, resi, white opal/prismatic diffuser, clg mtd,	EA	128.32	18.56
2022	Clg Box Mtd Fxtr, 2 60W Type 121A Antique Brass Finish	EA	102.58	39.02
2024	Clg Box Mtd Fxtr, 2 60W Type 121b Antique Copper Finish	EA	112.03	39.02
2026	Clg Box Mtd Fxtr, 2 60W Type 121c Matte Black Finish	EA	112.03	39.02
2028	Clg Box Mtd Fxtr, 2 60W Type 121d Baked White Enamel Finish On St	EA	102.58	39.02
2029	Clg Box Mtd Fxtr, 2 60W Type 122a Brushed Aluminum Finish	EA	102.58	39.02
16611 2050 Ceiling Mounted Adjustable Height Fixture Three 60 Watt Lamps				
2052	Clg Mtd Fxtr, Adj, 2 60W Type 122b Antique Brass Finish	EA	207.85	49.13
2054	Clg Mtd Fxtr, Adj, 2 60W Type 122c Antique Copper Finish	EA	199.75	49.13
2056	Clg Mtd Fxtr, Adj, 2 60W Type 122C Matte Black Finish	EA	199.75	49.13
16611 2499 Fluorescent, recess mounted				
16611 2499 1' x 4', static troffer				
2500	Ltg fxtr, rec mtd fluor, 1'x4', static troffer, two 40 W	EA	98.21	18.91
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2510	Ltg fxtr, rec mtd fluor, two 40 W 1'x4', air handling troffer	EA	117.94	21.71
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2520	Ltg fxtr, rec mtd fluor, stat troffer w/drop opal lens, 2-40W	EA	144.58	31.58
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2521	Recess Fluor Fxtr, 1x4, 2-40W(211) Static, (Layin), w/ Drop Opal Len	EA	209.69	58.63
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 2549 2' x 4', static troffer				
2550	Ltg fxtr, rec mtd fluor, 2'x4', stat troffer, two 40 W	EA	101.70	18.91
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2560	Ltg fxtr, rec mtd fluor, 2'x4', stat troffer, three 40 W	EA	109.71	19.71
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2570	Ltg fxtr, rec mtd fluor, 2'x4', stat troffer, four 40 W	EA	109.97	19.71
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2590	Ltg fxtr, rec mtd fluor, two 40 W 2'x4', air handling troffer	EA	121.43	22.08
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2600	Ltg fxtr, rec mtd fluor, three 40W 2'x4', air handling troffer	EA	128.51	22.55
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2610	Ltg fxtr, rec mtd fluor, four 40W 2'x4', air handling troffer	EA	130.51	23.25
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2630	Ltg fxtr, rec mtd fluor, stat troffer w/drop opal lens, 2-40W	EA	113.32	18.91
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2640	Ltg fxtr, rec mtd fluor, stat troffer w/drop opal lens, 3-40W	EA	121.33	19.71
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2641	Recess Fluor Fxtr, 2x4, 2-40W(211a Static, (Layin), w/ Drop Opal Len	EA	209.24	58.70
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2642	Recess Fluor Fxtr, 2x4, 3-40W(211b Static, (Layin), w/ Drop Opal Len	EA	236.21	60.87
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2643	Recess Fluor Fxtr, 2x4, 4-40W(211c Static, (Layin), w/ Drop Opal Len	EA	239.02	61.64
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2644	Recess Fluor Fxtr, 2x4, 2-40W(211a Static, (Layin), w/ Drop Opal Len	EA	213.61	58.70
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2645	Recess Fluor Fxtr, 2x4, 3-40W(211b Static, (Layin), w/ Drop Opal Len	EA	241.65	60.87
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2646	Recess Fluor Fxtr, 2x4, 4-40W(211c Static, (Layin), w/ Drop Opal Len	EA	244.49	62.07
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2650	Ltg fxtr, rec mtd fluor, stat troffer w/drop opal lens, 4-40W	EA	121.59	19.71
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 2669	4' x 4', static troffer			
2670	Ltg fxtr, rec mtd fluor, 4'x4', stat troffer, four 40 watt	EA	367.68	31.05
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2680	Ltg fxtr, rec mtd fluor, 4'x4', stat troffer, six 40 watt	EA	383.95	31.05
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2700	Ltg fxtr, rec mtd fluor, four 40 W 4'x4', air handling troffer	EA	392.69	33.39
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2710	Ltg fxtr, rec mtd fluor, six 40 W 4'x4', air handling troffer	EA	414.36	34.79
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2730	Ltg fxtr, rec mtd fluor, stat troffer w/drop opal lens, 6-40W	EA	338.63	31.05
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2750	Ltg fxtr, rec mtd fluor, 4-40W 4'x4', incl w/std dome reflector	EA	314.76	30.82
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2751	Recess Fluor Fxtr, 4x4, 6-40W(210b Static, Layin w/Drop Opal Lens	EA	667.22	101.46
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2752	Recess Fluor Fxtr, 4x4, 8-40W(210c Static, (Layin), w/ Drop Opal Len	EA	712.46	107.83
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 2799	Corridor type			
Note: Lamps 48-Inch Length (Individual), Lamps 96-Inch Length (Tandem)				
2800	Ltg fxtr, rec mtd fluor, 48" L, 1-40W prismatic acrylic lens,	EA	215.90	17.38
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2810	Ltg fxtr, rec mtd fluor, 48" L, 1-40W 1/2" PS cube louver,	EA	241.46	17.38
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2830	Ltg fxtr, rec mtd fluor, 96" L, 2-40W prismatic acrylic lens,	EA	386.38	18.91
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
2840	Ltg fxtr, rec mtd fluor, 96" L, 2-40W 1/2" PS cube louver,	EA	438.67	18.91
2845	Ltg, rec mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 2849	Down light			
2850	Ltg fxtr, rec mtd fluor, down light	EA	168.98	18.91
16611 3000	Fluorescent, surface mounted			
16611 3009	1' x 4', two 40 watt			
Note: With Acrylic Prismatic Lens Metal Sides Two 40 Watt Lamps, With Drop Opal Lens Two 40 Watt Lamps				
3010	Surface mtd fluor fxtr, 45"x45" light-stabilzied lens, 1'x4',	EA	123.81	16.71
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3020	Surface mtd fluor fxtr, 35"x25" parabolic al lens, 1'x4', two	EA	173.31	16.71
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3030	Surface mtd fluor fxtr, 1'x4', two 40W drop opal lens	EA	115.21	16.71
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3031	Surf Fluor Strip Fxtr, 1-40W(222A w/ Asymmetric Reflector	EA	109.70	29.52
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3032	Surf Fluor Strip Fxtr, 2-40W(222B w/ Asymmetric Reflector	EA	122.50	34.49
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3033	Rec Fluor Fxtr, Corr, 1-40W(226B) 1/2x1/2x1/2" Acrylic Cube Louver	EA	166.64	55.33
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3034	Rec Fluor Fxtr, Corr, 2-40W(227B) 1/2" Acryl Cube Louver, 96" Tandem	EA	187.04	58.97
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 3049	2' x 4', two 40 watt			
Note: With Acrylic Prismatic Lens And Metal Sides, With Drop Opal Lens				
3050	Surface mtd fluor fxtr, prismatic lens & metal sides,	EA	120.79	16.71
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3060	Surface mtd fluor fxtr, 2'x4', two 40W drop opal lens	EA	118.70	16.71
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3070	Surface mtd fluor fxtr, 2'x4', three 40W drop opal lens	EA	126.43	17.38
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3080	Surface mtd fluor fxtr, prismatic lens & metal sides,	EA	143.65	18.91
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3090	Surface mtd fluor fxtr, 2'x4', four 40W drop opal lens	EA	130.75	18.91
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 3099	4' x 4', four 40 watt With Drop Opal Lens			
3100	Surface mtd fluor fxtr, 4'x4', four 40W drop opal lens	EA	716.70	26.15
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3110	Surface mtd fluor fxtr, 4'x4', six 40W drop opal lens	EA	940.84	25.95
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
3120	Surface mtd fluor fxtr, 4'x4', eight 40W drop opal lens	EA	957.52	27.62
3125	Ltg, surf mtd fluor, for factory inst type 200 emerg unit, add		85.00	
16611 3149	Wraparound			
3150	Surface mtd fluor fxtr, wraparound, 7" x 48", one 40W	EA	83.84	16.71
3160	Surface mtd fluor fxtr, wraparound, 7" x 96", two 40W	EA	131.83	24.15
16611 3179	Strip fixture Symmetric Reflector			
3180	Surface mtd fluor fxtr, w/o reflector, one 40W strip	EA	58.61	11.21
3190	Surface mtd fluor fxtr, symmetric reflector, one 40W	EA	77.20	13.64
3200	Surface mtd fluor fxtr, w/o reflector, two 40W strip	EA	67.91	13.64
3210	Surface mtd fluor fxtr, symmetric reflector, two 40W	EA	87.33	16.71
3212	8' Fluorescent Strip Light 2 Tube Tandem	EA	71.24	13.71
16611 3500	Fluorescent, wall mounted, enclosed			
Note: Fixture Two 40 Watt Lamps, 40 Watt Lamp 48-Inch Length				
3510	Ltg fxtr, wall mtd encl fluor, 48"L, one 40W dir	EA	136.13	16.71
3520	Ltg fxtr, wall mtd encl fluor, 48"L, two 40W dir	EA	147.02	18.91
3530	Ltg fxtr, dir and/or ind, wall mtd encl fluor, 48"L, 2-40W	EA	152.83	18.91
16611 3700	Fluorescent, pendant mounted			
3710	Ltg fxtr, metal louver, pendant mtd fluor, 1'x4', two 40W	EA	263.21	18.91
3720	Ltg fxtr, pris acryl lens, pendant mtd fluor, 1'x4', 2-40W	EA	237.13	18.91
16611 3900	Fluorescent, suspension mounted, industrial 8-Foot			
3910	Ltg fxtr, susp mtd indl fluor, two 40W open type, 4' L	EA	96.62	16.71
3925	Ltg, susp mtd, 4' indl fluor, for refl w/8-15 percent uplight, add		26.00	
3926	Ltg, susp mtd, 4' indl fluor, for refl w/18-25 percent uplight, add		30.00	
3920	Ltg fxtr, susp mtd indl fluor, three 40W open type, 4' L	EA	140.37	17.38
3925	Ltg, susp mtd, 4' indl fluor, for refl w/8-15 percent uplight, add		26.00	
3926	Ltg, susp mtd, 4' indl fluor, for refl w/18-25 percent uplight, add		30.00	
3930	Ltg fxtr, susp mtd indl fluor, two 800 mA lamps, open type, 8' L	EA	155.15	18.91
3960	Ltg, susp mtd, 8' indl fluor, for refl w/8-15 percent uplight, add		20.00	
3970	Ltg, susp mtd, 8' indl fluor, for refl w/18-25 percent uplight, add		18.00	
3940	Ltg fxtr, susp mtd indl fluor, 3-800 mA lamps, open type, 8' L	EA	184.34	19.95
3960	Ltg, susp mtd, 8' indl fluor, for refl w/8-15 percent uplight, add		20.00	
3970	Ltg, susp mtd, 8' indl fluor, for refl w/18-25 percent uplight, add		18.00	
3950	Ltg fxtr, susp mtd indl fluor, 2-1500 mA lamps, open type, 8' L	EA	201.77	19.95
3960	Ltg, susp mtd, 8' indl fluor, for refl w/8-15 percent uplight, add		20.00	
3970	Ltg, susp mtd, 8' indl fluor, for refl w/18-25 percent uplight, add		18.00	
3951	Suspnsn Mtd Ind Fluor Fxtr, (230a Open Type, 4', 2-40W	EA	148.59	49.83
3952	Suspnsn Mtd Ind Fluor Fxtr, (230b Open Type, 4', 3-40W	EA	199.89	54.56
16611 4100	Fluorescent, enclosed & gasketed, vapor tight			
4110	Ltg fxtr, encl&gsktd, surf/pendant mtd, 4' L, vapor tight fluor	EA	143.10	16.71
4120	Ltg fxtr, encl&gsktd, surf/pendant mtd, 8' L, vapor tight fluor	EA	215.57	18.91
16612 0010	Exit and emergency lighting			
16612 0999	Emergency floodlight, remote mounted, 12V DC Use With Type 600 Power Supply Unit			
1000	Lighting, emergency floodlight, 18 watt, remote mounted, 12V DC	EA	43.33	5.00
1001	13 Watt Lamp (Type 601A) Emer Remote Mtd 12VDC FloodLight	EA	57.84	12.05
1010	Lighting, emergency floodlight, 25 watt, remote mounted, 12V DC	EA	43.91	5.00

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1020	Lighting, emergency floodlight, 38 watt, remote mounted, 12V DC	EA	55.53	5.00
16612 1499	Exit sign, 12 V			
16612 1499	1 face			
1500	Exit & emergency lighting, remote end mtd, exit sign, 12 V,	EA	79.01	15.05
1510	Exit & emergency lighting, remote top mtd, exit sign, 12 V,	EA	79.01	15.05
1520	Exit & emergency lighting, remote back mtd, exit sign, 12	EA	79.01	15.05
1530	Exit & emergency lighting, remote stem mtd, exit sign, 12	EA	144.20	15.05
16612 1539	2 face			
1540	Exit & emergency lighting, remote end mtd, exit sign, 12 V,	EA	122.89	15.41
1550	Exit & emergency lighting, remote top mtd, exit sign, 12 V,	EA	122.89	15.41
1560	Exit & emergency lighting, remote stem mtd, exit sign, 12	EA	155.07	15.41
16612 1569	Wth emergency battery, 1 face			
1570	Exit & emergency lighting, 1 face, end mtd, exit sign, w/emr	EA	189.52	22.72
1580	Exit & emergency lighting, 1 face, top mtd, exit sign, w/emr	EA	189.52	22.72
1590	Exit & emergency lighting, 1 face, back mtd, exit sign,	EA	189.52	22.72
1600	Exit & emergency lighting, 1 face, stem mtd, exit sign,	EA	204.28	22.72
16612 1609	Wth emergency battery, 2 face			
1610	Exit & emergency lighting, 2 face, end mtd, exit sign, w/emr	EA	204.95	25.68
1620	Exit & emergency lighting, 2 face, top mtd, exit sign, w/emr	EA	204.95	25.68
1630	Exit & emergency lighting, 2 face, stem mtd, exit sign,	EA	220.05	25.68
16612 1639	Wth stencil face, 1 face			
1640	Exit & emergency lighting, 1 face, end mtd, exit sign,	EA	79.71	15.05
1650	Exit & emergency lighting, 1 face, top mtd, exit sign,	EA	79.71	15.05
1660	Exit & emergency lighting, 1 face, back mtd, exit sign,	EA	79.71	15.05
1670	Exit & emergency lighting, 1 face, stem mtd, exit sign,	EA	87.73	15.05
16612 1679	Wth stencil face, 2 face			
1680	Exit & emergency lighting, 2 face, end mtd, exit sign,	EA	90.47	15.41
1690	Exit & emergency lighting, 2 face, top mtd, exit sign,	EA	90.47	15.41
1700	Exit & emergency lighting, 2 face, stem mtd, exit sign,	EA	98.48	15.41
16612 1709	Edge lit, 1 face			
1710	Exit & emergency lighting, end mtd, exit sign, edge lit, 1 face	EA	237.15	15.05
1720	Exit & emergency lighting, top mtd, exit sign, edge lit, 1 face	EA	237.15	15.05
1730	Exit & emergency lighting, back mtd, exit sign, edge lit, 1 face	EA	237.15	15.05
1740	Exit & emergency lighting, stem mtd, exit sign, edge lit, 1 face	EA	270.85	15.05
16612 1749	Edge lit, 2 face			
1750	Exit & emergency lighting, double face, end mtd, exit sign,	EA	240.24	15.41
1760	Exit & emergency lighting, double face, top mtd, exit sign,	EA	240.24	15.41
1770	Exit & emergency lighting, double face, stem mtd, exit	EA	275.10	15.41
16612 1789	Emergency battery pack unit Wth two 6 Volt Floodlights			
1790	Exit & emergency lighting, w/two 6 V floodlights, emer battery	EA	161.48	31.20
16612 1999	Emergency lighting, battery, 6 V unit			
2000	Emergency ltg, nickel-cadmium battery, 6 V unit, 2 heads	EA	617.84	38.41
2010	Emergency ltg, battery, 6 V unit, 2 heads, lead acid	EA	362.21	67.15
2020	Emergency ltg, battery, 6 V unit, remote head	EA	35.20	10.85
2030	Emergency ltg, nickel cadmium battery, 6 V unit, 3 heads	EA	716.95	80.24
2040	Emergency ltg, battery, 6 V unit, 3 heads, lead acid	EA	507.80	80.24
2050	NEMA 4X Emergency Lighting, 6 Vo lt 2 Heads	EA	449.71	
2060	NEMA 4X Emergency Lighting, 12 V olts 2 Heads	EA	566.03	
16612 2999	Solid state battery charger			
Note: Wall Bracket, 10 Ft Of Dc Charging Cable And Standard Connector, 208/240/480V				
3000	Solid state battery charger, 208/240/480V, 6 cell, 1 ph,	EA	1,226.12	163.66
3020	Solid state battery charger, 208/240/480V, 9 cell, 1 ph,	EA	1,425.37	147.22
3040	Solid state battery charger, 208/240/480V, 12 cell, 1 ph,	EA	1,631.47	199.85
3060	Solid state battery charger, 208/240/480V, 18 cell, 1 ph,	EA	1,756.93	208.19
16612 4000	Special Purpose Lighting Fixtures Exit Fixtures			
16612 4010	Surface Or Pendant Mounted			
16612 4020	Basic Cost Items			
4022	Exit Sign WStencil Face,605A1 Single Face End Mtd	EA	118.40	17.87
4024	Exit Sign WStencil Face,605B1 Double Face End Mtd	EA	138.54	17.87
4026	Exit Sign WStencil Face,605A2 Single Face Top Mtd	EA	118.40	17.87
4028	Exit Sign WStencil Face,605B2 Double Face Top Mtd	EA	138.54	17.87

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4030	Exit Sign WStencil Face, 605A3 Single Face Back Mtd	EA	118.40	17.87
4032	Exit Sign WStencil Face, 605A4 Single Face Stem Mtd	EA	125.23	17.87
4034	Exit Sign WStencil Face, 605B4 Double Face Stem Mtd	EA	145.33	17.87
16612 4050	Fixture Modifications			
4052	Add-Red Volt Wring to Exit Fxtr	EA	33.48	
4054	Add-Flour Lamps to Exit Fxtr	EA	16.74	
4056	Add-Wire Guard to Exit Fxtr	EA	9.21	
4058	Add-Stencil Face to Exit Fxtr	EA	3.71	
4060	Add-Universal Arrows to Exit Fxt	EA	7.43	
4062	Add-Battery Pwr Un to Exit Fxtr	EA	113.00	
4064	Add-Write in Arabic to Exit Fxtr	EA	13.57	
16612 4200	Surface Or Pendant Mounted Edge Lighted			
16612 4210	Basic Cost Items			
4212	Exit Sign Edge Lit, 606A3 Single Face End Mtd	EA	206.16	18.01
4214	Exit Sign Edge Lit, 606A1 Double Face End Mtd	EA	208.07	17.90
4216	Exit Sign Edge Lit, 606B1 Single Face Top Mtd	EA	243.48	17.90
4218	Exit Sign Edge Lit, 606A2 Double Face Top Mtd	EA	189.13	17.90
4220	Exit Sign Edge Lit, 606B2 Single Face Back Mtd	EA	222.24	17.90
4222	Exit Sign Edge Lit, 606A4 Single Face Stem Mtd	EA	225.89	17.87
4224	Exit Sign Edge Lit, 606B4 Double Face Stem Mtd	EA	240.98	17.87
16612 4260	Remove & Reinstall Exit Light Fixture			
4262	Removal & Reinstall Of Exit Lght Fxtres To Inc Storage & Cleanin	EA	26.75	
16612 4300	Recessed Edge Lighted			
16612 4310	Basic Cost Items			
4312	Exit Sign Edge Lit, Recessed, SF Single Face	EA	122.52	17.90
4314	Exit Sign Edge Lit, Recessed, DF Double Face	EA	122.52	17.90
16612 4340	Recessed Exit Light Modification			
4342	Add-Flour Lamps to Exit Fxtr	EA	31.58	
4344	Add-Incand Lamps to Exit Fxtr	EA	11.72	
4346	Add-Al Face Frame to Exit Fxtr	EA	22.29	
4348	Add-Stl Face Frame to Exit Fxtr	EA	23.86	
4350	Add-Write in Arabic to Exit Fxtr	EA	40.87	
16612 4400	Surface Or Pendant Mounted LED			
16612 4410	Basic Cost Items			
4412	Exit Sign LED Single Face End Mtd	EA	243.57	17.15
4414	Exit Sign LED Double Face End Mtd	EA	245.48	18.33
4416	Exit Sign LED Single Face Top Mtd	EA	288.17	18.33
4418	Exit Sign LED Double Face Top Mtd	EA	222.58	18.33
4420	Exit Sign LED Single Face Back Mtd	EA	262.57	18.33
4422	Exit Sign LED Single Face Stem Mtd	EA	266.22	20.83
4424	Exit Sign LED Double Face Stem Mtd	EA	284.40	20.83
4426	Battery Diagnostic per NFPA 110- 31, non audible		89.47	
4428	Battery Diagnostic per NFPA 110- 31, audible		102.25	
4430	Exit Sign LED Single Face Thermo Plastic	EA	101.80	
4432	Exit Sign LED Double Face Thermo Plastic	EA	107.62	
4434	Exit Sign LED Single Face Thermo Plastic Stem Mounted	EA	118.69	
4436	Exit Sign LED Double Face Thermo Plastic Stem Mounted	EA	130.32	
4439	Exit Sign LED Single Face Thermo Plastic w/2HD Emergency Power	EA	220.29	
4440	Exit Sign LED Double Face Thermo Plastic w/2HD Emergency Power	EA	266.82	
16612 4500	Under Water Fixtures			
16612 4510	Dry Niche			
4512	UW Dry Niche Fxtr 120V Par 56	EA	472.83	51.06
4514	UW Dry Niche Fxtr 120V Par 64	EA	591.64	65.90
4516	UW Dry Niche Fxtr 120V Par 56	EA	435.25	34.70
16612 4520	Wet Niche			
4522	UW Wet Niche Fxtr 120V 300W Incandescent Par-56	EA	527.32	34.45
4524	UW Wet Niche Fxtr 120V 1000W Tungsten Halogen Par-64	EA	631.08	46.43
4526	UW Wet Niche Fxtr 12V 300W 25 Amp Par-56 Lamp	EA	892.25	34.02
16612 4530	Fountain Underwater Lighting Fixture			
4532	UW Fountain Fxtr 6, 300W Incand	EA	1,417.43	20.40
4534	UW Fountain Fxtr 500W, Tungsten Halogen	EA	1,203.91	20.47
16612 4600	Temporary Outdoor/Indoor Lighting System			
Note: Includes Galvanized 3/32" Wire Rope Messenger, Plastic Bulb Holders @ 10' Spacing With Guards, Orange 12/3 SJTW-A Cord, 125 VAC, 60 HZ Nema 5-15 Plug. Complete With 75Watt Incandescent Bulbd, Fastened To Ceiling With Temporary Clips. Includes Removal Of Lighting System At				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
End Of Construction And Turn Over To Government Unless Otherwise Noted.				
4602	60' Temporary Lighting System 5 Bulbs	EA	331.05	
4604	110' Temporary Lighting System 10 Bulbs	EA	526.89	
4606	Add-Flour Lamps to Exit Fxtr	EA	16.74	
4608	Add-Incand Lamps to Exit Fxtr	EA	7.95	
4610	Add-Write in Other Language to Exit Fxtr	EA	46.45	
16612 5000 Solar Outdoor Lighting (VP)				
Note: 1) Installtion based on pole mounted, up to 30 height using 1 line truck with aerial platform 2) These Line items to be used in conjunction with line item 01533-1101.				
5101	Solar Fixture	EA	488.96	60.37
5102	Solar Panel	EA	2,061.24	101.86
5103	Suncharge Computer Controller	EA	411.23	102.24
5104	Marine Cell Battery 100% Maintenance Free	EA	388.96	60.37
5105	Fixture Arm 10 Feet In Length	EA	410.22	101.87
16613 1000 Fluorescent - Recessed 40 Watt Rapid Start				
16613 1100 Drop Dish Acrylic Diffuser				
1101	Recess Fluor Fxtr, 1x4, 2-40W(204) Stat Troffer(Layin)Drp Dish Acr	EA	143.23	17.71
1102	Recess Fluor Fxtr, 1x4, 3-40W(204) Stat Troffer(Layin)Drp Dish Acr	EA	185.01	17.54
1103	Recess Fluor Fxtr, 2x4, 2-40W(206A) Stat Troffer(Layin)Drp Dish Acr	EA	97.39	18.18
1104	Recess Fluor Fxtr, 2x4, 3-40W(206B) Stat Troffer(Layin)Drp Dish Acr	EA	107.02	18.18
1105	Recess Fluor Fxtr, 2x4, 4-40W(206C) Stat Troffer(Layin)Drp Dish Acr	EA	107.22	18.31
16613 1200 Flat Crystal Clear Glass Wth Pattern				
1201	Recess Fluor Fxtr, 1x4, 2-40W(204) Stat Troffer(Layin)Fl Clr Gl Le	EA	94.12	18.25
1202	Recess Fluor Fxtr, 1x4, 3-40W(204) Stat Troffer(Layin)Fl Clr Gl Le	EA	170.27	17.61
1203	Recess Fluor Fxtr, 2x4, 2-40W(206A) Stat Troffer(Layin)Fl Clr Gl Le	EA	123.57	17.85
1204	Recess Fluor Fxtr, 2x4, 3-40W(206B) Stat Troffer(Layin)Fl Clr Gl Le	EA	146.73	17.78
1205	Recess Fluor Fxtr, 2x4, 4-40W(206C) Stat Troffer(Layin)Fl Clr Gl Le	EA	150.89	17.81
16613 1300 Egg Louvre - Polystyrene Or White Finished Aluminum				
1301	Recess Fluor Fxtr, 2x2, 2-40W Egg Stat Troffer(Layin)Egg Louvre	EA	137.07	13.37
1302	Recess Fluor Fxtr, 2x4, 2-40W Egg Stat Troffer(Layin)Egg Louvre	EA	130.70	16.94
1303	Recess Fluor Fxtr, 2x4, 3-40W Egg Stat Troffer(Layin)Egg Louvre	EA	141.39	16.98
1304	Recess Fluor Fxtr, 2x4, 4-40W Egg Stat Troffer(Layin)Egg Louvre	EA	144.72	19.28
1305	Recess Fluor Fxtr, 4x4, 4-40W Egg Stat Troffer(Layin)Egg Louvre	EA	256.72	18.75
1306	Recess Fluor Fxtr, 4x4, 6-40W Egg Stat Troffer(Layin)Egg Louvre	EA	273.32	20.68
1307	Recess Fluor Fxtr, 4x4, 8-40W Egg Stat Troffer(Layin)Egg Louvre	EA	289.89	20.68
16613 1400 Parabolic Aluminum Louvre				
1401	Recess Fluor Fxtr, 2x2, 2-40W Al Stat Troffer(Layin)Alum Louvre	EA	85.39	13.81
1402	Recess Fluor Fxtr, 2x4, 2-40W Al Stat Troffer(Layin)Alum Louvre	EA	97.53	17.31
1403	Recess Fluor Fxtr, 2x4, 3-40W Al Stat Troffer(Layin)Alum Louvre	EA	107.02	17.31
1404	Recess Fluor Fxtr, 2x4, 4-40W Al Stat Troffer(Layin)Alum Louvre	EA	107.22	19.75
1405	Recess Fluor Fxtr, 4x4, 4-40W Al Stat Troffer(Layin)Alum Louvre	EA	256.72	18.75
1406	Recess Fluor Fxtr, 4x4, 6-40W Al Stat Troffer(Layin)Alum Louvre	EA	273.32	20.68
1407	Recess Fluor Fxtr, 4x4, 8-40W Al Stat Troffer(Layin)Alum Louvre	EA	289.89	20.68
16613 1500 Acrylic Prismatic Lens				
1501	Recess Fluor Fxtr, 2x2, 2-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	111.61	13.51
1502	Recess Fluor Fxtr, 2x4, 2-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	123.88	17.85
1503	Recess Fluor Fxtr, 2x4, 3-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	129.70	17.91
1504	Recess Fluor Fxtr, 2x4, 4-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	144.05	17.85
1505	Recess Fluor Fxtr, 4x4, 4-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	332.48	28.65
1506	Recess Fluor Fxtr, 4x4, 6-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	369.00	28.62
1507	Recess Fluor Fxtr, 4x4, 8-40W Prsm Stat Troffer(Layin)Acrylic Prsm	EA	411.08	21.25
16613 1600 Air Handling - Acrylic Lens				
1601	Recess Fluor Fxtr, 1x4, 2-40W(205) AH Troffer(Layin)Flush Dr(205)	EA	154.01	16.84
1602	Recess Fluor Fxtr, 1x4, 2-40W AH Troffer(Layin)Recessed Door	EA	154.01	16.84
1603	Recess Fluor Fxtr, 2x4, 2-40W AH Troffer(Layin)Flush Dr(207A)	EA	174.78	16.74
1604	Recess Fluor Fxtr, 2x4, 4-40W AH Troffer(Layin)Flush Dr(207C)	EA	205.59	19.51
1605	Recess Fluor Fxtr, 2x4, 2-40W AH Troffer(Layin)Recessed Door	EA	174.78	16.74
1606	Recess Fluor Fxtr, 2x4, 4-40W AH Troffer(Layin)Recessed Door	EA	205.59	19.51
16613 1700 Acrylic Shield - Row Mounting				
1701	Recess Fluor Fxtr, 6x4, 1-40W Acrylic Shield - Row Mounting	EA	368.55	19.95
1702	Recess Fluor Fxtr, 6x8, 2-40W Acrylic Shield - Row Mounting	EA	447.98	15.71

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16613 1800 Emergency Battery And Lamp				
1801	Emer Battery and Lamp (Type 200) Supply Unit for Fluorescent Fxt	EA	173.06	15.97
16613 1900 Recessed Fixture For Corridors				
16613 1910 Recessed Fixture For Corridors One 40 Watt Lamp				
1911	Rec Fluor Fxtr, Corr, 1-40W(226A) Prismatic Acrylic Lens	EA	99.44	17.34
1912	Rec Fluor Fxtr, Corr, 1-40W(226B) 1/2x1/2x1/2" Acrylic Cube Louver	EA	105.60	17.34
1913	Rec Fluor Fxtr, Corr, 1-40W(226C) 1/2" PolyStyrene Cube Louver	EA	105.60	17.34
16613 1920 Recessed Fixture For Corridors Two 40 Watt				
1921	Rec Fluor Fxtr, Corr, 2-40W(227A) Prismatic Acrylic Lens, 96" Tandem	EA	121.22	19.28
1922	Rec Fluor Fxtr, Corr, 2-40W(227B) 1/2" Acryl Cube Louver, 96" Tandem	EA	121.22	19.28
1923	Rec Fluor Fxtr, Corr, 2-40W(227C) 1/2" PolyS Cube Louver, 96" Tandem	EA	121.18	19.28
16613 2000 Fluorescent - Surface Or Pendant Mounted - 40 Watt Rapid Start				
16613 2100 Square Drop Dish Acrylic Diffuser 4 Ft X 4 Ft				
2101	Surf Fluor Fxtr, 4x4, 4-40W(217A) Square Drop Dish Acrylic Lens	EA	295.40	30.62
2102	Surf Fluor Fxtr, 4x4, 6-40W(217B) Square Drop Dish Acrylic Lens	EA	311.65	30.68
2103	Surf Fluor Fxtr, 4x4, 8-40W(217C) Square Drop Dish Acrylic Lens	EA	318.30	30.78
2104	Pendant Fluor Fxtr, 4x4, 4-40W Square Drop Dish Acrylic Lens	EA	296.98	20.08
2105	Pendant Fluor Fxtr, 4x4, 6-40W Square Drop Dish Acrylic Lens	EA	319.54	25.45
2106	Pendant Fluor Fxtr, 4x4, 8-40W Square Drop Dish Acrylic Lens	EA	332.40	31.15
16613 2200 Acrylic Drop Dish Diffuser With Or With Out Side Panels				
2201	Surf Fluor Fxtr, 1x4, 2-40W(215) Square Drop Dish Acrylic Lens	EA	126.20	11.97
2202	Pendant Fluor Fxtr, 1x4, 2-40W Square Drop Dish Acrylic Lens	EA	139.30	17.14
2203	Surf Fluor Fxtr, 2x4, 2-40W(216A) Square Drop Dish Acrylic Lens	EA	191.97	13.18
2204	Surf Fluor Fxtr, 2x4, 4-40W(216C) Square Drop Dish Acrylic Lens	EA	198.47	13.24
2205	Pendant Fluor Fxtr, 2x4, 2-40W Square Drop Dish Acrylic Lens	EA	205.08	17.38
2206	Pendant Fluor Fxtr, 2x4, 4-40W Square Drop Dish Acrylic Lens	EA	211.53	17.48
16613 2300 Crystal Clear Glass Shield With Pattern With Or Without Side Panels				
2301	Surf Fluor Fxtr, 1x4, 2-40W(215) Crystal Clear Glass Shield Lens	EA	118.38	12.01
2302	Pendant Fluor Fxtr, 1x4, 2-40W Crystal Clear Glass Shield Lens	EA	139.93	17.14
2303	Surf Fluor Fxtr, 2x4, 2-40W(216A) Crystal Clear Glass Shield Lens	EA	140.70	13.31
2304	Surf Fluor Fxtr, 2x4, 4-40W(216C) Crystal Clear Glass Shield Lens	EA	154.64	13.38
2305	Pendant Fluor Fxtr, 2x4, 2-40W Crystal Clear Glass Shield Lens	EA	163.74	17.54
2306	Pendant Fluor Fxtr, 2x4, 4-40W Crystal Clear Glass Shield Lens	EA	177.63	17.61
16613 2400 Egg Crate Polystyrene Louvre				
2401	Surf Fluor Fxtr, 1x4, 2-40W(215) Egg Crate Polystyrene Louvre	EA	103.38	12.41
2402	Pendant Fluor Fxtr, 1x4, 2-40W Egg Crate Polystyrene Louvre	EA	116.41	17.31
2403	Surf Fluor Fxtr, 2x4, 4-40W(216C) Egg Crate Polystyrene Louvre	EA	147.20	14.81
2404	Pendant Fluor Fxtr, 2x4, 4-40W Egg Crate Polystyrene Louvre	EA	162.75	18.24
16613 2500 Steel Louvre And Louvre Fins				
2501	Surf Fluor Fxtr, 1x4, 2-40W(215) Steel Louvre And Louvre Fins	EA	121.08	12.31
2502	Pendant Fluor Fxtr, 1x4, 2-40W Steel Louvre And Louvre Fins	EA	134.10	17.18
2503	Surf Fluor Fxtr, 2x4, 4-40W(216C) Steel Louvre And Louvre Fins	EA	127.50	14.91
2504	Pendant Fluor Fxtr, 2x4, 4-40W Steel Louvre And Louvre Fins	EA	140.55	18.41
16613 2600 Wraparound Acrylic Diffuser				
2601	Surf Fluor Fxtr, 1x4, 2-40W(215) Wraparound Acrylic Diffuser	EA	69.34	12.78
2602	Pendant Fluor Fxtr, 1x4, 2-40W Wraparound Acrylic Diffuser	EA	82.36	17.81
2603	Surf Fluor Fxtr, 2x4, 4-40W(216C) Wraparound Acrylic Diffuser	EA	123.60	14.94
2604	Pendant Fluor Fxtr, 2x4, 4-40W Wraparound Acrylic Diffuser	EA	136.64	18.44
16613 2700 Tubular Fluorescent Fixtures				
2701	8' Tubular Fluorescent w/Baffled Downlight And Lensed Uplight	EA	376.48	24.28
16613 3000 Fluorescent - Ceiling Mounted 40 Watt Rapid Start				
16613 3100 Acrylic Wraparound Shield				
3101	Surf WrapRd Fluor Fxtr, 1-40W(218 7"x48" Wraparound	EA	89.15	11.91
3102	Surf WrapRd Fluor Fxtr, 2-40W(219 7"x96" Wraparound	EA	172.07	11.54
3103	Surf WrapRd Fluor Fxtr, 2-40W 8'	EA	173.75	12.74
16613 4000 Fluorescent - Wall Bracket 40 Watt Rapid Start				
16613 4100 Acrylic Top And Bottom Shield				
4101	Encl Wall Md Fluor Fxtr, 2-40W (223), 48", Direct and/or Indirect	EA	97.80	10.67
4102	Encl Wall Md Fluor Fxtr, 2-40W (223), 48", w/o Sw & Rcpt	EA	68.12	10.94
16613 4200 Acrylic Wraparound Shield				
4201	Encl Wall Md Fluor Fxtr, 1-40W (Type 224), 48" Long, Direct	EA	78.77	10.17

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4202	Encl Wall Md Fluor Fxtr, 2-40W (Type 225), 48" Long, Direct	EA	88.51	10.17
4203	Remove/Install Single View Box (X-Ray)	EA	25.00	
4204	Remove/Install 4 Bank X-Ray View Box	EA	48.00	
16613 5000 Recessed Luminaire				
16613 5100 High Pressure Sodium With Prismatic Lens				
5101	Recess Sq HID Fxtr, 2x2, Type 303c (Layin), 100W High Press Sodium	EA	295.72	20.95
16613 5200 Compact Fl (Biaxial) Lamp Fixtures				
5201	Recessed Fl, 7 Watt, Downlight Compact Fl (biaxial) Lamp Fxtr	EA	101.84	20.40
5202	Recessed Fl, 9 Watt, Downlight Compact Fl (biaxial) Lamp Fxtr	EA	101.84	20.40
5203	Recessed Fl, 13 Watt, Downlight Compact Fl (biaxial) Lamp Fxtr	EA	101.84	20.40
16613 5300 Enclosed Recessed Square Integrally Ballasted				
5301	Recess Sq HID Fxtr, 2x2, Type 303A (Layin), 175W Metal Halide Lamp	EA	465.98	22.31
5302	Recess Sq HID Fxtr, 2x2, Type 303B (Layin), 250W Metal Halide Lamp	EA	485.28	22.31
5304	Recess Sq HID Fxtr, 2x2, Type 303d (Layin), 150W High Press Sodium	EA	323.25	22.31
16613 6000 Surface Luminaire				
16613 6100 Small Fl Fixtures (Less Than 40 Watt Lamps)				
6101	Surf Sq W1-9W Biaxial Fl Lamp white Acrylic Lens, 9 5/8" Sq	EA	57.75	16.23
6102	Surf Sq W2-9W Biaxial Fl Lamps white Acrylic Lens, 9 5/8" Sq	EA	62.36	16.08
6111	Undercounter 2' Fl W1-20 Watt w/ Wraparound Lens	EA	37.67	7.88
6112	Undercounter 3' Fl W1-30 Watt w/ Wraparound Lens	EA	42.39	7.77
16613 6200 High Pressure Sodium				
6201	Wall Md Low Energy, 50W HPS High Pressure Sodium Fxtr	EA	156.90	11.84
6202	Wall Md, 70W HPS, 120V	EA	252.29	14.76
6203	Wall Md, 100W HPS, 120V	EA	257.00	14.76
6204	Wall Md, 150W HPS, 120V	EA	273.54	18.76
16613 6300 Track Lighting				
16613 6310 Light Track Components				
6311	Light Track, 1 Circuit, 4' Long	EA	23.06	2.07
6312	Light Track, 3 Circuit, 4' Long	EA	35.05	2.07
16613 6320 Fixtures				
6321	Cylinder, 75W, Track Lt Fxtr	EA	40.29	4.49
6322	Square, 75W, Track Lt Fxtr	EA	40.78	4.49
6323	Oblong Shaped, Quartz, Track Fxtr	EA	109.43	4.35
16613 6400 Enclosed Pendant Integrally Ballasted Industria- L Low Bay				
6401	HID Ind Low Bay Pendant Fxtr Type 302a, Metal Halide Lamp	EA	262.91	32.75
6402	HID Ind Low Bay Pendant Fxtr Type 302b, High Pressure Sodium	EA	273.78	32.75
16613 6500 Enclosed Surface Mounted Square Integrally Ballasted				
6501	Surf Sq HID Fxtr, 2x2, Type 304A 175 Watt Metal Halide Lamp	EA	190.98	15.97
6502	Surf Sq HID Fxtr, 2x2, Type 304B 150 Watt High Pressure Sodium	EA	188.34	15.97
16613 6600 Enclosed Recessed Integrally Ballasted				
6601	Recess Sq HID Fxtr, 2x2, Type 305A 175 Watt Metal Halide Lamp	EA	288.63	21.35
6602	Recess Sq HID Fxtr, 2x2, Type 305B 150 Watt High Pressure Sodium	EA	248.51	21.35
16613 6700 Enclosed And Gasketed Surface Mounted Square Integrally Ballasted				
6701	Surf Sq HID Fxtr, 2x2, Type 306A 100W Mercury Vapor, Encl & Gskt	EA	184.83	19.28
6702	Surf Sq HID Fxtr, 2x2, Type 306B 175W Mercury Vapor, Encl & Gskt	EA	189.58	19.28
6703	Surf Sq HID Fxtr, 2x2, Type 306C 175W Metal Halide, Encl & Gskt	EA	198.04	19.28
6704	Surf Sq HID Fxtr, 2x2, Type 306D 70W Hi Press Sodium Encl & Gskt	EA	220.25	19.28
16613 6800 Enclosed And Gasketed Recessed Square Integrally Ballasted				
6801	Recess Sq HID Fxtr, 2x2, Type 307A 75W Mercury Vapor, Encl & Gskt	EA	151.02	21.35
6802	Recess Sq HID Fxtr, 2x2, Type 307B 100W Mercury Vapor, Encl & Gskt	EA	155.41	21.35
6803	Recess Sq HID Fxtr, 2x2, Type 307C 175W Mercury Vapor, Encl & Gskt	EA	181.22	21.35
6804	Recess Sq HID Fxtr, 2x2, Type 307D 175W Metal Halide, Encl & Gskt	EA	260.73	21.35
16614 Industrial Fixtures				
16614 1000 Porcelain Enameled Reflector				
16614 1050 Industrial Fixture Deep Bowl Reflector				
1051	Pendant Md (Type 104A) Fixture Industrial, w/Deep Bowl Reflector	EA	65.97	13.51
1052	Ceiling Md (Type 104B) Fixture Industrial, w/Deep Bowl Reflector	EA	66.04	13.51
16614 1100 Standard Dome - Pendant Mount				
1101	Pnant Md (103A) Fxtr, 100W 12" Dia Industrial, w/Std Dome Reflector	EA	54.02	9.87
1102	Pnant Md (103A) Fxtr, 150W 14" Dia Industrial, w/Std Dome Reflector	EA	56.25	9.84

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1103	Pnnt Md(103A) Fxtr, 200W 16" Dia Industrial, w/Std Dome Reflector	EA	62.15	9.81
1104	Pnnt Md(103A) Fxtr, 300-500W 15"D Industrial, w/Std Dome Reflector	EA	75.64	11.78
16614 1200 Standard Dome Ceiling Munt				
1201	Ceil Md(103B) Fxtr, 100W 12" Dia Industrial, w/Std Dome Reflector	EA	44.21	7.80
1202	Ceil Md(103B) Fxtr, 150W 14" Dia Industrial, w/Std Dome Reflector	EA	46.43	7.77
1203	Ceil Md(103B) Fxtr, 200W 16" Dia Industrial, w/Std Dome Reflector	EA	52.37	7.77
1204	Ceil Md(103B) Fxtr, 300-500W 18"D Industrial, w/Std Dome Reflector	EA	65.81	9.70
16614 1300 Standard Dome - Angle Munt				
1301	Angl Md(105A) Fxtr, 100W 12" Dia Industrial, w/Symm Angl Reflecto	EA	50.91	7.70
1302	Angl Md(105A) Fxtr, 150W 14" Dia Industrial, w/Symm Angl Reflecto	EA	53.13	7.67
1303	Angl Md(105A) Fxtr, 200W 16" Dia Industrial, w/Symm Angl Reflecto	EA	59.08	7.67
1304	Angl Md(105A) Fxtr, 300-500W 18"D Industrial, w/Symm Angl Reflecto	EA	72.52	9.64
16614 1400 Shallow Dome - Pendant Munt				
1401	Pendant Md Fxtr, 100W 12" Dia Industrial, w/Shallow Dome Refl	EA	51.74	7.87
1402	Pendant Md Fxtr, 150W 14" Dia Industrial, w/Shallow Dome Refl	EA	54.92	7.84
1403	Pendant Md Fxtr, 200W 16" Dia Industrial, w/Shallow Dome Refl	EA	60.13	7.81
1404	Pendant Md Fxtr, 300-500W 18"Dia Industrial, w/Shallow Dome Refl	EA	68.85	9.84
16614 1500 Shallow Dome - Ceiling Munt				
1501	Ceil Md Fxtr, 100W 12" Dia Industrial, w/Shallow Dome Refl	EA	41.93	7.84
1502	Ceil Md Fxtr, 150W 14" Dia Industrial, w/Shallow Dome Refl	EA	45.10	7.77
1503	Ceil Md Fxtr, 200W 16" Dia Industrial, w/Shallow Dome Refl	EA	50.35	7.77
1504	Ceil Md Fxtr, 300-500W 18"Dia Industrial, w/Shallow Dome Refl	EA	59.93	9.77
16614 1600 Shallow Dome - Angle Munt				
1601	Angl Md Fxtr, 100W 12" Dia Industrial, w/Shallow Dome Refl	EA	48.63	7.74
1602	Angl Md Fxtr, 150W 14" Dia Industrial, w/Shallow Dome Refl	EA	51.81	7.70
1603	Angl Md Fxtr, 200W 16" Dia Industrial, w/Shallow Dome Refl	EA	57.05	7.70
1604	Angl Md Fxtr, 300-500W 18"Dia Industrial, w/Shallow Dome Refl	EA	67.98	9.67
16614 1700 Symmetrical Angle Reflector Pendant				
1701	Pnnt Md(105A) Fxtr, 100W 8" Dia Industrial, w/Symm Angl Reflector	EA	56.76	9.84
1702	Pnnt Md(105A) Fxtr, 150W 10" Dia Industrial, w/Symm Angl Reflecto	EA	58.15	9.80
1703	Pnnt Md(105A) Fxtr, 200W 12" Dia Industrial, w/Symm Angl Reflecto	EA	67.28	9.74
1704	Pnnt Md(105A) Fxtr, 300-500W 14"D Industrial, w/Symm Angl Reflecto	EA	78.75	11.71
16614 1800 Symmetrical Angle Reflector Ceiling				
1801	Ceil Md(105B) Fxtr, 100W 8" Dia Industrial, w/Symm Angl Reflector	EA	46.94	7.77
1802	Ceil Md(105B) Fxtr, 150W 10" Dia Industrial, w/Symm Angl Reflecto	EA	48.34	7.74
1803	Ceil Md(105B) Fxtr, 200W 12" Dia Industrial, w/Symm Angl Reflecto	EA	57.51	7.70
1804	Ceil Md(105B) Fxtr, 300-500W 14"D Industrial, w/Symm Angl Reflecto	EA	68.92	9.67
16614 1900 Symmetrical Angle Reflector Angle				
1901	Angl Md(105A) Fxtr, 100W 8" Dia Industrial, w/Symm Angl Reflector	EA	53.64	7.67
1902	Angl Md(105A) Fxtr, 150W 10" Dia Industrial, w/Symm Angl Reflecto	EA	54.11	7.67
1903	Angl Md(105A) Fxtr, 200W 12" Dia Industrial, w/Symm Angl Reflecto	EA	64.21	7.64
1904	Angl Md(105A) Fxtr, 300-500W 14"D Industrial, w/Symm Angl Reflecto	EA	75.62	9.60
16614 2000 Vaportight Fixtures				
16614 2100 Dome Reflector - Pendant				
2101	Pnnt Md(109A2) Fxtr, 75-100W 12"D Indus, HD Encl & Gasket, Dome Ree	EA	83.43	11.34
2102	Pnnt Md(109A2) Fxtr, 150W 14"Dia Indus, HD Encl & Gasket, Dome Ree	EA	85.66	11.30
2103	Pnnt Md(109A2) Fxtr, 200W 16"Dia Indus, HD Encl & Gasket, Dome Ree	EA	91.62	11.31
2104	Pnnt Md(109A2) Fxtr, 300-500W 18" Indus, HD Encl & Gasket, Dome Ree	EA	105.01	12.98
16614 2200 Dome Reflector - Ceiling				
2201	Ceil Md(109A1) Fxtr, 75-100W 12"D Indus, HD Encl & Gasket, Dome Ree	EA	73.65	9.04
2202	Ceil Md(109A1) Fxtr, 150W 14"Dia Indus, HD Encl & Gasket, Dome Ree	EA	75.87	9.01
2203	Ceil Md(109A1) Fxtr, 200W 16"Dia Indus, HD Encl & Gasket, Dome Ree	EA	81.78	9.00
2204	Ceil Md(109A1) Fxtr, 300-500W 18" Indus, HD Encl & Gasket, Dome Ree	EA	95.21	10.97
16614 2300 30 Deg Dome Reflector - Pendant				
2301	Pnnt Md(109B2) Fxtr, 75-100W 12"D Ind, HD Encl & Gasket, Dome 30 De	EA	89.38	12.51
2302	Pnnt Md(109B2) Fxtr, 150W 14"Dia Ind, HD Encl & Gasket, Dome 30 De	EA	90.77	12.48
2303	Pnnt Md(109B2) Fxtr, 200W 16"Dia Ind, HD Encl & Gasket, Dome 30 De	EA	99.94	12.47
2304	Pnnt Md(109B2) Fxtr, 300-500W 18" Ind, HD Encl & Gasket, Dome 30 De	EA	114.32	15.01
16614 2400 30 Deg Dome Reflector - Ceiling				
2401	Ceil Md(109B1) Fxtr, 75-100W 12"D Ind, HD Encl & Gasket, Dome 30 De	EA	81.22	11.34
2402	Ceil Md(109B1) Fxtr, 150W 14"Dia Ind, HD Encl & Gasket, Dome 30 De	EA	82.61	11.34
2403	Ceil Md(109B1) Fxtr, 200W 16"Dia Ind, HD Encl & Gasket, Dome 30 De	EA	91.81	11.31

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2404	Ceiling Md(109B1)Fxt, 300-500W 18" Ind, HD Encl & Gasket, Dome 30 De	EA	104.80	13.61
16614 2500	Cast Metal Guard - Ceiling			
2501	Ceiling Md(108A)Fxt, 100W Indus, Encl & Gasket, w/Cncl Box	EA	58.71	7.37
2502	Ceiling Md(108A)Fxt, 150-200W Indus, Encl & Gasket, w/Cncl Box	EA	73.03	8.14
16614 2600	Cast Metal Guard - Bracket			
2601	Wall Md(Type 108B) Fxt, 100W Indus, Encl & Gasket, w/Cncl Box	EA	80.70	7.24
2602	Wall Md(Type 108B)Fxt, 150-200W Indus, Encl & Gasket, w/Cncl Box	EA	117.69	7.97
16614 2700	Enclosed And Gasketed (Vapor-Tight) Industrial Fixture Cast Alum Guard Integral Outlet Box			
2701	Ceiling Md(Type 106A) Fixture Indus, Encl & Gasket, w/Integr Box	EA	116.90	16.01
2702	Wall Md(Type 106B) Fixture Indus, Encl & Gasket, w/Integr Box	EA	124.81	16.01
2703	Pendant Md(Type 106C) Fixture Indus, Encl & Gasket, w/Integr Box	EA	102.21	16.01
16614 2800	Enclosed And Gasketed (Vapor-Tight) Industrial			
2802	Wall Md(Type 107B) Fixture Indus, Encl & Gasket, w/Exp Box	EA	101.89	16.01
2803	Pendant Md(Type 107C) Fixture Indus, Encl & Gasket, w/Exp Box	EA	97.73	16.01
16614 3000	Keyless Scket Fixtures			
16614 3100	Ball Socket With Tension Spring			
3101	Adjustable Lampholder (102)300W For Outlet Box	EA	19.98	7.60
3102	Porc Lphldr, Swless(Type 101A) Lampholder For Outlet Box	EA	15.68	6.07
3103	Porc Lphldr, Pull Sw(Type 101B) 4' Linen Cord&Bell, For Outlet Box	EA	17.13	6.14
16614 4000	Explosion Proof Fixture			
16614 4010	High Intensity Discharge Industrial Lighting			
4011	Haz Fxt, 100W Merc Vapor(710A1) IC, D; IIE, F, G; &III-w/o Reflector	EA	637.42	31.98
4012	Haz Fxt, 175W Merc Vapor(710B1) IC, D; IIE, F, G; &III-w/o Reflector	EA	660.14	31.98
4013	Haz Fxt, 175W Mt1 Halide(710C1) IC, D; IIE, F, G; &III-w/o Reflector	EA	782.51	31.98
4014	Haz Fxt, 100W HP Sodium(710D1) IC, D; IIE, F, G; &III-w/o Reflector	EA	782.51	31.98
4015	Haz Fxt, 150W HP Sodium(710D1) IC, D; IIE, F, G; &III-w/o Reflector	EA	824.46	31.98
16614 4020	EP Flush Mounted Floor Fixtures			
4021	EP 300W Incandescent Floor Fixture	EA	820.86	96.42
16614 4030	High Intensity Discharge Industrial Lighting			
4031	Haz Fxt, 100W Merc Vapor(713A1) Div 2-IC, D; IIE, F, G; &III-w/o Refl	EA	415.30	31.98
4032	Haz Fxt, 175W Merc Vapor(713B1) Div 2-IC, D; IIE, F, G; &III-w/o Refl	EA	406.98	31.98
4033	Haz Fxt, 175W Mt1 Halide(713C1) Div 2-IC, D; IIE, F, G; &III-w/o Refl	EA	558.88	31.98
4034	Haz Fxt, 100W HP Sodium(713D1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	507.38	31.98
4035	Haz Fxt, 150W HP Sodium(713E1) Div 2-IC, D; IIE, F, G; &III-w/o Refl	EA	511.08	31.98
16614 4040	High Intensity Discharge Industrial Lighting			
4041	Haz Fxt, 100W Merc Vapor(714A1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	509.91	31.98
4042	Haz Fxt, 175W Merc Vapor(714B1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	485.78	31.98
4043	Haz Fxt, 175W Mt1 Halide(714C1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	447.18	31.98
4044	Haz Fxt, 100W HP Sodium(714D1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	597.04	31.98
4045	Haz Fxt, 150W HP Sodium(714E1) Div 2-IC, D; IIE, F, G; &III-Std Refl	EA	601.33	31.98
16614 4050	High Intensity Discharge Industrial Lighting			
4051	Haz Fxt, 100W Merc Vapor(715A1) Div 2-IC, D; IIE, F, G; &III-30D Refl	EA	406.85	31.98
4052	Haz Fxt, 175W Merc Vapor(715B1) Div 2-IC, D; IIE, F, G; &III-30D Refl	EA	399.29	31.98
4053	Haz Fxt, 175W Mt1 Halide(715C1) Div 2-IC, D; IIE, F, G; &III-30D Refl	EA	368.84	31.98
4054	Haz Fxt, 100W HP Sodium(715D1) Div 2-IC, D; IIE, F, G; &III-30D Refl	EA	486.22	31.98
4055	Haz Fxt, 150W HP Sodium(715E1) Div 2-IC, D; IIE, F, G; &III-30D Refl	EA	489.58	31.98
16614 4100	Pendant Munt - Standard Domes			
4101	EP Incand Fxt, 75W(702)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	308.68	20.05
4102	EP Incand Fxt, 100W(702)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	308.68	20.05
4103	EP M Fxt, 100W (711A1)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	816.36	25.41
4104	EP HPS Fxt, 100W(711D1)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	989.17	25.35
4105	EP Incand Fxt, 150W(702)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	479.56	21.78
4106	EP M Fxt, 175W (711B1)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	851.64	29.78
4107	EP HPS Fxt, 150W(711E1)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	1,047.35	29.68
4108	EP MH Fxt, 175W(711C1)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	997.38	29.72
4109	EP Incand Fxt, 200-300W(702)Pnnt IC, D; IIE, F, G; &III-Std Dome Refl	EA	490.91	26.48
4111	EP M Fxt, 200-300W(711)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	656.33	60.27
4112	EP HPS Fxt, 200-300(711)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	812.77	60.00
4113	EP MH Fxt, 200-300W(711)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	620.18	60.37
4114	EP Incand Fxt, 300-500W(702)Pnnt IC, D; IIE, F, G; &III-Std Dome Refl	EA	373.58	28.22
4115	EP M Fxt, 300-500W(711)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	777.31	36.56
4116	EP HPS Fxt, 300-500(711)Pnnt Md IC, D; IIE, F, G; &III-Std Dome Refl	EA	815.83	36.52

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4117	EP MH Fxtr, 300-500W(711)Pnnt Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	725.95	36.62
16614 4200	Pendant Munt - Shallow Dome			
4201	EP Incand Fxtr, 75W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	212.97	20.35
4202	EP Incand Fxtr, 100W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	212.97	20.35
4203	EP M Fxtr, 100W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	501.78	25.68
4204	EP HPS Fxtr, 100W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	577.53	25.58
4205	EP Incand Fxtr, 150W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	217.73	22.38
4206	EP M Fxtr, 175W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	550.78	30.05
4207	EP HPS Fxtr, 150W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	609.05	29.98
4208	EP MH Fxtr, 175W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	492.51	30.15
4209	EP Incand Fxtr, 200-300W IC, D; IIE, F, G; &III-Shallow Dome	EA	236.07	27.28
4211	EP M Fxtr, 200-300W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	603.21	33.05
4212	EP HPS Fxtr, 200-300 Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	675.29	32.99
4213	EP MH Fxtr, 200-300W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	570.41	33.12
4214	EP Incand Fxtr, 300-500W Pnnt Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	262.93	30.95
4215	EP M Fxtr, 300-500W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	714.49	39.66
4216	EP HPS Fxtr, 300-500 Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	749.45	39.59
4217	EP MH Fxtr, 300-500W Pendant Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	667.88	39.72
16614 4300	Pendant Munt - Angle Dome			
4301	EP Incand Fxtr, 75W (703)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	308.68	20.05
4302	EP Incand Fxtr, 100W(703)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	308.68	26.65
4303	EP M Fxtr, 100W (712A1)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	810.70	26.21
4304	EP HPS Fxtr, 100W(712D1)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	983.50	26.15
4305	EP Incand Fxtr, 150W(703)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	484.04	21.75
4306	EP M Fxtr, 175W (712B1)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	845.97	29.78
4307	EP HPS Fxtr, 150W(712E1)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,041.68	29.68
4308	EP MH Fxtr, 175W(712C1)Pendant Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	991.71	29.72
4309	EP Incand Fxtr, 200-300W(703)Pnnt IC, D; IIE, F, G; &III-Angl Dome Refl	EA	495.39	26.48
4311	EP M Fxtr, 200-300W(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	661.89	60.27
4312	EP HPS Fxtr, 200-300(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	735.74	60.10
4313	EP MH Fxtr, 200-300W(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	620.18	60.37
4314	EP Incand Fxtr, 300-500W(703)Pnnt IC, D; IIE, F, G; &III-Angl Dome Refl	EA	373.58	30.45
4315	EP M Fxtr, 300-500W(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	777.31	39.56
4316	EP HPS Fxtr, 300-500(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	815.83	39.52
4317	EP MH Fxtr, 300-500W(712)Pnnt Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	725.95	39.62
16614 4400	Ceiling Munt - Standard Dome			
4401	EP Incand Fxtr, 75W(702)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	305.28	18.65
4402	EP Incand Fxtr, 100W(702)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	305.28	18.65
4403	EP M Fxtr, 100W (711A1)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	543.15	25.05
4404	EP HPS Fxtr, 100W(711D1)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	626.60	24.98
4405	EP Incand Fxtr, 150W(702)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	308.68	20.05
4406	EP M Fxtr, 175W (711B1)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	594.57	27.75
4407	EP HPS Fxtr, 150W(711E1)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	658.77	27.72
4408	EP MH Fxtr, 175W(711C1)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	530.37	27.85
4409	EP Incand Fxtr, 200-300W(702)Ceil IC, D; IIE, F, G; &III-Std Dome Refl	EA	335.85	26.82
4411	EP M Fxtr, 200-300W(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	695.66	29.88
4412	EP HPS Fxtr, 200-300(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	727.76	29.85
4413	EP MH Fxtr, 200-300W(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	612.20	29.98
4414	EP Incand Fxtr, 300-500W(702)Ceil IC, D; IIE, F, G; &III-Std Dome Refl	EA	368.78	28.15
4415	EP M Fxtr, 300-500W(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	769.79	36.49
4416	EP HPS Fxtr, 300-500(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	808.31	36.45
4417	EP MH Fxtr, 300-500W(711)Ceil Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	718.43	36.55
16614 4500	Ceiling Munt - Shallow Dome			
4501	EP Incand Fxtr, 75W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	209.77	18.91
4502	EP Incand Fxtr, 100W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	209.77	18.91
4503	EP M Fxtr, 100W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	498.70	25.08
4504	EP HPS Fxtr, 100W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	574.45	25.02
4505	EP Incand Fxtr, 150W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	212.97	20.35
4506	EP M Fxtr, 175W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	545.98	27.82
4507	EP HPS Fxtr, 150W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	604.25	27.75
4508	EP MH Fxtr, 175W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	487.71	27.92
4509	EP Incand Fxtr, 200-300W IC, D; IIE, F, G; &III-Shallow Dome	EA	236.07	27.28
4511	EP M Fxtr, 200-300W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	638.18	29.95
4512	EP HPS Fxtr, 200-300 Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	667.31	29.92

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4513	EP MH Fxtr, 200-300W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	562.43	30.05
4514	EP Incand Fxtr, 300-500W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	258.13	28.62
4515	EP M Fxtr, 300-500W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	706.97	36.55
4516	EP HPS Fxtr, 300-500 Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	741.93	36.52
4517	EP MH Fxtr, 300-500W Ceil Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	660.36	36.62
16614 4600 Ceiling Munt - Angle Dome				
4601	EP Incand Fxtr, 75W (703)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	305.48	18.65
4602	EP Incand Fxtr, 100W(703)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	613.65	18.38
4603	EP M Fxtr, 100W (712A1)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	834.68	24.85
4604	EP HPS Fxtr, 100W(712D1)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,005.41	24.78
4605	EP Incand Fxtr, 150W(703 Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	610.87	19.75
4606	EP M Fxtr, 175W (712B1)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	870.32	27.58
4607	EP HPS Fxtr, 150W(712E1)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	658.77	27.72
4608	EP MH Fxtr, 175W(712C1)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,013.98	27.52
4609	EP Incand Fxtr, 200-300W(703)Ceil IC, D; IIE, F, G; &III-Angl Dome Refl	EA	335.85	26.82
4611	EP M Fxtr, 200-300W(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	695.66	29.88
4612	EP HPS Fxtr, 200-300(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	727.76	29.85
4613	EP MH Fxtr, 200-300W(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	612.20	29.98
4614	EP Incand Fxtr, 300-500W(703)Ceil IC, D; IIE, F, G; &III-Angl Dome Refl	EA	368.78	28.15
4615	EP M Fxtr, 300-500W(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	769.79	36.49
4616	EP HPS Fxtr, 300-500(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	808.31	36.45
4617	EP MH Fxtr, 300-500W(712)Ceil Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	718.43	36.55
16614 4700 Wall Bracket - Standard Dome				
4701	EP Incand Fxtr, 75W(702)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	303.75	17.78
4702	EP Incand Fxtr, 100W(702)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	643.32	17.51
4703	EP M Fxtr, 100W (711A1)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	866.02	23.48
4704	EP HPS Fxtr, 100W(711D1)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	1,032.59	23.41
4705	EP Incand Fxtr, 150W(702)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	600.40	19.75
4706	EP M Fxtr, 175W (711B1)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	892.40	24.82
4707	EP HPS Fxtr, 150W(711E1)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	1,090.19	24.75
4708	EP MH Fxtr, 175W(711C1)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	1,044.39	24.78
4709	EP Incand Fxtr, 200-300W(702)Wall IC, D; IIE, F, G; &III-Std Dome Refl	EA	330.98	24.81
4711	EP M Fxtr, 200-300W(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	683.79	24.95
4712	EP HPS Fxtr, 200-300(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	719.55	24.91
4713	EP MH Fxtr, 200-300W(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	603.99	25.01
4714	EP Incand Fxtr, 300-500W(702)Wall IC, D; IIE, F, G; &III-Std Dome Refl	EA	368.33	27.88
4715	EP M Fxtr, 300-500W(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	761.42	32.89
4716	EP HPS Fxtr, 300-500(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	799.94	32.85
4717	EP MH Fxtr, 300-500W(711)Wall Mtd IC, D; IIE, F, G; &III-Std Dome Refl	EA	709.49	32.92
16614 4800 Wall Bracket - Shallow Dome				
4801	EP Incand Fxtr, 75W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	208.04	18.04
4802	EP Incand Fxtr, 100W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	208.04	18.04
4803	EP M Fxtr, 100W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	495.23	23.71
4804	EP HPS Fxtr, 100W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	570.98	23.61
4805	EP Incand Fxtr, 150W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	212.57	20.35
4806	EP M Fxtr, 175W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	539.49	25.05
4807	EP HPS Fxtr, 150W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	597.76	24.98
4808	EP MH Fxtr, 175W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	481.22	25.12
4809	EP Incand Fxtr, 200-300W IC, D; IIE, F, G; &III-Shallow Dome	EA	231.20	25.21
4811	EP M Fxtr, 200-300W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	626.65	26.35
4812	EP HPS Fxtr, 200-300 Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	659.10	26.31
4813	EP MH Fxtr, 200-300W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	554.22	26.41
4814	EP Incand Fxtr, 300-500W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	257.68	28.35
4815	EP M Fxtr, 300-500W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	698.60	32.95
4816	EP HPS Fxtr, 300-500 Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	733.56	32.92
4817	EP MH Fxtr, 300-500W Wall Mtd IC, D; IIE, F, G; &III-Shallow Dome	EA	651.99	32.99
16614 4900 Wall Bracket - Angle Dome				
4901	EP Incand Fxtr, 75W (703)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	303.75	17.78
4902	EP Incand Fxtr, 100W(703)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	303.75	17.78
4903	EP M Fxtr, 100W (712A1)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	860.36	23.48
4904	EP HPS Fxtr, 100W(712D1)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,026.92	23.41
4905	EP Incand Fxtr, 150W(703 Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	604.89	19.75
4906	EP M Fxtr, 175W (712B1)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	886.73	24.82
4907	EP HPS Fxtr, 150W(712E1)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,084.52	24.75

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4908	EP MH Fxtr, 175W(712C1)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Refl	EA	1,038.72	24.78
4909	EP Incand Fxtr, 200-300W(703)Wall IC, D; IIE, F, G; &III-Angl Dome Ref	EA	330.98	24.81
4911	EP M Fxtr, 200-300W(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	687.45	26.31
4912	EP HPS Fxtr, 200-300(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	719.55	26.28
4913	EP MH Fxtr, 200-300W(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	603.99	26.38
4914	EP Incand Fxtr, 300-500W(703)Wall IC, D; IIE, F, G; &III-Angl Dome Ref	EA	368.78	27.88
4915	EP M Fxtr, 300-500W(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	761.42	32.89
4916	EP HPS Fxtr, 300-500(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	799.94	32.85
4917	EP MH Fxtr, 300-500W(712)Wall Mtd IC, D; IIE, F, G; &III-Angl Dome Ref	EA	710.06	32.92
16614 5000	Dust Ignition Proof Fixture			
16614 5100	Pendant Mounted - Standard Dome			
5101	DP Incan Fxtr, 100-150W(706A)Pnnt NEC IIE, F, G; &III-Std Dome Refl	EA	263.47	12.24
5102	DP Incan Fxtr, 200-300W(706A)Pnnt NEC IIE, F, G; &III-Std Dome Refl	EA	338.72	12.21
16614 5200	Pendant Mounted - Shallow Dome			
5201	DP Incan Fxtr, 100-150W(708A)Pnnt NEC IIE, F, G; &III-Shlw Dome Refl	EA	263.47	12.24
5202	DP Incan Fxtr, 200-300W(708A)Pnnt NEC IIE, F, G; &III-Shlw Dome Refl	EA	338.72	12.21
16614 5300	Pendant Mounted - Angle Dome			
5301	DP Incan Fxtr, 100-150W(707A)Pnnt NEC IIE, F, G; &III-Angle Dome Ref	EA	263.47	12.24
5302	DP Incan Fxtr, 200-300W(707A)Pnnt NEC IIE, F, G; &III-Angle Dome Ref	EA	338.72	12.21
16614 5400	Ceiling Mounted - Standard Dome			
5401	DP Incan Fxtr, 100-150W(706A)Ceil NEC IIE, F, G; &III-Std Dome Refl	EA	260.26	11.40
5402	DP Incan Fxtr, 200-300W(706A)Ceil NEC IIE, F, G; &III-Std Dome Refl	EA	335.53	11.37
16614 5500	Ceiling Mounted - Shallow Dome			
5501	DP Incan Fxtr, 100-150W(708A)Ceil NEC IIE, F, G; &III-Shlw Dome Refl	EA	260.26	11.40
5502	DP Incan Fxtr, 200-300W(708A)Ceil NEC IIE, F, G; &III-Shlw Dome Refl	EA	335.53	11.37
16614 5600	Ceiling Mounted - Angle Dome			
5601	DP Incan Fxtr, 100-150W(707A)Ceil NEC IIE, F, G; &III-Angle Dome Ref	EA	260.26	11.40
5602	DP Incan Fxtr, 200-300W(707A)Ceil NEC IIE, F, G; &III-Angle Dome Ref	EA	335.53	11.37
16614 5700	Industrial Incandescent Fixture For Use In Nec			
5701	Haz Fxtr, NEC II-E, F, G; &III(705A) Pendant Mtd, w/o Refl, Gd	EA	178.82	30.42
5702	Haz Fxtr, NEC II-E, F, G; &III(705B) Ceiling Mtd, w/o Refl, Gd	EA	183.65	30.42
5703	Haz Fxtr, NEC II-E, F, G; &III(705C) Bracket Mtd, w/o Refl, Gd	EA	230.58	30.42
16614 5800	Industrial Incandescent Fixture For Use In Nec			
5802	Haz Fxtr, NEC II-E, F, G; &III(706B) Ceiling Mtd, Std Dome Refl	EA	221.76	30.42
16614 5900	Pendant Mounted Industrial Fluorescent Fixture			
5901	Haz Flour Fxtr II-F, G; &III(709A) Pendant Mtd, 2-40W Fluorescent	EA	2,458.14	34.59
5902	Haz Flour Fxtr II-F, G; &III(709B) Pendant Mtd, 3-40W Fluorescent	EA	4,501.92	34.59
16614 6000	Fluorescent Strip Lighting 40 Watt Rapid Start			
16614 6100	Strip Light - No Reflector			
6101	Surf Fluor Strip Fxtr, 1-40W(220A) w/o Reflector	EA	56.45	12.14
6102	Surf Fluor Strip Fxtr, 2-40W(220B) w/o Reflector	EA	80.80	11.94
16614 6200	Strip Light - Asymmetric Aluminum Reflector			
6201	Surf Fluor Strip Fxtr, 1-40W(222A) w/ Asymmetric Aluminum Reflecto	EA	85.05	10.71
6202	Surf Fluor Strip Fxtr, 2-40W(222B) w/ Asymmetric Aluminum Reflecto	EA	104.17	10.67
16614 6300	Strip Light Asymmetric Porcelain Reflector			
6301	Surf Fluor Strip Fxtr, 1-40W(222A) w/Asymmetric Porcelain Reflecto	EA	112.99	10.54
6302	Surf Fluor Strip Fxtr, 2-40W(222B) w/Asymmetric Porcelain Reflecto	EA	136.37	10.54
16614 6400	Strip Light Asymmetric White Reflector			
6401	Surf Fluor Strip Fxtr, 1-40W(222A) w/ Asymmetric White Reflector	EA	85.05	10.71
6402	Surf Fluor Strip Fxtr, 2-40W(222B) w/ Asymmetric White Reflector	EA	104.17	10.67
16614 6500	Strip Light Symmetric Aluminum Reflector			
6501	Surf Fluor Strip Fxtr, 1-40W(221A) w/Symmetric Aluminum Reflector	EA	85.05	10.71
6502	Surf Fluor Strip Fxtr, 2-40W(221B) w/Symmetric Aluminum Reflector	EA	104.17	10.67
16614 6600	Strip Light - Symmetric Porcelain Reflector			
6601	Surf Fluor Strip Fxtr, 1-40W(221A) w/Symmetric Porcelain Reflector	EA	107.97	10.57
6602	Surf Fluor Strip Fxtr, 2-40W(221B) w/Symmetric Porcelain Reflector	EA	129.67	10.57
16614 6700	Strip Light - Symmetric White Reflector			
6701	Surf Fluor Strip Fxtr, 1-40W(221A) w/Symmetric White Reflector	EA	85.05	10.71
6702	Surf Fluor Strip Fxtr, 2-40W(221B) w/Symmetric White Reflector	EA	104.17	10.67
16614 7000	Fluorescent Fixtures			
16614 7100	Two (2) Lamp Unit, Open End Fixture, 40 Watt Rapid Start			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
7101	Suspnsn Mtd Ind Fluor Extr, (230a Open Type, 4', 2-40W Individ Mtd	EA	135.24	11.37
7102	Suspnsn Mtd Ind Fluor Extr, (230a Open Type, 4', 2-40W Continous Mt	EA	121.58	11.41
16614 7200	Three (3) Lamp Unit, Open End Fixture, 40 Wttt Rapid Start			
7201	Suspnsn Mtd Ind Fluor Extr, (230b Open Type, 4', 3-40W Individ Mtd	EA	199.66	12.61
7202	Suspnsn Mtd Ind Fluor Extr, (230b Open Type, 4', 3-40W Continous Mt	EA	155.50	12.74
16614 7300	Suspension Munted Industrial Open Type Fixture 8-Foot			
7301	Suspnsn Mtd Ind Fluor Extr, (231a Open Type, 8' Lamps, 2-800MA	EA	136.20	16.17
7302	Suspnsn Mtd Ind Fluor Extr, (231b Open Type, 8' Lamps, 3-800MA	EA	214.82	17.58
7303	Suspnsn Mtd Ind Fluor Extr, (231c Open Type, 8' Lamps, 2-1500MA	EA	256.76	17.58
16614 7400	Strip Lighting			
7401	8' Fluorescent Strip Light 2 Tube Tandem	EA	79.88	11.34
16614 8000	Fluorescent Vaportight Fixture			
16614 8100	Two (2) Lamp 40 Wttt Rapid Start			
8101	Encl & Gskt, VT, Fluor Extr, (232) 4', Surface Mbunting	EA	257.48	18.71
8102	Encl & Gskt, VT, Fluor Extr, (232) 4', Pendant Mbunting	EA	264.01	18.78
16614 8200	2-Lamp, 8 Ft, WP, High Output			
8201	Encl & Gskt, VT, Fluor Extr, (233) 8', Surface Mbunting	EA	423.79	26.99
8202	Encl & Gskt, VT, Fluor Extr, (233) 8', Pendant Mbunting	EA	435.68	32.45
16614 9000	Fluorescent Explosion Or Dust Proof 40 Wttt Rapid Start			
16614 9100	Heavy Duty Glass Lamp (E. P.)			
9101	EP or DP Fluor Fixture 1 HD 40W	EA	682.74	41.63
9102	EP or DP Fluor Fixture 2 HD 40W	EA	817.18	41.49
9103	EP or DP Fluor Fixture 4 HD 40W	EA	1,092.33	57.87
16614 9200	Heat Resistant Glass Door			
9201	EP or DP Fluor Fixture 2 HD 40W Heat Resistant Glass Door	EA	447.56	33.39
16614 9500	High-Low Bay Fixtures			
16614 9510	Open Or Closed H.I.D. Luminaire			
9511	HPS HID Extr, 250W(301B)Pnnt Mtd High-low Bay Fixtures	EA	259.46	18.08
9512	HPS HID Extr, 400W(301B)Pnnt Mtd High-low Bay Fixtures	EA	264.19	27.95
9513	HPS HID Extr, 1000W(301B)Pnnt Mtd High-low Bay Fixtures	EA	329.92	27.72
9514	M HID Extr, 175W Pendant Mtd High-low Bay Fixtures	EA	243.59	23.68
9515	M HID Extr, 250W Pendant Mtd High-low Bay Fixtures	EA	243.59	23.68
9516	M HID Extr, 400W Pendant Mtd High-low Bay Fixtures	EA	276.65	27.88
9517	M HID Extr, 1000W Pendant Mtd High-low Bay Fixtures	EA	323.69	27.75
16614 9520	Mounting Box For Pendant Munt High-Bay Fixtures			
Note: Mbunting Up To 40'. Includes Mbunting Fasteners. Box Includes Hook, Loop, Cord, Twist Lock 125V, 20Amp Plug And Receptacle.				
9521	Mbunting Box For High Bay Fixtures	EA	166.67	44.13
16615	Lighting Fixtures			
16615 1000	Removal & Reinstallation Of Light Fixtures			
1001	Remove & Reinstall Lay-In Fluorescent Light Fixture	EA	48.72	
1002	Remove & Reinstall Surface Mtd Light Fixture	EA	68.77	
1003	Remove/Relocate High Hat Lightin g Fixture	EA	25.00	
16615 2000	Lighting Accessories			
16615 2100	Photocells			
2101	Photocell Plug-in For Roadway Lighting Fixtures	EA	65.65	
16615 2200	Fixture Whips			
2201	Fixture Whip For Lay-in Lights 6 Ft Flexible Conduit, 2	EA	17.92	
16615 2300	Electronic Ballasts			
2301	Added Cost For Replacement Electronic Ballast	EA	67.08	
2306	Ballast Dimmable 1-Lamp	EA	94.21	
2307	Ballast Dimmable 2-Lamp	EA	131.70	
16615 2400	Replacement Lens For Lay-in Fixture			
2401	Acrylic Replacement Lens, .125Tk, 2'x4', Commercial Type, For Lay-i	EA	26.97	
16615 3000	High Efficiency Lamps Mdfifiers			
Note: Added Costs For Replacement Of Standard Lamps Used In Light Fixtures. Cost Per Each Lamp.				
16615 3100	Nitrogen Argon Gas Filled Incandescent Lamps			
Note: Average 10,000 hours				
3101	Nitrogen Argon Gas Filled Lamp Upgrade For Incandenscent Lamps	EA	15.75	
16615 3200	High Energy Fluorescent Lamps, Argon-Krypton			
Note: Argon-Krypton Gas Mixture Or Other Chemicals. Replaces Regular Argon Gas Lamps As Used In Standard 40W F40 T-12 Cool White Lamps.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16615 3210	T-8 Fluorescent Lamp Mdfifiers			
3211	32W F32, T-8 Lamp Upgrade	EA	5.12	
16615 3220	T-10 Fluorescent Lamp Mdfifiers			
3221	40W F40, T-10 Lamp Upgrade	EA	7.40	
16615 3230	T-12 Fluorescent Lamp Mdfifiers			
3231	34W F40, T-12 Lamp Upgrade	EA	10.55	
3232	40W F40, T-12 Lamp Upgrade	EA	11.54	
16615 4000	Fluorescent Lamp Removal (from fixture),			
	Note: Place in Cardboard Box and transfer to on-site storage area. Includes Containers.			
4001	Fluorescent Lamp Removal	EA	0.24	
16615 5000	Fluorescent Lamp Ballast Removal			
	Note: (from light fixture), Package in DOT approved drums and transfer on pallets to on-site storage area. Includes Containers			
5001	Fluorescent Light Ballast Removal	EA	2.26	
16615 6000	Lamps For Replacement In Existing Fixtures			
16615 6200	Incandescent			
6201	Typical Lamp	EA	10.16	
6202	100 Watt Or Less	EA	5.18	
6204	150 To 300 Watt	EA	10.32	
6206	375 To 500 Watt	EA	16.93	
6208	750 To 1500 Watt	EA	42.95	
16615 6400	Fluorescent			
6401	Typical Lamp	EA	12.20	
6402	2' Miser Rapid/Trig	EA	9.36	
6403	3' Miser Rapid/Trig	EA	11.32	
6404	4' Miser Rapid/Trig	EA	8.66	
6406	4' Miser Slim	EA	13.98	
6408	8' Miser Slim	EA	20.01	
16615 6500	Mercury Vapor			
6501	100 Watt	EA	36.98	
6502	175 Watt	EA	30.68	
6503	250 Watt	EA	47.80	
6504	400 Watt	EA	39.57	
6505	1000 Watt	EA	79.82	
16615 6600	Metal Halide			
6601	175 Watt	EA	58.04	
6602	250 Watt	EA	70.67	
6603	400 Watt	EA	70.88	
6604	1000 Watt	EA	143.08	
6605	1500 Watt	EA	143.96	
16615 6700	Sodium - High Pressure			
6701	70 Watt	EA	70.67	
6702	100 Watt	EA	72.75	
6703	150 Watt	EA	75.21	
6704	250 Watt	EA	79.41	
6705	400 Watt	EA	83.97	
6706	1000 Watt	EA	188.43	
16615 6800	Sodium - Low Pressure			
6801	35 Watt	EA	60.85	
6802	55 Watt	EA	66.39	
6803	90 Watt	EA	76.28	
6804	135 Watt	EA	99.42	
6805	180 Watt	EA	104.69	
16615 6900	Ball Field And Tennis Court Lamps			
6901	Replace Lamps In Ball Field Or Tennis Courts	EA	218.71	
16616	Lighting			
16616 0999	Wall Mounted			
16616 1000	Opal Globe			
16616 1100	Type 124 Incandescent			
1101	Ext Wall Incand Extr(124A)100W w/o Guard, 1 Lamp, Encl & Gasketed	EA	26.15	5.90
1102	Ext Wl Incan Extr(124A)150-200W w/o Guard, 1 Lamp, Encl & Gasketed	EA	48.00	5.67

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1103	Ext Wall Incand Fxtr(124B)100W w/ Guard, 1 Lamp, Encl & Gasketed	EA	34.54	5.74
1104	Ext Wl Incan Fxtr(124B)150-200W w/ Guard, 1 Lamp, Encl & Gasketed	EA	51.24	5.63
16616 1300 Dimming Ballasts, Lutron "Hi-Lume"				
1301	1 Lamp 4' T-8 32W 120V 1% Dimming Ballast	EA	113.33	
1302	2 Lamp 4' T-8 32W 120V 1% Dimming Ballast	EA	115.00	
1303	2 Lamp 2' T-8 17W 120V 1% Dimming Ballast	EA	115.00	
1304	1 Lamp 4' T-8 32W 277V 1% Dimming Ballast	EA	125.09	
1305	2 Lamp 4' T-8 32W 277V 1% Dimming Ballast	EA	126.76	
1306	2 Lamp 2' T-8 17W 277V 1% Dimming Ballast	EA	126.76	
16616 2000 Prismatic Glass				
16616 2100 High Intensity Discharge				
2101	175W MH HID Fxtr, Ext Wall, 501A Security, w/Prismatic Glass Lens	EA	235.83	7.50
2102	70W HPS HID Fxtr, Ext Wall, 501B 70 Watt High Pressure Sodium	EA	253.50	7.50
2103	100W HPS HID Fxtr, Ext Wall, 501C 100 Watt High Pressure Sodium	EA	182.81	7.50
2104	175W MH HID Fxtr, Ext Wall, 502A 175 Watt Mercury Vapor Lamp	EA	159.25	7.34
2105	70W HPS HID Fxtr, Ext Wall, 502B 70 Watt High Pressure Sodium	EA	151.62	7.50
2106	100W HPS HID Fxtr, Ext Wall, 502C 100 Watt High Pressure Sodium	EA	154.98	7.50
16616 3000 Prismatic Glass				
16616 3100 High Intensity Discharge				
3101	250W MH HID Fxtr, Ext Wall, 503A 250 Watt Mercury Vapor Lamp	EA	223.50	11.40
3102	400W MH HID Fxtr, Ext Wall, 503B 400 Watt Mercury Vapor Lamp	EA	256.23	11.47
3103	250W HPS HID Fxtr, Ext Wall, 503C 250 Watt High Pressure Sodium	EA	241.41	11.40
16616 4000 Step Light				
4101	150W Incand Recessed Step Light Fxtr, Wall Mtd	EA	91.07	16.12
16616 5000 Security-High Intensity Discharge Fixtures				
16616 5040 100 W Mercury Vapor Fixture				
5041	Security HID Fxtr, Ext Wall, 504 100 Watt Mercury Vapor Lamp	EA	140.27	22.39
16616 6000 Flood Lights				
16616 6010 Tungsten Halogen Quartz				
16616 6012 Type 508				
6014	100W Qz Flood Fxtr, Pole, 404A	EA	108.56	16.44
6016	HD Quartz Flood Fxtr, 508, 1500W	EA	126.49	16.51
6018	250W Qz Flood Fixture	EA	60.49	17.15
6020	500W Qz Flood Fixture	EA	61.95	17.69
6022	1000W Qz Flood Fixture	EA	92.21	18.36
16616 6052 Type 505, 506, 507				
16616 6060 Mercury Vapor				
6062	400W MH Flood Fxtr, Ext Wall, 505A	EA	531.94	43.33
6064	1000W MH Fld Fxtr, Ext Wall, 505B	EA	322.53	60.41
6066	400W MH Flood Fxtr, Ext Wall, 506A	EA	359.59	55.52
6068	1000W MH Fld Fxtr, Ext Wall, 506B	EA	461.58	82.66
6070	400W MH Flood Fxtr, Slip Fit, 507A	EA	500.34	63.01
6072	1000W MH Fld Fxtr, Slip Fit, 507A	EA	662.73	87.44
16616 6080 Metal Halide				
6082	400W MH Flood Fxtr, Ext Wall, 505C	EA	591.60	43.15
6084	1000W MH Fld Fxtr, Ext Wall, 505D	EA	434.44	59.02
6086	400W MH Flood Fxtr, Ext Wall, 506B	EA	371.11	55.41
6088	1000W MH Fld Fxtr, Ext Wall, 506B	EA	462.20	82.66
6090	400W MH Flood Fxtr, Slip Fit, 507B	EA	500.34	63.01
6092	1000W MH Fld Fxtr, Slip Fit, 507B	EA	662.73	87.44
16616 6100 High Pressure Sodium				
6102	400W HPS Fld Fxtr, Ext Wall, 505E	EA	336.77	47.93
6104	400W HPS Fld Fxtr, Ext Wall, 506C	EA	459.86	63.33
6106	1000W HPS Fld Fxtr, Ext Wall, 505F	EA	565.96	88.44
16616 6110 Incandescent				
6112	100W Incand Flood Fxtr, WP PAR 38 Swivel Knuckle Mounting	EA	27.12	3.99
16616 6150 Emergency Remote Floodlights				
16616 6160 Emergency Remote Mounted 12 Volt Floodlight For Use With Type 600 Power Supply Unit				
6162	13 Watt Lamp (Type 601A) Emer Remote Mtd 12VDC FloodLight	EA	53.82	14.62
6164	18 Watt Lamp (Type 601B) Emer Remote Mtd 12VDC FloodLight	EA	57.48	14.62
6166	25 Watt Lamp (Type 601C) Emer Remote Mtd 12VDC FloodLight	EA	57.48	14.62

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6168	38 Watt Lamp (Type 601D) Emer Remote Mtd 12VDC FloodLight	EA	83.89	14.62
16616 7000	Street Lighting			
16616 7010	Mercury Vapor			
7012	175W M/ Ext Rdwy Fxtr, 403A w/Wood Pole Bracket	EA	195.91	62.97
7014	Ext Rdwy 100W M/ Fxtr, E&G, (402A)	EA	267.20	48.74
7016	Ext Rdwy 175W M/ Fxtr, E&G, (402A)	EA	329.64	48.07
7018	Ext Rdwy 250W M/ Fxtr, E&G, (402A)	EA	347.40	48.03
7020	Ext Rdwy 400W M/ Fxtr, E&G, (402A)	EA	380.11	58.52
7022	Ext Rdwy 1000W M/ Fxtr, E&G, (402A)	EA	564.03	82.90
16616 7030	Metal Halide			
7032	Ext Rdwy 400W M/ Fxtr, E&G, (402B)	EA	380.11	85.53
7034	Ext Rdwy 1000W M/ Fxtr, E&G, (402B)	EA	577.86	85.13
16616 7050	High Pressure Sodium			
7052	Ext Rdwy 100W HPS Fxtr, E&G, 402C	EA	254.74	55.29
7054	Ext Rdwy 175W HPS Fxtr, E&G, 402C	EA	299.17	57.32
7056	Ext Rdwy 250W HPS Fxtr, E&G, 402C	EA	341.64	58.83
7058	Ext Rdwy 400W HPS Fxtr, E&G, 402C	EA	380.11	85.53
7060	Ext Rdwy 1000W HPS Fxtr, E&G, 402C	EA	468.42	86.56
16616 8000	Area Lighting			
16616 8010	Mercury Vapor			
8012	1000W High Mast M/ Fxtr, (404A) Area Lighting	EA	614.98	94.43
8014	Ext Rect 175W M/ Fxtr, E&G, (401A) Side Mtd, Area Lighting	EA	313.06	52.20
8016	Ext Rect 250W M/ Fxtr, E&G, (401A) Side Mtd, Area Lighting	EA	395.10	57.04
8018	Ext Rect 400W M/ Fxtr, E&G, (401A) Side Mtd, Area Lighting	EA	467.82	62.13
8020	Ext Rect 1000W M/ Fxtr, E&G, (401A) Side Mtd, Area Lighting	EA	534.08	100.34
16616 8030	Metal Halide			
8032	1000W High Mast MH Fxtr, (404C) Area Lighting	EA	632.40	99.23
8034	Ext Rect 400W MH Fxtr, E&G, (401B) Side Mtd, Area Lighting	EA	467.82	87.91
8036	Ext Rect 1000W MH Fxtr, E&G, (401B) Side Mtd, Area Lighting	EA	570.95	99.86
16616 8050	High Pressure Sodium			
8052	1000W High Mast HPS Fxtr, (404E) Area Lighting	EA	676.05	98.83
8054	Ext Rect 175W HPS Fxtr, E&G, (401C) Side Mtd, Area Lighting	EA	333.82	68.28
8056	Ext Rect 250W HPS Fxtr, E&G, (401C) Side Mtd, Area Lighting	EA	395.96	67.89
8058	Ext Rect 400W HPS Fxtr, E&G, (401C) Side Mtd, Area Lighting	EA	494.00	84.10
8060	Ext Rect 1000W HPS Fxtr, E&G, 401C Side Mtd, Area Lighting	EA	638.36	99.15
16616 9000	Landscape Fixtures			
Note: Includes Conduit, Wire And Trench.				
16616 9010	Bollards			
9012	24" Incandescent Bollard	EA	416.11	69.61
9014	36" Incandescent Bollard	EA	505.86	92.72
9016	42" Incandescent Bollard	EA	526.27	92.72
9018	24" H. I. D. Bollard	EA	399.78	69.61
9020	36" H. I. D. Bollard	EA	460.97	92.72
9022	42" H. I. D. Bollard	EA	575.24	92.72
9024	18" Dia Concrete Bollard	EA	1,053.96	149.48
9026	24" Dia Concrete Bollard	EA	1,421.19	259.43
16616 9030	Low Voltage			
9032	Low Voltage Recessed Uplight	EA	378.75	89.54
9034	Low Voltage Walkway	EA	295.78	49.21
9036	Low Voltage Malibu - 5 Light Set	EA	258.47	59.66
9038	Low Voltage Mushroom 24" Pier	EA	238.65	49.21
16616 9050	Recessed Wall Light			
9052	100W Incand Recessed Wall Light	EA	201.92	49.21
9054	100W Fluor. Recessed Wall Light	EA	189.67	49.21
9056	100W H. I. D. Recessed Wall Light	EA	336.01	59.66
16616 9060	Step Lights			
9062	Incandescent Step Lights	EA	167.23	39.37
9064	Fluorescent Step Lights	EA	208.06	39.37
16617 0010	Poles			
Note: Seamless, Anchor Base Type, With Handhole , Anchor Base Type, With Handhole				
16617 0050	Removal & Reinstallation Of Lighting Pole			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0052	Remove & Relocate Lighting Pole & Standards WOne Arm Up To 45'	LF	13.06	
16617 0099	Roadway			
	Note: Single Arm Attachment, 6 Ft (1.8M) Arm Length , Truss Member, 6 Bolt Attachment, 12 Ft (3.7M) Arm Length			
16617 0099	Aluminum round, tapered			
0100	Lighting, poles, 20' tall, roadway, one 6' arm al, rnd,	EA	1,065.51	98.63
0120	Lighting, poles, 25' tall, roadway, one 6' arm al, rnd,	EA	1,243.30	91.69
0140	Lighting, poles, 30' tall, roadway, one 6' arm al, rnd,	EA	1,427.45	98.17
0160	Lighting, poles, 35' tall, roadway, one 6' arm al, rnd,	EA	1,588.24	98.81
0180	Lighting, poles, 40' tall, roadway, one 6' arm al, rnd,	EA	1,834.72	119.88
0300	Lighting, poles, 20' tall, roadway, two 6' arms, al, rnd,	EA	1,229.92	120.00
0320	Lighting, poles, 25' tall, roadway, two 6' arms, al, rnd,	EA	1,239.65	93.64
0340	Lighting, poles, 30' tall, roadway, two 6' arms, al, rnd,	EA	1,573.28	131.43
0360	Lighting, poles, 35' tall, roadway, two 6' arms, al, rnd,	EA	1,875.86	142.85
0380	Lighting, poles, 40' tall, roadway, two 6' arms, al, rnd,	EA	2,126.40	165.37
0500	Lighting, poles, one 12' truss arm 25' T, roadway, al, rnd,	EA	1,440.83	91.40
0520	Lighting, poles, one 12' truss arm 30' T, roadway, al, rnd,	EA	1,572.70	86.41
0540	Lighting, poles, one 12' truss arm 35' T, roadway, al, rnd,	EA	1,878.73	128.09
0560	Lighting, poles, one 12' truss arm 40' T, roadway, al, rnd,	EA	2,183.31	125.89
0700	Lighting, poles, two 12' truss arms, 25' T, roadway, al, rnd,	EA	1,724.19	134.56
0720	Lighting, poles, two 12' truss arms, 30' T, roadway, al, rnd,	EA	1,863.77	127.71
0740	Lighting, poles, two 12' truss arms, 35' T, roadway, al, rnd,	EA	2,079.21	166.51
0760	Lighting, poles, two 12' truss arms, 40' T, roadway, al, rnd,	EA	3,114.07	212.30
16617 0999	Galvanized steel, round, tapered			
1000	Lighting, poles, one 6' arm 20' T, roadway, galv steel, rnd,	EA	1,053.03	81.24
1020	Lighting, poles, one 6' arm 25' T, roadway, galv steel, rnd,	EA	1,147.77	100.24
1040	Lighting, poles, one 6' arm 30' T, roadway, galv steel, rnd,	EA	1,278.00	88.10
1060	Lighting, poles, one 6' arm 35' T, roadway, galv steel, rnd,	EA	1,400.25	114.76
1080	Lighting, poles, one 6' arm 40' T, roadway, galv steel, rnd,	EA	1,632.06	139.98
1200	Lighting, poles, two 6' arms, 20' T, roadway, galv steel, rnd,	EA	1,352.36	130.71
1220	Lighting, poles, two 6' arms, 25' T, roadway, galv steel, rnd,	EA	1,441.03	142.05
1240	Lighting, poles, two 6' arms, 30' T, roadway, galv steel, rnd,	EA	1,572.59	152.80
1260	Lighting, poles, two 6' arms, 35' T, roadway, galv steel, rnd,	EA	1,690.91	161.52
1280	Lighting, poles, two 6' arms, 40' T, roadway, galv steel, rnd,	EA	1,929.43	186.44
1400	Poles, roadway, one 12' truss arm 25' tall, galv steel, rnd,	EA	1,299.64	104.31
1420	Poles, roadway, one 12' truss arm 30' tall, galv steel, rnd,	EA	1,369.73	115.01
1440	Poles, roadway, one 12' truss arm 35' tall, galv steel, rnd,	EA	1,492.12	113.32
1460	Poles, roadway, one 12' truss arm 40' tall, galv steel, rnd,	EA	1,723.76	135.53
1480	Poles, roadway, one 12' truss arm 45' tall, galv steel, rnd,	EA	1,930.61	151.87
1600	Poles, roadway, two 12' truss arms, 25' tall, galv steel, rnd,	EA	1,551.30	142.77
1620	Poles, roadway, two 12' truss arms, 30' tall, galv steel, rnd,	EA	1,683.30	158.72
1640	Poles, roadway, two 12' truss arms, 35' tall, galv steel, rnd,	EA	1,802.67	154.07
1660	Poles, roadway, two 12' truss arms, 40' tall, galv steel, rnd,	EA	2,040.32	179.46
1680	Poles, roadway, two 12' truss arms, 45' tall, galv steel, rnd,	EA	2,281.20	196.98
16617 2999	Area lighting			
	Note: Single Lumin- Aires. Anchor Base Type, For Single Luminaires, Anchor Base Type, Precast Butt Base Type			
16617 2999	Aluminum non-tapered			
3000	Poles, area lighting, 10' tall, round, 3" OD, al, non-tapered	EA	593.76	42.86
3020	Poles, area lighting, 12' tall, round, 3" OD, al, non-tapered	EA	671.35	81.03
3040	Poles, area lighting, 14' tall, round, 3" OD, al, non-tapered	EA	718.09	91.14
3100	Poles, area lighting, round, 3" OD, al, tapered, 10' tall	EA	599.57	42.86
3120	Poles, area lighting, round, 3" OD, al, tapered, 12' tall	EA	671.35	70.45
3140	Poles, area lighting, round, 3" OD, al, tapered, 14' tall	EA	718.09	49.17
3160	Poles, area lighting, round, 3" OD, al, tapered, 16' tall	EA	803.85	87.97
3180	Poles, area lighting, round, 3" OD, al, tapered, 18' tall	EA	815.70	87.93
3200	Poles, area lighting, round, 3" OD, al, tapered, 20' tall	EA	908.51	91.74
16617 3399	Galvanized steel, tapered			
3400	Poles, area lighting, 10' tall, round, 3" OD, galv steel,	EA	476.32	58.01
3420	Poles, area lighting, 12' tall, round, 3" OD, galv steel,	EA	548.65	70.28
3440	Poles, area lighting, 14' tall, round, 3" OD, galv steel,	EA	598.00	82.89
3460	Poles, area lighting, 16' tall, round, 3" OD, galv steel,	EA	626.42	82.56
3480	Poles, area lighting, 18' tall, round, 3" OD, galv steel,	EA	656.53	128.93
3500	Poles, area lighting, 20' tall, round, 3" OD, galv steel,	EA	682.51	70.58
16617 3699	Spun cast concrete, burial type, tapered			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3700	Poles, area, tapered, 13' T, rnd, 3" OD, spun cast conc,	EA	683.82	96.14
3720	Poles, area, tapered, 16' T, rnd, 3" OD, spun cast conc,	EA	705.34	95.25
3740	Poles, area, tapered, 18' T, rnd, 3" OD, spun cast conc,	EA	762.48	102.95
3760	Poles, area, tapered, 30' T, rnd, 3" OD, spun cast conc,	EA	951.89	114.71
3780	Poles, area, tapered, 35' T, rnd, 3" OD, spun cast conc,	EA	1,038.78	128.13
3800	Poles, area, tapered, 40' T, rnd, 3" OD, spun cast conc,	EA	1,155.45	152.80
3820	Poles, area, tapered, 45' T, rnd, 3" OD, spun cast conc,	EA	1,243.31	176.07
16617 3999	Octagonal, concrete, tapered			
4000	Poles, area lighting, tapered, 28' tall, round, 3" OD,	EA	895.05	164.56
4020	Poles, area lighting, tapered, 30' tall, round, 3" OD,	EA	951.89	178.95
4040	Poles, area lighting, tapered, 33' tall, round, 3" OD,	EA	1,015.33	192.41
4060	Poles, area lighting, tapered, 36' tall, round, 3" OD,	EA	1,044.59	208.11
4080	Poles, area lighting, tapered, 38' tall, round, 3" OD,	EA	1,122.18	231.25
4100	Poles, area lighting, tapered, 43' tall, round, 3" OD,	EA	1,197.34	248.94
4120	Poles, area lighting, tapered, 47' tall, round, 3" OD,	EA	1,275.00	270.61
4122	Conc Oct Lt Pole, 27' H, 512, Polis hed Brown WAcrylic Coating FSH	EA	1,439.28	30.92
4124	Conc Oct Lt Pole, 30' H, 512, Polis hed Brown WAcrylic Coating FSH	EA	449.49	157.80
4126	Pole Adapter Base Plate, Galv Stl , 1"Thk For Adapting Up To 40'	EA	567.28	179.64
4128	Conc Oct Lt Pole, 13' H, 715, Pink WAcrylic Coating, FSH Design	EA	855.95	112.09
4130	Pole Base Cover For All Octagon Poles	EA	89.59	21.41
4132	Pole Arms 24"L, Square, For 401-C, 250W Fxtr, Drk, Architectural Brz	EA	188.36	15.46
16617 4999	Arm aluminum tapered			
5000	Lighting, poles, arm aluminum tapered, 6' long	EA	296.87	24.58
5020	Lighting, poles, arm aluminum tapered, 8' long	EA	332.06	22.68
5040	Lighting, poles, arm aluminum tapered, 10' long	EA	383.26	24.67
5060	Lighting, poles, arm aluminum tapered, 12' long	EA	454.88	23.27
16617 5199	Arm galvanized steel, bracket type			
5200	Lighting, poles, 6' long, arm galvanized steel, bracket type,	EA	284.08	13.79
5220	Lighting, poles, 8' long, arm galvanized steel, bracket type,	EA	334.38	14.05
5240	Lighting, poles, 10' long, arm galvanized steel, bracket type,	EA	417.72	17.14
16622 0010	High intensity discharge fixtures			
16622 0099	Emergency standby lighting system 250W quartz			
0100	Ltg, HID fxtr, 250W quartz, emergency standby lighting	EA	193.91	45.86
16622 0499	Pendant type			
16622 0499	High bay			
0500	Ltg, HID fxtr, 250W metal halide lamp, pendant type, high bay	EA	295.15	72.14
0510	Ltg, HID fxtr, 250W high pressure sodium pendant type, high bay	EA	306.77	72.14
0520	Ltg, HID fxtr, 400W high pressure sodium pendant type, high bay	EA	320.71	72.14
0530	Ltg, HID fxtr, 1000W high pressure sodium pendant type, high bay	EA	411.21	85.61
16622 0539	Low bay			
0540	Ltg, HID fxtr, 250W metal halide lamp, pendant type, low bay	EA	288.67	54.13
0550	Ltg, HID fxtr, 250W high pressure sodium pendant type, low bay	EA	300.29	54.13
16622 0999	Recessed			
Note: Integrally Ballasted, Ballasted Mercury Vapor Plaster Ceiling Installation Brushed Aluminum Or White Enamel Exterior Trim, Ballasted Mercury Vapor Poured Concrete Installation Brushed Aluminum Or White Enamel Exterior Trim				
1000	Ltg, HID fxtr, 175W metal halide lamp, rec, 2' x2', layin	EA	271.24	54.13
1010	Ltg, HID fxtr, 250W metal halide lamp, rec, 2' x2', layin	EA	281.70	54.13
1020	Ltg, HID fxtr, 100W high pressure sodium rec, 2' x2', layin	EA	294.48	54.13
1030	Ltg, HID fxtr, 150W high pressure sodium rec, 2' x2', layin	EA	294.48	54.13
1040	Ltg, HID fxtr, 175W metal halide lamp, rec, 2' x2', encl	EA	271.24	54.13
1050	Ltg, HID fxtr, 150W high pressure sodium rec, 2' x2', encl	EA	294.48	54.13
1060	Ltg, HID fxtr, 75W mercury vapor, rec, 2' x2', encl & gasketed	EA	302.61	54.13
1070	Ltg, HID fxtr, 100W mercury vapor, rec, 2' x2', encl & gasketed	EA	302.61	54.13
1080	Ltg, HID fxtr, 175W mercury vapor, rec, 2' x2', encl & gasketed	EA	297.96	54.13
1210	HID fxtr, rec, 100W mercury vapor, rnd E&G, plaster clg, flat pris g	EA	292.15	54.13
1220	HID fxtr, rec, 100W mercury vapor, rnd E&G, plaster clg, flat white	EA	297.96	54.13
1230	HID fxtr, rec, 100W mercury vapor, rnd E&G, poured conc, flat pris g	EA	553.60	54.13
1240	HID fxtr, rec, 100W mercury vapor, rnd E&G, poured conc, flat white	EA	553.60	54.13
1250	HID fxtr, rec, rnd E&G, poured conc, drop homogeneous glass	EA	553.60	54.13
1260	HID fxtr, rec, rnd E&G, poured conc, drop prismatic glass	EA	553.60	54.13
1261	Recess Sq HID Fxtr, 2x2, Type 307D 175W Metal Halide, Encl & Gskt	EA	426.76	54.13
1270	Recess Rd HID Fxtr, E&G, (308C2) Drop Glass Lns, Plast Clg, 100W/W	EA	213.05	42.63
1271	Recess Rd HID Fxtr, E&G, (308D2) Drp Prsm Gl Lns, Plast Clg, 100W/W	EA	256.13	42.63

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16622 1999 Surface mounted Intergrally Ballasted,				
2000	Ltg, HID fxtr,175W metal halide lamp, surface mtd, 2'x2', encl	EA	400.08	51.60
2010	Ltg, HID fxtr,150W high pressure sodium surface mtd, 2'x2', encl	EA	416.35	51.60
2020	Ltg, HID fxtr, surface mtd, 2'x2', 100W mercury vapor	EA	343.15	51.60
2030	Ltg, HID fxtr, surface mtd, 2'x2', 175W mercury vapor	EA	343.15	51.60
2040	Ltg, HID fxtr, surface mtd, 2'x2', 175W metal halide	EA	357.09	51.60
2050	Ltg, HID fxtr,150W high pressure sodium surface mtd, 2'x2'	EA	416.35	51.60
2060	Ltg, HID fxtr,400W high pressure sodium surface mtd, 2'x2'	EA	441.92	51.60
2061	Surf Sq HID Fxtr,2x2, Type 306D 70W Hi Press Sodium Encl & Gskt	EA	320.39	51.60
16622 2499 Exterior, rectangle				
Note: Shaped Side Munted Fixture, Roadway Lighting Fixture With Type I Distribution				
2500	Ltg, HID fxtr, 50 W mercury vapor lamp, exterior, rectangle	EA	329.00	85.63
2510	Ltg, HID fxtr, 50 W metal halide lamp, exterior, rectangle	EA	461.46	85.63
2520	Ltg, HID fxtr, 50 W high pressure sodium exterior,	EA	387.09	85.63
2530	Ltg, HID fxtr, 50 W mercury vapor lamp, exterior, rectangle,	EA	352.71	85.63
2540	Ltg, HID fxtr, 50 W metal halide lamp, exterior, rectangle, HD	EA	640.66	85.63
2550	Ltg, HID fxtr, 50 W high pressure sodium exterior,	EA	652.27	85.63
16622 2999 Security, exterior wall Medium Output Style A, Output Style B				
3000	Ltg, HID fxtr,175W mercury vapor (501), security, ext wall	EA	305.57	36.09
3010	Ltg, HID fxtr,100W high pressure sodium(501), security, ext wall	EA	290.93	36.09
3020	Ltg, HID fxtr,175W mercury vapor (502), security, ext wall	EA	289.77	36.09
3030	Ltg, HID fxtr,100W high pressure sodium(502), security, ext wall	EA	257.23	36.09
3040	Ltg, HID fxtr,250W mercury vapor (503), security, ext wall	EA	350.41	40.94
3050	Ltg, HID fxtr,400W mercury vapor (503), security, ext wall	EA	389.80	40.94
3060	Ltg, HID fxtr,250W high pressure sodium(503), security, ext wall	EA	412.93	40.94
3070	Ltg, HID fxtr,100W mercury vapor (504), security, ext wall	EA	255.48	40.94
3071	Security HID Fxtr,Ext Wall,501B 70 Watt High Pressure Sodium	EA	391.09	36.09
3072	Security HID Fxtr,Ext Wall,502B 70 Watt High Pressure Sodium	EA	253.81	36.09
16622 3999 Enclosed, roadway fixture				
Note: Fixture With Wood Pole Bracket With Type I Distribution, With Symmetrical Light Distribution				
4000	Ltg,HID fxtr,175W mercury vapor, encl, roadway, w/wd pole brkt	EA	259.39	83.03
4010	Ltg,HID fxtr,250W mercury vapor, encl, roadway, w/wd pole brkt	EA	245.59	83.03
4100	Ltg, HID fxtr, 1000 watt mercury vapor lamp, enclosed, high mast	EA	468.54	104.39
4110	Ltg, HID fxtr, 400 watt metal halide lamp, encl, high mast	EA	456.90	89.89
4120	Ltg, HID fxtr, 1000 watt metal halide lamp, encl, high mast	EA	596.36	104.51
4130	Ltg, HID fxtr, 400W high press sodium lamp, encl, high mast	EA	489.43	90.18
4140	Ltg, HID fxtr, 1000 watt high press sodium encl, high mast	EA	631.22	104.43
16622 5000 Floodlight, asymmetrical light distribution				
16622 5000 General duty Symmetrical Light Distribution				
5010	HID fxtr, floodlight, 400W mercury vapor lamp, encl, genl	EA	444.27	73.92
5020	HID fxtr, floodlight, 1000W mercury vapor lamp, encl, genl	EA	570.24	74.17
5050	HID fxtr, floodlight, 400W metal halide lamp, encl, genl purpose	EA	446.89	75.28
5060	HID fxtr, floodlight, 1000W metal halide lamp, encl, genl	EA	570.24	77.03
5080	HID fxtr, floodlight, 400W high press sodium lamp, encl, genl	EA	458.51	67.50
5090	HID fxtr, floodlight, 1000W high press sodium lamp, encl, genl	EA	625.15	77.03
16622 5199 Heavy duty				
Note: Light Distribution Wall Bracket Munting With Nema 6X5 Light Distribution				
5200	HID fxtr, floodlight,for mercury vapor lamp, encl, heavy duty	EA	458.69	77.03
5210	HID fxtr, floodlight,for metal halide lamp, encl, heavy duty	EA	458.69	78.45
5220	HID fxtr, floodlight,for high press sodium lamp, encl, heavy	EA	470.31	79.88
5230	HID fxtr, floodlight, 250W high press sodium lamp, encl, heavy	EA	470.13	75.28
5240	HID fxtr, floodlight, 400W high press sodium lamp, encl, heavy	EA	470.13	71.39
5250	HID fxtr, floodlight, 1000W high press sodium lamp, encl, heavy	EA	624.86	77.03
5400	HID fxtr, floodlight, NEMA 5 x 2 light dist, quartz, 500W heavy	EA	120.89	51.42
5410	HID fxtr, floodlight, NEMA 5 x 3 light dist, quartz, 500W heavy	EA	120.89	51.42
5420	HID fxtr, floodlight, NEMA 5 x 5 light dist, quartz, 500W heavy	EA	133.43	51.42
5421	HD HID Flood Fxtr,Slip Fit,507A Rated For Mercury Vapor Lamp	EA	874.21	158.22
5422	HD HID Flood Fxtr,Slip Fit,507B Rated For Metal Halide Lamp	EA	589.15	157.44
5423	HD HID Flood Fxtr,Slip Fit,507C Rated For High Pressure Sodium	EA	426.87	158.37
16625 0010 Fixture whips				
16625 0099 TFFN wire				
0100	Fixture whip, 3/8" greenfield, three #18, 2 conn, 6' L, TFFN	EA	17.76	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0200	Fixture whip, 3/8" greenfield, three #16, 2 conn, 6' L, TFFN	EA	17.76	
16625 0299	THN wire			
0300	Fixture whip, 3/8" greenfield, three #14, 2 conn, 6' L, THHN	EA	19.50	
0360	Fixture whip, 3/8" greenfield, three #12, 2 conn, 6' L, THHN	EA	19.50	
16631 0010	Hazardous lighting fixtures			
16631 0099	Industrial incandescent			
Note: Fixture For Use In Nec Class I Group C D And Class Ii Group E F G And Class III Locations				
0100	Indl incand, NEC I-C, D; II-E, F, G w/ std dome refl, 200 W	EA	838.80	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0110	Indl incand, NEC I-C, D; II-E, F, G w/ deep dome refl, 200 W	EA	838.80	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0120	Indl incand, NEC II-E, F, G; III, pendant mtd, w/o refl, 200	EA	670.31	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0130	Indl incand, NEC II-E, F, G; III, ceiling mtd, w/o refl, 200	EA	728.41	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0140	Indl incand, NEC II-E, pendant mtd w/std dome refl, F, G; III,	EA	745.84	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0150	Indl incand, NEC II-E, ceiling mtd w/std dome refl, F, G; III,	EA	803.94	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0160	Indl incand, NEC II-E, pendant mtd w/shallow dome refl, F, G; III,	EA	745.84	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0161	Haz Fxtr, NEC II-E, F, G; &III(707A) Pendant Mtd, Ang Dome Refl	EA	346.41	140.48
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0162	Haz Fxtr, NEC II-E, F, G; &III(707B) Ceiling Mtd, Ang Dome Refl	EA	350.42	140.48
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0163	Haz Fxtr, NEC II-E, F, G; &III(707C) Bracket Mtd, Ang Dome Refl	EA	389.63	140.48
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0164	Haz Fxtr, NEC II-E, F, G; &III(708C) Bracket Mtd, Shlw Dome Refl	EA	464.89	140.48
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
0170	Indl incand, NEC II-E, ceiling mtd w/shallow dome refl, F, G; III,	EA	803.94	46.63
0175	Ltg fxtr, indl incand, NEC II-E, for steel wire guard, add		22.35	
16631 0179	Fluorescent, NEC II-F, G; III			
0180	Florescent, NEC II-F, G; III, pendant mounted, 2-40 W	EA	2,030.28	
0190	Florescent, NEC II-F, G; III, pendant mounted, 3-40 W	EA	2,854.96	
16631 0199	NEC I-C, D; II-E, F, G; III			
Note: Fixture For Use In Nec Class I Division 2 Group C D And Class II Division 2 Group E F G And Class Iii Locations Without Reflector Pendant Munted				
16631 0199	Mercury vapor without reflector			
0200	Mercury vapor, NEC I-C, D; II-E, F, G; III, w/o refl, 100 W	EA	667.17	67.41
0210	Mercury vapor, NEC I-C, D; II-E, F, G; III, w/o refl, 175 W	EA	690.41	67.41
16631 0219	Metal halide without reflector			
0220	Metal Halide, NEC I-C, D; II-E, F, G; III, w/o refl, 175 W	EA	771.75	67.41
16631 0229	High pressure sodium without reflector			
0230	HP sodium, NEC I-C, D; II-E, F, G; III, w/o refl, 100 W	EA	853.09	67.41
0240	HP sodium, NEC I-C, D; II-E, F, G; III, w/o refl, 150 W	EA	885.75	73.48
16631 0249	Mercury vapor with standard dome reflector			
0250	Mercury vapor, NEC I-C, w/std dome refl, 100 W D; II-E, F, G;	EA	742.70	67.41
0260	Mercury vapor, NEC I-C, w/std dome refl, 175 W D; II-E, F, G;	EA	765.94	67.41
16631 0269	Metal halide with standard dome reflector			
0270	Metal Halide, NEC I-C, w/std dome refl, 175 W D; II-E, F, G;	EA	847.28	67.41
16631 0279	High pressure sodium w/ standard dome reflector			
0280	HP sodium, NEC I-C, 100 W D; II-E, F, G; III, w/std dome refl	EA	928.61	67.41
0290	HP sodium, NEC I-C, 150 W D; II-E, F, G; III, w/std dome refl	EA	961.27	73.48
16631 0299	Mercury vapor with shallow dome reflector			
0300	Mercury vapor, NEC I-C, w/shallow dome refl, 100W D; II-E, F, G;	EA	736.89	67.41
0310	Mercury vapor, NEC I-C, w/shallow dome refl, 175W D; II-E, F, G;	EA	760.13	67.41
16631 0319	Metal halide with shallow dome reflector			
0320	Metal Halide, NEC I-C, w/shallow dome refl, 175W D; II-E, F, G;	EA	841.47	67.41
16631 0329	High pressure sodium with shallow dome reflector			
0330	HP sodium, NEC I-C, w/shallow dome refl, 100 W D; II-E, F, G;	EA	922.80	67.41
0340	HP sodium, NEC I-C, w/shallow dome refl, 150 W D; II-E, F, G;	EA	955.46	73.48
16631 0349	NEC div 2 I-C, D; II-E, F, G			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16631 0349	Mercury vapor with standard reflector			
0350	Mercury vapor, Div.2 I-C, D; II-E, F, G, w/std refl, 100 W	EA	585.84	67.41
0360	Mercury vapor, Div.2 I-C,175W D; II-E, F, G, w/std dome refl	EA	626.50	67.41
16631 0369	Metal halide with standard reflector			
0370	Metal Halide, Div.2 I-C,175W D; II-E, F, G, w/std dome refl	EA	678.79	67.41
16631 0379	High pressure sodium with standard reflector			
0380	HP sodium Div.2 I-C, D; II-E, F, G, w/std dome refl, 100 W	EA	771.75	67.41
0390	HP sodium Div.2 I-C, D; II-E, F, G, w/std dome refl, 150 W	EA	804.41	73.48
16631 0399	Mercury vapor with 30_ dome reflector			
0400	Mercury vapor, Div.2 I-C, 100 W D; II-E, F, G, w/30 deg dome	EA	585.84	67.41
0410	Mercury vapor, Div.2 I-C, 175 W D; II-E, F, G, w/30 deg dome	EA	626.50	67.41
16631 0419	Metal halide with 30_ dome reflector			
0420	Metal Halide, Div.2 I-C, 175 W D; II-E, F, G, w/30 deg dome	EA	672.98	67.41
16631 0429	High pressure sodium with 30_ dome reflector			
0430	HP sodium Div.2 I-C, D; II-E, F, G, w/30 deg dome refl, 100 W	EA	765.94	67.41
0440	HP sodium Div.2 I-C, D; II-E, F, G, w/30 deg dome refl, 150 W	EA	804.41	73.48
16645 0010	Residential fixtures			
7000	Ltg, resi fxtr, bedroom white glass, 15" dia, 3-60 W	EA	32.75	6.03
7020	Ltg, resi fxtr, closet, white glass globe, 6" dia, 60 W	EA	18.87	6.03
7040	Ltg, resi fxtr, dining room clear ribbed glass bowl,14.5"	EA	77.05	9.96
7060	Ltg, resi fxtr, family room white glass bowl, 14.5" dia,	EA	89.84	9.96
7080	Ltg, resi fxtr, foyer, clear ribbed glass bowl, 10.5" dia,	EA	59.24	7.64
7100	Ltg, resi fxtr, hallway, clear ribbed glass globe, 6" dia, 60 W	EA	21.48	6.03
7120	Ltg, resi fxtr, kitchen cabinet (strip), 2' L, 20 W	EA	62.13	15.06
7140	Ltg, resi fxtr, kitchen fluorescent, 18" x 50.5", 4-34 W	EA	377.39	44.04
7160	Ltg, resi fxtr, paddle fan, 5 blade, 52" W	EA	148.65	30.16
7180	Ltg, resi fxtr, porch, white glass, 8.75" dia, 2-60 W	EA	27.99	6.03
7200	Ltg, resi fxtr, utility (pullchain), white glass globe,	EA	30.97	5.10
7220	Ltg, resi fxtr, vanity light, 2' L, 4-60 W	EA	59.63	12.74
7240	Ltg, resi fxtr, wall lantern, 5" W, 100 W	EA	52.07	9.96
16645 7300	Fixture Whips			
7310	6 Ft Flexible Conduit, 2 Conns, & 3 #14 THHN Conductors For Lay-	EA	17.92	
7320	6 Ft 3/8" Flexible Conduit, 2 Conns, & 3 #12 THHN Conductors	EA	32.47	
16645 7400	Electronic Ballasts			
7410	Added Cost For Electronic Ballast	EA	44.10	
16660	Energy			
16660	Energy Saving Devices			
16660 1000	Special			
Note: Ultrasonic Sensors, Dimming Sensors, Wall Switches and Plates, Occupancy Sensors, Timers				
1001	Ultrasonicy Occupncy Sensor, 24VDC, 500SF	EA	110.43	3.25
1002	Ultrasonicy Occupncy Sensor, 24VDC, 1000SF	EA	131.06	3.25
1003	Ultrasonicy Occupncy Sensor, 24VDC, 2000SF	EA	151.69	3.25
1004	Ultrasonicy Occupncy Sensor, 24VDC, 90LF	EA	151.69	3.25
1005	Dual Tech Occupancy, 24VDC	EA	205.19	3.25
1006	Munting Brackets Ceiling Munt	EA	12.36	3.25
1007	Munting Brackets Wall Munt	EA	15.80	3.25
1008	Lightsaver Dimming Sensor, 10VDC	EA	105.27	3.25
1009	Lightsaver Controller, 24VDC	EA	93.42	3.25
1011	Lightsaver Controller 24VDC	EA	93.42	3.25
1012	Power Pack, 120V, 20A, Ballast Load	EA	48.72	3.25
1013	Power Pack, 277V, 20A, Ballast Load	EA	48.72	3.25
1014	Power Pack, 240V, 20A, Bl1st Load	EA	48.72	3.25
1015	Power Pack, 347V, 15A, Ballast Load	EA	48.72	3.25
1016	Slave Pack 120, 277 Or 347V, 20A	EA	38.40	3.25
1017	Transformer Pack Up To 1000MA	EA	84.83	3.25
1018	Deco Style Auto Wall Switch, 0-800Wtts	EA	79.48	3.25
1019	Deco Style Auto Wall Switch, 0-122Wtts	EA	79.48	3.25
1021	Deco Style Auto Wll Switch, 0-1200Watts	EA	79.48	3.25
1022	Deco Style Auto Wall Switch, 0-1500Watts	EA	79.48	3.25
1023	Deco Style Auto Wall Switch, 0-800/1200	EA	79.48	3.25
1024	Deco Style Auto Wall Switch, 24VDC 3RR7 Rly	EA	79.48	3.25

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1025	Switch Plate Cover, Single Gang Box	EA	3.02	0.14
1026	Switch Plate Cover, Blank For 2 Gang Box	EA	4.46	0.14
1027	Switch Plate Cover, For 2 Gang Box w/Switch	EA	4.46	0.14
1028	Universal Pair Wall Swtch, 120/277 VAC	EA	127.62	3.25
1029	BI-Level Wall Switch, 0-800 Watts	EA	113.87	3.25
1031	BI-Level Wall Switch, 0-1200 Watts	EA	113.87	3.25
1032	Bi-Level Wall Switch, 24VCD, Reqs Power Pack	EA	100.11	3.25
1033	Switch Plate Cover, Blank Plate For Gang Box	EA	3.84	0.14
1034	Switch Plate Cover, 2 Gang Box Plate, Switch Opt	EA	3.84	0.14
1035	Switch Plate Cover, Blank Plate For 2 Gang Box	EA	3.84	0.14
1036	Switch Plate Cover, 2 Gang Boxplate, Switch Opt	EA	3.84	0.14
1037	WPIR Occpncy Sensor, 24VDC, 30SEG, 5 Level Lens	EA	84.64	3.25
1038	CI-100 Passive Infrd Occupancy Sensor, 24VDC	EA	122.46	3.25
1039	CI-105 Passive Infrd Occupancy Sensor, 24VDC	EA	124.18	3.25
1041	CI-200 360 Dgr Passive Infrared Sensr, 24VDC	EA	122.46	3.25
1042	CI-200 360 Dgr Passive Infrd Sensor, 24 VDC	EA	124.18	3.25
1043	CB Low Temp Occupancy Sensor, -40C, -40F	EA	187.99	3.25
1044	CB Low Temp Occupancy Sensor, -6, 7C, 20F	EA	136.41	3.25
1045	Timer Switch 120-277V, 0-800 Watts	EA	72.60	3.25
1046	Sentry Switch Control, 5A, 120/277V, 10SEC	EA	68.76	3.25
1047	Sentry Switch Control, 20A, 120/277V, 10Sec Dly	EA	76.04	3.25
1048	Sentry Switch Control, 20A, 120/277V, 3 Way	EA	76.04	3.25
1049	Sentry Switch Control, 5A, 120/277V, 5 Sec Dely	EA	70.54	3.25
1051	Sentry Switch Control, 20A, 120/277V, 5 Sec Dly	EA	76.04	3.25
1052	Sentry Switch Control, 20A, 120/277V, 3-Way, 5SD	EA	76.04	3.25
1053	Illuminometer Light Meter	EA	305.42	3.24
1054	Intell Timers Pro	EA	271.03	3.24
1055	Intell Timer 1	EA	198.69	3.25
1056	Timers	EA	241.68	3.25
1061	Protective Cages	EA	39.74	0.64
1062	Occupancy Sensor Wall Munted 12 0/277 Volt	EA	84.79	
1063	Occupancy Sensor Ceiling Munted 120/277 Volt	EA	107.24	
1064	Wall Lighting Switch Replacement	EA	62.35	
1065	Power Pack Control Unit For Milt i-Sensors	EA	96.42	
16661 0010 Landscape lighting				
16661 0010 Post, round steel tube				
16661 0099 Surface type Bolts With Base Cover,				
0100	Landscape ltg, 1-7/8" dia, 3'H, post, round stl tube, surf type	EA	164.59	2.82
0110	Landscape ltg, 1-7/8" dia, 6'H, post, round stl tube, surf type	EA	205.59	3.53
0120	Landscape ltg, 1-7/8" dia, 8'H, post, round stl tube, surf type	EA	230.36	4.39
0130	Landscape ltg, 1-7/8" dia, 9'H, post, round stl tube, surf type	EA	230.36	3.78
0200	Landscape ltg, 2-7/8" dia, 8'H, post, round stl tube, surf type	EA	230.36	3.32
0300	Landscape ltg, 3.5" dia, 8'H, post, round stl tube, surf type	EA	230.36	2.96
0310	Landscape ltg, 3.5" dia, 9'H, post, round stl tube, surf type	EA	230.36	2.67
16661 0999 Buried type 18 In Burial				
1000	Landscape ltg, 1-7/8" dia, 3'H, post, round stl tube, buried 18"	EA	138.78	6.92
1010	Landscape ltg, 1-7/8" dia, 6'H, post, round stl tube, buried 18"	EA	163.55	7.74
1020	Landscape ltg, 1-7/8" dia, 8'H, post, round stl tube, buried 18"	EA	195.73	7.42
1030	Landscape ltg, 1-7/8" dia, 9'H, post, round stl tube, buried 18"	EA	195.73	5.42
1100	Landscape ltg, 2-7/8" dia, 8'H, post, round stl tube, buried 18"	EA	195.73	3.92
1200	Landscape ltg, 3.5" dia, 8'H, post, round stl tube, buried 18"	EA	195.73	2.82
1210	Landscape ltg, 3.5" dia, 9'H, post, round stl tube, buried 18"	EA	195.73	2.03
16661 1999 Walkway fixture				
16661 1999 Low				
2000	Landscape ltg, walkway fixture, low, 100W M	EA	554.49	50.13
16661 2099 Post top				
2100	Landscape ltg, walkway fixture, post top, 100W M	EA	590.69	77.06
2110	Landscape ltg, walkway fixture, post top, 175W M	EA	594.63	84.66
2120	Landscape ltg, walkway fixture, post top, 250W M	EA	598.89	81.98
2130	Landscape ltg, walkway fixture, post top, 300W M	EA	663.04	86.51
2140	Landscape ltg, walkway fixture, post top, 400W M	EA	696.05	89.54
16661 2299 Luminaire				
2300	Landscape ltg, 100W M, walkway fixture, post top, luminaire	EA	592.15	77.06

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2310	Landscape ltg, 175W M, walkway fixture, post top, luminaire	EA	671.61	84.66
2400	Landscape ltg, 100W M, walkway fixture, round, luminaire	EA	687.49	81.98
16661 2499	Spherical			
2500	Landscape ltg, walkway fixture, spherical, 100W M	EA	649.46	57.13
2510	Landscape ltg, walkway fixture, spherical, 175W M	EA	649.46	57.13
2520	Landscape ltg, walkway fixture, spherical, 250W M	EA	649.46	57.13
2530	Landscape ltg, walkway fixture, spherical, 400W M	EA	659.08	65.62
16661 8000	Tree Lights, Surface Adjustable			
8001	50W Incandescent Tree Lights	EA	434.72	
8002	100W Incandescent Tree Lights	EA	448.87	
8003	150W Incandescent Tree Lights	EA	519.86	
16680	Aviation Lighting			
16680 0010	Airport lighting			
16680 0099	Runway centerline			
16680 0099	Semi-flush			
0100	Runway centerline lt, w/shallow insert base, bidir, 200W	EA	1,180.90	31.72
0110	Runway centerline lt, for base housing, bidir, 200W semi-flush	EA	636.21	19.75
16680 0119	Flush			
0120	Runway centerline lt, w/shallow insert base, bidir, 200W flush	EA	1,180.90	75.91
0130	Runway centerline lt, for base housing, bidir, 200W flush	EA	636.07	29.59
0140	Runway centerline lt, for base housing, bidir, 45W flush	EA	636.07	27.25
16680 0149	Touchdown zone light			
0150	Touchdown zone light, unidir, 200W w/shallow insert base	EA	1,006.60	31.02
0160	Touchdown zone light, unidir, 115W w/shallow insert base	EA	1,111.18	33.95
0170	Touchdown zone light, bidir, 62W w/shallow insert base	EA	1,053.08	32.18
0180	Touchdown zone light, unidir, 200W for base housing	EA	496.78	19.28
0190	Touchdown zone light, unidir, 115W for base housing	EA	531.64	20.31
0200	Touchdown zone light, bidir, 62W for base housing	EA	543.26	20.75
16680 0209	Runway edge, threshold & approach light For Mounting-In Base Housing.			
0210	Runway edge & threshold light, for base housing, bidir, 200W	EA	632.48	43.86
0220	Runway edge & threshold light, for base housing, bidir, 300W	EA	888.12	57.63
0230	Runway edge & threshold light, for base housing, bidir, 499W	EA	1,422.04	101.16
0240	Threshold & approach light, unidir, 200W for base housing	EA	400.09	31.45
0250	Threshold & approach light, unidir, 499W for base housing	EA	492.47	38.55
0260	Runway edge, bidir, 2-115W for base housing	EA	1,157.66	64.57
0270	Runway edge, bidir, 2-185W for base housing	EA	1,157.66	57.76
0280	Runway threshold & end, bidir, 2-115W for base housing	EA	1,151.85	64.63
0290	Runway threshold & end, bidir, 2-185W for base housing	EA	1,151.85	64.63
0300	Approach threshold light, unidir, 200W for base housing	EA	960.12	62.30
16680 0309	Taxiway light			
0310	Taxiway light, 115W type E, for base housing, omni-dir	EA	536.01	41.26
0320	Taxiway light, 115W type E, w/shallow insert base, omni-dir	EA	914.94	38.36
0330	Taxiway light, 45W type Q, w/shallow insert base, omni-dir	EA	954.31	73.84
0340	Taxiway light, 115W type Q, w/shallow insert base, omni-dir	EA	948.50	73.34
0350	Taxiway light, 45W type Q, for base housing, omni-dir	EA	502.45	38.36
0360	Taxiway light, 115W type Q, for base housing, omni-dir	EA	502.45	38.36
0370	Taxiway light, 45W flush, for base housing, omni-dir	EA	502.45	38.36
0380	Taxiway light, 115W flush, for base housing, omni-dir	EA	502.45	38.36
16680 0399	Accessories			
0400	Airport lighting, accessories, 45 W transformer	EA	150.78	18.47
0410	Airport lighting, accessories, 65 W transformer	EA	154.26	16.47
0420	Airport lighting, accessories, 100 W transformer	EA	182.15	17.27
0430	Airport lighting, accessories, 200 W, 6.6/6.6 A transformer	EA	178.67	16.27
0440	Airport lighting, accessories, 200 W, 20/6.6 A transformer	EA	205.84	25.82
0450	Airport lighting, accessories, 500 W transformer	EA	253.48	26.02
0460	Airport lighting, accessories, base housing, 24" deep, 12" dia	EA	339.77	44.06
0470	Airport lighting, accessories, base housing, 24" deep, 15" dia	EA	670.93	44.06
0480	Airport lighting, connection kit for 1 conductor cable, access	EA	71.64	27.85
16680 0499	Elevated runway marker			
0500	Elevated runway marker, high intensity quartz, edge, 115 W	EA	310.14	41.16
0510	Elevated runway marker, high intensity quartz, edge, 175 W	EA	315.95	40.22
0520	Elevated runway marker, 115 W, high intensity quartz, threshold	EA	339.19	43.22

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0530	Elevated runway marker, w/base & xfmr, hint quartz, edge, 200 W	EA	720.76	54.63
16680 0539	Elevated runway light			
0540	Elevated runway light, quartz, runway edge, 45 W	EA	217.19	46.73
0550	Elevated runway light, quartz, threshold, 115 W	EA	339.19	41.52
0560	Elevated runway light, quartz, taxiway, 30 W	EA	219.51	46.59
0570	Elevated runway light, w/base & xfmr, quartz, fixture, 200 W	EA	720.76	54.63
16680 0579	Elevated threshold marker			
0580	Elevated threshold marker, quartz, 115 W	EA	414.72	50.90
0590	Elevated threshold marker, quartz, 175 W	EA	397.29	46.89
16680 0599	Accessories			
0600	Airport lighting, accessories, 100 W transformer	EA	182.15	17.27
0610	Airport lighting, accessories, 200 W transformer	EA	178.67	16.27
0620	Airport lighting, accessories, base housing, 24" deep, 12" dia	EA	572.16	34.69
0630	Airport lighting, connector kit for 1 conductor cable, access	EA	71.64	28.12
16680 0699	Elevated approach and navigation light			
0700	Elev approach & navigation lt, assembly, 200 W	EA	333.96	47.73
0710	Elev approach & navigation lt, assembly, 300 W	EA	397.87	47.73
0720	Elev approach & navigation lt, assembly, 500 W	EA	392.06	47.73
0730	Elev approach & navigation lt, 200 W, w/filter brackets only	EA	210.77	30.65
0740	Elev approach & navigation lt, 300 W, w/filter brackets only	EA	306.05	44.76
0750	Elev approach & navigation lt, 500 W, w/filter brackets only	EA	399.01	58.50
0760	Elev approach & navigation lt, upper power cable assembly	EA	241.86	34.52
0770	Elev approach & navigation lt, lower power cable assembly	EA	549.78	34.52
0780	Elev approach & navigation lt, cable clamp	EA	30.18	7.44
16680 0799	PAPI system			
0800	Airport lighting, w/power supply, 4 units, 3 projectors/unit, PAPI	EA	18,778.78	401.90
0810	Airport lighting, PAPI system clinometer	EA	3,444.44	96.89
0820	Airport lighting, PAPI system air to ground radio receiver	EA	2,921.55	96.89
16680 0899	Rotating airport beacon			
0900	Rotating airport beacon, 400 W, 12 RPM, 1 beam green, 1 clear	EA	8,932.71	440.59
16680 0909	Rotating beam			
0910	Rotating beam single drum, 500 W, 12 RPM, clear beam	EA	22,446.44	396.87
0920	Rotating beam double drum, 1000 W, 6 RPM, 1 beam green, 1 clear	EA	39,068.72	700.81
16680 0929	Beacon tower			
0930	Airport lighting, beacon tower, tubular type, 51'	EA	21,762.34	928.97
16680 0939	Panelboard			
0940	Airport lighting, 4 - 15 amp breakers, panelboard, wthprf	EA	791.86	38.66
16680 0949	Booster transformer Unidirectional			
0950	Airport lighting, booster transformer, 1 KW	EA	3,479.99	60.99
1000	Runway approach lt, 115 W, unidir, semi-flush, w/shallow insert bas	EA	1,262.23	55.53
1010	Runway approach lt, 200 W, unidir, semi-flush, w/shallow insert bas	EA	1,262.23	54.86
1020	Airport ltg, for mtg in base housing, 115 W, touch down zone	EA	519.88	42.96
1030	Airport ltg, for mtg in base housing, 200 W, touch down zone	EA	519.88	40.56
16680 1099	Approach lights Flush, Unidirectional			
1100	Approach lt, for base housing, clear, hint quartz, 500 W	EA	2,947.08	55.20
1110	Approach lt, for base housing, red, hint quartz, 500 W	EA	3,411.87	55.20
1120	Threshold lt, for base housing, hint quartz, 500 W, clear	EA	4,225.24	55.20
1130	Threshold & end lt, for base housing, clear, grn/red, hint	EA	3,353.77	55.20
16680 1199	Wind cone			
1200	Airport ltg, w/ obstruction lt, 12' lighted assy, rigid, wind cone	EA	6,924.54	523.71
1210	Airport ltg, 12' lighted assy, rigid, wind cone	EA	5,844.00	483.94
1220	Airport ltg, w/ obstruction lt, 12' unlighted assy, wind cone	EA	6,233.60	458.70
1230	Airport ltg, 12' unlighted assembly, wind cone	EA	5,706.70	374.41
1240	Airport ltg, slip fitter, 2.5" pipe, wind cone	EA	121.17	21.91
1250	Airport ltg, sock, cotton, 12' x 3', wind cone	EA	548.94	117.65
1260	Airport ltg, sock, nylon, 12' x 3', wind cone	EA	554.75	115.31
1300	Airport ltg, 8' lighted assembly, frangible, wind cone	EA	3,092.29	476.70
1310	Airport ltg, frangible, 8' unlighted assembly, wind cone	EA	2,319.86	366.65
1320	Airport ltg, w/ obstruction lt, 8' lighted assy, rigid, wind cone	EA	6,233.60	464.55
1330	Airport ltg, 8' lighted assembly, rigid, wind cone	EA	6,171.49	417.47
1340	Airport ltg, w/obstruction lt, 8' unlighted assy, rigid, wind cone	EA	4,486.64	417.47
1350	Airport ltg, 8' unlighted assembly, rigid, wind cone	EA	5,631.45	366.69

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1360	Airport ltg, sock, nylon, 8' x 1.5', wind cone	EA	275.88	67.20
16680 1399	Control panel			
1400	Airport ltg, 48V DC, 6.6A, cont panel, series ckt monitor	EA	5,549.29	227.53
16680 1409	Key selector switch			
1410	Airport ltg, key selector switch	EA	3,623.75	12.44
16680 1499	Series / isolation transformers			
1500	Airport ltg, 30/45 W series / isolation transformers, FAA	EA	150.78	18.47
1510	Airport ltg, 65 W series / isolation transformers, FAA	EA	154.26	16.47
1520	Airport ltg, 100 W series / isolation transformers, FAA	EA	182.15	17.27
1530	Airport ltg, 300 W series / isolation transformers, FAA	EA	253.48	27.05
1540	Airport ltg, 500 W series / isolation transformers, FAA	EA	255.81	25.95
1550	Airport ltg, Military, 30/45 W series / isolation transformers	EA	161.24	14.57
1560	Airport ltg, Military, 200 W series / isolation transformers	EA	184.48	13.87
1570	Airport ltg, Military, 300 W series / isolation transformers	EA	265.10	22.48
1580	Airport ltg, Military, 500 W series / isolation transformers	EA	276.72	20.45
16682 0010	Power distribution & control equipment			
16682 0099	Auxiliary pilot relay cabinet			
0100	Aviation lighting, 20 ckt, 50/60hz, 120 V, aux pilot relay	EA	4,595.69	173.87
0150	Aviation lighting, 20 ckt, 50hz, 120 V, aux pilot relay cabinet	EA	4,595.69	173.87
0200	Aviation lighting, 24 ckt, 60hz, 120 V, aux pilot relay cabinet	EA	4,659.86	212.19
0250	Aviation lighting, master timer cabinet, aux pilot relay cabinet	EA	3,636.32	475.28
16682 0299	Radio control receiver controller			
0300	Aviation lighting, radio control receiver controller	EA	5,442.01	1,305.46
16682 0399	Constant current regulator			
16682 0399	Wet type			
0400	Aviation lighting, 10KW constant current regulator, wet	EA	15,855.22	264.79
0420	Aviation lighting, 20 KW constant current regulator, wet	EA	18,036.11	400.53
0440	Aviation lighting, 50 KW constant current regulator, wet	EA	24,553.26	599.08
16682 0499	Dry type			
0500	Aviation lighting, 4 KW constant current regulator, dry	EA	7,666.17	134.31
0520	Aviation lighting, 7.5 KW constant current regulator, dry	EA	8,459.22	173.87
0540	Aviation lighting, 10 KW constant current regulator, dry	EA	9,348.22	264.79
16682 0599	Lamp failure detector			
0600	Aviation lighting, 120/240V 1-6.6A & 3-20A, lamp failure	EA	5,420.68	105.93
16682 0699	Accessories, plug cutout			
0700	Aviation lighting, dist & control eqpt, access, plug	EA	396.30	41.83
0720	Aviation ltg, primary connector kit, dist & cont eqpt, access	EA	89.29	36.72
0740	Aviation ltg, secondary connector kit, dist & cont eqpt, access	EA	113.69	42.19
0760	Aviation lighting, heat shrink kit, dist & cont eqpt, access	EA	113.41	52.60
16682 0799	Runway lighting cable			
0800	Aviation ltg, runway lighting cable, elec typ C cable	LF	5.18	0.33
0820	Aviation ltg, runway lighting cable, terminal blocks	EA	18.33	3.77
16683 0010	Guidance sign			
16683 0999	Taxi, internally illuminated 18 Inch Letters			
1000	Guidance sign, taxi, 1 face, 4' W 18" letters, intl illuminated	EA	2,469.25	85.62
1020	Guidance sign, taxi, 1 face, 6' W 18" letters, intl illuminated	EA	3,478.51	115.37
1040	Guidance sign, taxi, 1 face, 8' W 18" letters, intl illuminated	EA	4,790.31	138.22
1060	Guidance sign, taxi, 1 face, 10' W 18" letters, intl illuminate	EA	5,844.80	136.31
1100	Guidance sign, taxi, 2 face, 4' W 18" letters, intl illuminated	EA	2,727.82	158.86
1120	Guidance sign, taxi, 2 face, 6' W 18" letters, intl illuminated	EA	3,950.72	162.20
1140	Guidance sign, taxi, 2 face, 8' W 18" letters, intl illuminated	EA	5,467.16	185.64
1160	Guidance sign, taxi, 2 face, 10' W 18" letters, intl illuminate	EA	6,693.29	228.57
1300	Guidance sign, taxi, 1 face, 2.5' W 12-15" letters, intl	EA	2,283.33	85.62
1320	Guidance sign, taxi, 1 face, 4' W 12-15" letters, intl	EA	2,283.33	74.21
1340	Guidance sign, taxi, 1 face, 6' W 12-15" letters, intl	EA	3,158.97	90.52
1360	Guidance sign, taxi, 1 face, 8' W 12-15" letters, intl	EA	4,267.43	116.27
1400	Guidance sign, taxi, 2 face, 2.5' W 12-15" letters, intl	EA	2,432.74	90.45
1420	Guidance sign, taxi, 2 face, 4' W 12-15" letters, intl	EA	2,432.74	88.32
1440	Guidance sign, taxi, 2 face, 6' W 12-15" letters, intl	EA	3,366.90	103.33
1460	Guidance sign, taxi, 2 face, 8' W 12-15" letters, intl	EA	4,618.85	103.46
16683 1999	Taxi, unlighted 18 Inch Letters			
2000	Guidance sign, taxi, 4' wide, unlighted, 18" letters, 1 face	EA	1,135.63	43.92

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2020	Guidance sign, taxi, 6' wide, unlighted, 18" letters, 1 face	EA	1,535.35	31.38
2040	Guidance sign, taxi, 8' wide, unlighted, 18" letters, 1 face	EA	2,191.01	36.82
2060	Guidance sign, taxi, 10' wide, unlighted, 18" letters, 1 face	EA	3,672.51	49.23
2100	Guidance sign, taxi, 4' wide, unlighted, 18" letters, 2 face	EA	2,191.01	49.19
2120	Guidance sign, taxi, 6' wide, unlighted, 18" letters, 2 face	EA	3,004.38	64.87
2140	Guidance sign, taxi, 8' wide, unlighted, 18" letters, 2 face	EA	4,345.82	87.19
2160	Guidance sign, taxi, 10' wide, unlighted, 18" letters, 2 face	EA	5,159.20	102.73
16683 2999	Distance marker sign, internally illuminated			
3000	Guidance sign, distance marker sign, 48" x 48", intl	EA	3,561.49	85.62
16683 3499	Taxiway marker reflector post With Reflective Strips On Contract Background			
3500	Taxiway marker refl post, w/refl strips on contrasting bkgd, 18"	EA	61.50	15.74
3520	Taxiway marker refl post, w/refl strips on contrasting bkgd, 24"	EA	66.15	15.64
3540	Taxiway marker refl post, w/refl strips on contrasting bkgd, 30"	EA	74.28	15.81
3560	Taxiway marker refl post, w/refl strips on contrasting bkgd, 36"	EA	80.09	15.98
16683 3999	Accessories			
4000	Aviation ltg, 100 W transformer, guidance sign, access	EA	175.37	16.64
4100	Aviation ltg, conn kit for 1/c cable, guidance sign, access	EA	71.82	27.92
4200	Aviation ltg, base housing, 12" dia, guidance sign, access	EA	311.22	49.23
16684 0010	Heliport lighting			
0100	Heliport lighting, three 500 W quartz lamps, beacon, rotating	EA	6,422.02	458.30
0200	Heliport lighting, floodlights, 2-500 W on 10' steel pole	EA	1,603.63	80.88
0300	Heliport lighting, 40 W landing dir light, with base housing	EA	413.20	52.13
0400	Heliport lighting, obstruction light, 69 W	EA	151.45	31.02
0420	Heliport lighting, obstruction light, two 69 W lights	EA	276.09	52.16
0500	Heliport lighting, 40 W pad insert light, with base housing	EA	831.51	61.84
0600	Heliport lighting, perimeter light, with base housing, 40 W	EA	430.63	52.13
0700	Heliport lighting, radio control receiver, air to ground	EA	4,084.38	85.62
0800	Heliport ltg, 69w obstn lt, wind cone, 8' sock x20', std. 4-150w fxtr	EA	4,960.88	507.64
0900	Heliport lighting, photoelectric unit	EA	351.89	39.69
16688 0010	Tower & obstruction lighting			
16688 0099	Beacon, flashing red Lamps-620 Watts			
0100	Tower & obstn ltg, 2 wire cable, hazard beacon, flashing red,	EA	1,353.76	41.39
0110	Tower & obstn ltg, 3 wire cable, hazard beacon, flashing red,	EA	1,934.74	52.83
0150	Tower & obstn ltg, beacon, failure alarm relay assembly	EA	488.10	71.41
16688 0199	Elevated approach bar			
0200	Tower & obstn ltg, elevated approach bar	EA	34,561.67	1,206.53
16688 0299	Flasher, sequential			
0300	Tower & obstn ltg, flasher, sequential	EA	4,263.78	190.18
0310	Tower & obstn ltg, flasher, sol state, 1 ckt	EA	459.05	33.42
0320	Tower & obstn ltg, w/cast al hsg, flasher, sol state, 2 ckt siml	EA	761.84	78.38
0330	Tower & obstn ltg, w/cast al hsg, flasher, sol state, 3 ckt siml	EA	1,060.40	92.22
0350	Tower & obstn ltg, 2 obstn lt & 1 beacon alarm flasher, fail safe	EA	1,708.30	128.21
16688 0499	Junction box			
0500	Tower & obstn ltg, 4" x 2", size 1, 4 hubs, J-box	EA	111.36	24.78
0510	Tower & obstn ltg, 8" x 4" x 2.5", size 2, 2 or 4 hubs, J-box	EA	208.38	31.62
0520	Tower & obstn ltg, 8.5" x 11-5/8" x 3-5/8", size 3, 4 hubs, J-box	EA	415.52	44.59
0530	Tower & obstn ltg, 18" x 12" x 6", size 4, 4 hubs, J-box	EA	1,034.22	106.93
0600	Tower & obstn ltg, w/elbow, breather, screened, 1" nipple,	EA	117.17	45.56
0610	Tower & obstn ltg, drain, screened, 1" nipple, J-box	EA	111.36	43.26
16688 0999	Light controllers			
1000	Tower & obstn ltg, 0-150', tower cabinets only, light controller	EA	1,615.63	243.91
1010	Tower & obstn ltg, 150-450', tower cabinets only, light	EA	1,873.19	164.83
16688 1499	Light kit			
Note: Complete With Fixtures, Junction Boxes, Controllers, Accessories, Less Wire And Conduit				
1500	Tower & obstn ltg, light kit, to 100' tower	EA	3,652.95	1,134.44
1510	Tower & obstn ltg, light kit, 101' to 150' tower	EA	7,395.73	1,320.24
1520	Tower & obstn ltg, light kit, 151' to 200' tower	EA	8,694.73	1,982.57
1530	Tower & obstn ltg, light kit, 201' to 300' tower	EA	11,725.75	3,241.14
1540	Tower & obstn ltg, light kit, 301' to 450' tower	EA	19,662.74	4,992.94
16688 1999	Obstruction marker light			
2000	Tower & obstn ltg, marker light, 1-69W FAA spec L-810	EA	151.45	34.45
2010	Tower & obstn ltg, marker light, 2-69W FAA spec L-810	EA	276.09	42.99

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2100	Tower & obstn lgt, marker light, mil spec M6-6-7830b, 1-116W	EA	245.57	37.59
2110	Tower & obstn lgt, marker light, mil spec M6-6-7830b, 2-116W	EA	438.76	46.73
2200	Tower & obstn lgt, obstruction marker light, alarm	EA	621.77	67.11
2210	Tower & obstn lgt, alarm test switch for 2 lights, marker	EA	2,271.76	120.14
16688 2999	Telephone jack assembly			
3000	Tower & obstn lgt, telephone jack in FD box w/1/2" hub	EA	84.73	9.07
16688 3199	Termination bar			
3200	Tower & obstn lgt, termination bar, complete	EA	2,793.90	204.75
16688 3499	Transfer relay assembly			
3500	Tower & obstn lgt, transfer relay assembly	EA	488.10	46.63
16688 3799	Wraplock tape, galvanized steel			
3800	Tower & obstn lgt, 100' roll, wraplock tape, gavl steel	EA	446.41	203.45
16700 Electric Utilities				
16710 Electric Utilities				
16711 0010 Electric & telephone site work				
16711 0299 Underground electrical concrete marker				
0300	Elec & tel sitewk, 36"x6"x6", underground electric conc marker	EA	128.11	
16711 0359 Underground cable protection				
0360	Elec & tel sitewk, 24"x12", 2" conc, underground cable	EA	24.43	
16711 0379 Underground marking tape				
0380	Elec & tel sitewk, underground marking tape, 6" wide	LF	0.56	
16711 0399 Hand holes, precast, with concrete cover				
0500	Elec & tel sitewk, 2'x2'x2'-6" D, hand holes, precast conc,	EA	690.11	159.70
0900	Elec & tel sitewk, 3'x3'x4' D, hand holes, precast conc, w/conc	EA	1,376.05	267.67
16711 1200 Manholes, precast As Per Corp Of Engineers Guide Specs				
1810	Util vault, prcst conc,6" T, MH, comm only, 6'x12'x7' D	EA	5,869.25	1,047.13
1812	Comm Manhole 4'x4'x4' With Rack, French Drain Complete & Install	EA	2,545.05	458.30
1820	Util vault, prcst conc,6" T, MH, power only, 10'x13'x7' D	EA	8,002.19	1,117.02
1830	Util vault, prcst conc,6" T, MH, power/phone only, 4'x4'x4' D	EA	2,917.73	653.08
1840	Util vault, prcst conc,6" T, MH, power/phone only, 6'x6'x6' D	EA	3,938.39	878.22
1850	Util vault, prcst conc,6" T, MH, power/phone, 4'x8'x6' D	EA	4,618.14	878.22
1860	Util vault, prcst conc,6" T, MH, power/phone, 8'x8'x6' D	EA	6,140.15	1,001.19
1870	Util vault, prcst conc,6" T, MH, power/phone, octogon, 13' W x	EA	9,894.94	1,242.01
1900	Elec & tel sitewk, 10.5' square x 10' deep, single, manholes	EA	9,047.96	1,006.02
1950	Elec & tel sitewk, 9.35' Wx16.4' Lx & 8.69' Wx12.5' Lx10' D, double,	EA	22,052.74	1,664.01
16711 4200 Underground duct				
4580	Elec & tel sitewk, ugn dduct, PVC, type EB, 1 @ 2" dia	LF	1.78	
4900	Elec & tel sitewk, ugn dduct, PVC, type EB, 1 @ 3" dia	LF	2.26	
5210	Elec & tel sitewk, ugn dduct, PVC, type EB, 5 @ 3" dia	LF	11.30	
5300	Elec & tel sitewk, ugn dduct, PVC, type EB, 1 @ 4" dia	LF	3.08	
8000	Elec & tel sitewk, elb, 2" dia, ftg, PVC type EB, ugn dduct	EA	26.04	
8200	Elec & tel sitewk, elb, 3" dia, ftg, PVC type EB, ugn dduct	EA	31.33	
8400	Elec & tel sitewk, elb, 4" dia, ftg, PVC type EB, ugn dduct	EA	40.70	
8800	Elec & tel sitewk, adapter, 2" dia, ftg, PVC type EB, ugn dduct	EA	12.94	
9000	Elec & tel sitewk, adapter, 3" dia, ftg, PVC type EB, ugn dduct	EA	19.86	
9200	Elec & tel sitewk, adapter, 4" dia, ftg, PVC type EB, ugn dduct	EA	25.42	
16712 0010 Conduit instld direct burial in slab/duct bank				
16712 0020 Concrete encased only, no conc or exc				
0050	Conduit, conc encased only, PVC sched 40, conduit, w/cplg 1" dia	LF	1.55	
0060	Conduit, conc encased only, PVC sched 40, elbows, 1" dia	EA	10.96	
0070	Conduit, conc encased only, PVC sched 40, adaptor, 1" dia	EA	8.25	
16712 1000 Direct burial in slab/duct bank				
Note: Concrete Slabs Or In Duct Bank Note: 1. Based On Parallel Runs Up To 14'. 2. Labor Cost Based On Unloading At Job Site, Measuring And Cutting, Layout, Fabrication And Assembly 3. Material Items Are For Called Items 4. Trenching, Backfilling And Concrete Are Excluded				
16712 1009 PVC, schedule 40, with coupling				
1010	Conduit, direct burial only, PVC sched 40, 1/2" dia, w/coupling	LF	1.11	
1020	Conduit, direct burial only, PVC sched 40, 3/4" dia, w/coupling	LF	1.29	
1030	Conduit, direct burial only, PVC sched 40, 1" dia, w/coupling	LF	1.55	
1040	Conduit, direct burial only, PVC sched 40, 1.5" dia, w/coupling	LF	2.09	
1050	Conduit, direct burial only, PVC sched 40, 2" dia, w/coupling	LF	2.53	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1060	Conduit, direct burial only, PVC sched 40, 3" dia, w/coupling	LF	4.28	
1070	Conduit, direct burial only, PVC sched 40, 4" dia, w/coupling	LF	6.45	
1080	Conduit, direct burial only, PVC sched 40, 5" dia, w/coupling	LF	9.03	
1090	Conduit, direct burial only, PVC sched 40, 6" dia, w/coupling	LF	11.65	
16712 1109	PVC, schedule 40, elbows			
1110	Conduit, direct burial only, PVC elbow sched 40, 1/2" dia	EA	7.13	
1120	Conduit, direct burial only, PVC elbow sched 40, 3/4" dia	EA	8.82	
1130	Conduit, direct burial only, PVC elbow sched 40, 1" dia	EA	10.96	
1140	Conduit, direct burial only, PVC elbow sched 40, 1.5" dia	EA	17.52	
1150	Conduit, direct burial only, PVC elbow sched 40, 2" dia	EA	23.60	
1160	Conduit, direct burial only, PVC elbow sched 40, 3" dia	EA	42.23	
1170	Conduit, direct burial only, PVC elbow sched 40, 4" dia	EA	63.65	
1180	Conduit, direct burial only, PVC elbow sched 40, 5" dia	EA	92.00	
1190	Conduit, direct burial only, PVC elbow sched 40, 6" dia	EA	152.49	
16712 1209	PVC, schedule 40, adapters			
1210	Conduit, direct burial only, PVC adapter sched 40, 1/2" dia	EA	5.88	
1220	Conduit, direct burial only, PVC adapter sched 40, 3/4" dia	EA	7.34	
1230	Conduit, direct burial only, PVC adapter sched 40, 1" dia	EA	8.25	
1240	Conduit, direct burial only, PVC adapter sched 40, 1.5" dia	EA	9.54	
1250	Conduit, direct burial only, PVC adapter sched 40, 2" dia	EA	12.97	
1260	Conduit, direct burial only, PVC adapter sched 40, 3" dia	EA	19.55	
1270	Conduit, direct burial only, PVC adapter sched 40, 4" dia	EA	28.34	
1280	Conduit, direct burial only, PVC adapter sched 40, 5" dia	EA	41.62	
1290	Conduit, direct burial only, PVC adapter sched 40, 6" dia	EA	54.26	
16712 1339	PVC, schedule 40, bell end, cap & plug			
1340	Conduit, direct burial only, PVC bell end & cap, 1.5" dia	EA	13.87	
1350	Conduit, direct burial only, 2" dia, PVC bell end & plug sched	EA	17.21	
1360	Conduit, direct burial only, 3" dia, PVC bell end & plug sched	EA	21.63	
1370	Conduit, direct burial only, 4" dia, PVC bell end & plug sched	EA	29.46	
1380	Conduit, direct burial only, 5" dia, PVC bell end & plug sched	EA	37.30	
1390	Conduit, direct burial only, 6" dia, PVC bell end & plug sched	EA	46.97	
16712 1449	PVC, schedule 40, base spacer			
1449	1-1/2" Base Spacer, avg 4" wide Direct Burial, Glued Coupling	EA	4.10	
1450	Conduit, direct burial only, PVC base spacer, 2" dia	EA	6.28	
1460	Conduit, direct burial only, PVC base spacer, 3" dia	EA	7.49	
1470	Conduit, direct burial only, PVC base spacer, 4" dia	EA	8.37	
1480	Conduit, direct burial only, PVC base spacer, 5" dia	EA	9.24	
1490	Conduit, direct burial only, PVC base spacer, 6" dia	EA	10.86	
1546	1" Intermediate Spacers, avg 4" wid Direct Burial, Glued Coupling	EA	3.66	
1548	1-1/2" Intmd Spacers, avg 4" wide Direct Burial, Glued Coupling	EA	4.38	
16712 1549	PVC, schedule 40, intermediate spacer			
1550	Conduit, direct burial only, PVC intermediate spacer, 2" dia	EA	5.94	
1560	Conduit, direct burial only, PVC intermediate spacer, 3" dia	EA	7.49	
1570	Conduit, direct burial only, PVC intermediate spacer, 4" dia	EA	8.37	
1580	Conduit, direct burial only, PVC intermediate spacer, 5" dia	EA	9.24	
1590	Conduit, direct burial only, PVC intermediate spacer, 6" dia	EA	10.86	
16712 2009	Rigid steel, plastic coated, with coupling			
2010	Conduit, dir burial only, 40mil w/cplg, 1/2" dia, rigid steel, plstc	LF	4.62	
2020	Conduit, dir burial only, 40mil w/cplg, 3/4" dia, rigid steel, plstc	LF	5.54	
2030	Conduit, dir burial only, 40mil w/cplg, 1" dia, rigid steel, plstc	LF	6.91	
2040	Conduit, dir burial only, 40mil w/cplg, 1.5" dia, rigid steel, plstc	LF	9.78	
2050	Conduit, dir burial only, 40mil w/cplg, 2" dia, rigid steel, plstc	LF	12.46	
2060	Conduit, dir burial only, 40mil w/cplg, 3" dia, rigid steel, plstc	LF	24.26	
2070	Conduit, dir burial only, 40mil w/cplg, 4" dia, rigid steel, plstc	LF	34.73	
2080	Conduit, dir burial only, 40mil w/cplg, 5" dia, rigid steel, plstc	LF	64.34	
16712 2109	Rigid steel, plastic coated, elbows			
2110	Conduit, dir burial only, 40mil, elbow 1/2" dia, rigid steel, plstc	EA	20.35	
2120	Conduit, dir burial only, 40mil, elbow 3/4" dia, rigid steel, plstc	EA	22.39	
2130	Conduit, dir burial only, 40mil, elbow 1" dia, rigid steel, plstc	EA	26.79	
2140	Conduit, dir burial only, 40mil, elbow 1.5" dia, rigid steel, plstc	EA	36.32	
2150	Conduit, dir burial only, 40mil, elbow 2" dia, rigid steel, plstc	EA	50.37	
2160	Conduit, dir burial only, 40mil, elbow 3" dia, rigid steel, plstc	EA	111.70	
2170	Conduit, dir burial only, 40mil, elbow 4" dia, rigid steel, plstc	EA	151.50	
2180	Conduit, dir burial only, 40mil, elbow 5" dia, rigid steel, plstc	EA	314.53	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16712 2209	Rigid steel, plastic coated, union			
2210	Conduit, dir burial only, 40mil, union 1/2" dia, rigid steel, plstc	EA	38.82	
2220	Conduit, dir burial only, 40mil, union 3/4" dia, rigid steel, plstc	EA	40.73	
2230	Conduit, dir burial only, 40mil, union 1" dia, rigid steel, plstc	EA	52.83	
2240	Conduit, dir burial only, 40mil, union 1.5" dia, rigid steel, plstc	EA	94.57	
2250	Conduit, dir burial only, 40mil, union 2" dia, rigid steel, plstc	EA	123.31	
2260	Conduit, dir burial only, 40mil, union 3" dia, rigid steel, plstc	EA	222.17	
2270	Conduit, dir burial only, 40mil, union 4" dia, rigid steel, plstc	EA	351.42	
2280	Conduit, dir burial only, 40mil, union 5" dia, rigid steel, plstc	EA	651.10	
16712 3000	Direct burial conc slab/duct bank, no conc/exc			
16712 3009	Flexible steel conduit			
3010	Conduit, 1/2" dia, dir burial in conc slab/duct bank flex stl	LF	1.72	
3020	Conduit, 3/4" dia, dir burial in conc slab/duct bank flex stl	LF	2.10	
3030	Conduit, 1" dia, dir burial in conc slab/duct bank flex stl	LF	3.68	
16712 3109	Flexible steel connectors			
3110	Conduit, 1/2" dia, dir burial in conc slab/duct bank flex stl	EA	5.03	
3120	Conduit, 3/4" dia, dir burial in conc slab/duct bank flex stl	EA	5.82	
3130	Conduit, 1" dia, dir burial in conc slab/duct bank flex stl	EA	8.91	
16712 3209	Flexible steel couplings			
3210	Conduit, 1/2" dia, dir burial in conc slab/duct bank flex stl	EA	14.93	
3220	Conduit, 3/4" dia, dir burial in conc slab/duct bank flex stl	EA	18.27	
3230	Conduit, 1" dia, dir burial in conc slab/duct bank flex stl	EA	21.33	
16712 4009	PVC, schedule 80, with coupling			
4010	Conduit, 1/2" dia, dir burial in conc slab/duct bank PVC, sch80	LF	1.68	
4020	Conduit, 3/4" dia, dir burial in conc slab/duct bank PVC, sch80	LF	2.07	
4030	Conduit, 1" dia, dir burial in conc slab/duct bank PVC, sch80	LF	2.68	
4040	Conduit, 1.5" dia, dir burial in conc slab/duct bank PVC, sch80	LF	3.57	
4050	Conduit, 2" dia, dir burial in conc slab/duct bank PVC, sch80	LF	4.46	
4060	Conduit, 3" dia, dir burial in conc slab/duct bank PVC, sch80	LF	7.59	
4070	Conduit, 4" dia, dir burial in conc slab/duct bank PVC, sch80	LF	11.02	
4080	Conduit, 5" dia, dir burial in conc slab/duct bank PVC, sch80	LF	14.92	
4090	Conduit, 6" dia, dir burial in conc slab/duct bank PVC, sch80	LF	21.62	
16712 4109	PVC, schedule 80, elbows			
4110	Conduit, 1/2" dia, dir burial in conc slab/duct bank PVC, sch80	EA	11.70	
4120	Conduit, 3/4" dia, dir burial in conc slab/duct bank PVC, sch80	EA	15.06	
4130	Conduit, 1" dia, dir burial in conc slab/duct bank PVC, sch80	EA	18.34	
4140	Conduit, 1.5" dia, dir burial in conc slab/duct bank PVC, sch80	EA	26.00	
4150	Conduit, 2" dia, dir burial in conc slab/duct bank PVC, sch80	EA	34.83	
4160	Conduit, 3" dia, dir burial in conc slab/duct bank PVC, sch80	EA	69.43	
4170	Conduit, 4" dia, dir burial in conc slab/duct bank PVC, sch80	EA	102.42	
4180	Conduit, 5" dia, dir burial in conc slab/duct bank PVC, sch80	EA	137.45	
4190	Conduit, 6" dia, dir burial in conc slab/duct bank PVC, sch80	EA	252.19	
16712 4209	PVC, schedule 80, adapters			
4210	Conduit, 1/2" dia, dir burial in conc slab/duct bank PVC, sch80	EA	7.67	
4220	Conduit, 3/4" dia, dir burial in conc slab/duct bank PVC, sch80	EA	9.33	
4230	Conduit, 1" dia, dir burial in conc slab/duct bank PVC, sch80	EA	10.70	
4240	Conduit, 1.5" dia, dir burial in conc slab/duct bank PVC, sch80	EA	12.34	
4250	Conduit, 2" dia, dir burial in conc slab/duct bank PVC, sch80	EA	14.39	
4260	Conduit, 3" dia, dir burial in conc slab/duct bank PVC, sch80	EA	20.86	
4270	Conduit, 4" dia, dir burial in conc slab/duct bank PVC, sch80	EA	30.50	
4280	Conduit, 5" dia, dir burial in conc slab/duct bank PVC, sch80	EA	42.82	
4290	Conduit, 6" dia, dir burial in conc slab/duct bank PVC, sch80	EA	55.96	
16712 4309	PVC, schedule 80, bell end, cap and plug			
4310	Conduit, 1.5" dia, sch80 bell end&cap, dir bur in conc	EA	16.67	
4320	Conduit, 2" dia, sch80 bell end&plug, dir bur in conc	EA	18.63	
4330	Conduit, 3" dia, sch80 bell end&plug, dir bur in conc	EA	23.21	
4340	Conduit, 4" dia, sch80 bell end&plug, dir bur in conc	EA	31.02	
4350	Conduit, 5" dia, sch80 bell end&plug, dir bur in conc	EA	39.45	
4360	Conduit, 6" dia, sch80 bell end&plug, dir bur in conc	EA	50.91	
16712 4369	PVC, schedule 80, base spacer			
4370	Conduit, 2" dia, dir bur in conc slab/duct bank PVC, sch80 base	EA	7.96	
4372	1 1/2" Base Spacer, avg 4" wide DirBl In Concrete Slab-Duct Bank	EA	5.27	
4380	Conduit, 3" dia, dir bur in conc slab/duct bank PVC, sch80 base	EA	9.92	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4390	Conduit, 4" dia, dir bur in conc slab/duct bank PVC, sch80 base	EA	11.23	
4400	Conduit, 5" dia, dir bur in conc slab/duct bank PVC, sch80 base	EA	12.48	
4410	Conduit, 6" dia, dir bur in conc slab/duct bank PVC, sch80 base	EA	13.87	
16712 4419	PVC, schedule 80, intermediate spacer			
4420	Conduit, 2" dia, dir bur in conc slab/duct bank PVC, sch80 intmd	EA	7.51	
4422	1" Intermediate Spacers, avg 4" wd DirBl In Concrete Slab-Duct Ban	EA	4.76	
4424	1 1/2" PVC Sch 80 Intmd Spacers DirBl In Concrete Slab-Duct Bank	EA	5.66	
4430	Conduit, 3" dia, dir bur in conc slab/duct bank PVC, sch80 intmd	EA	9.66	
4440	Conduit, 4" dia, dir bur in conc slab/duct bank PVC, sch80 intmd	EA	10.60	
4450	Conduit, 5" dia, dir bur in conc slab/duct bank PVC, sch80 intmd	EA	11.70	
4460	Conduit, 6" dia, dir bur in conc slab/duct bank PVC, sch80 intmd	EA	13.87	
16712 5000	Direct burial in duct bank, no conc or exc			
16712 5009	Plastic duct, type DB with coupling			
5010	Conduit, dir burial in duct bank, 1.5" dia, plastic duct, DB	LF	6.18	
5020	Conduit, dir burial in duct bank, 2" dia, plastic duct, DB	LF	7.63	
5030	Conduit, dir burial in duct bank, 3" dia, plastic duct, DB	LF	13.47	
5040	Conduit, dir burial in duct bank, 3.5" dia, plastic duct, DB	LF	16.18	
5050	Conduit, dir burial in duct bank, 4" dia, plastic duct, DB	LF	21.30	
5060	Conduit, dir burial in duct bank, 5" dia, plastic duct, DB	LF	31.10	
5070	Conduit, dir burial in duct bank, 6" dia, plastic duct, DB	LF	42.27	
16712 5109	Plastic duct, type DB, elbows			
5110	Conduit, dir burial in duct bank, 1.5" dia, plastic duct, DB	EA	21.76	
5120	Conduit, dir burial in duct bank, 2" dia, plastic duct, DB	EA	27.16	
5130	Conduit, dir burial in duct bank, 3" dia, plastic duct, DB	EA	34.96	
5132	3 1/2" Plastic Duct Elbow 90 Deg. Direct Burial In Plastic Duct B	EA	35.41	
5150	Conduit, dir burial in duct bank, 4" dia, plastic duct, DB	EA	47.58	
5160	Conduit, dir burial in duct bank, 5" dia, plastic duct, DB	EA	60.43	
5170	Conduit, dir burial in duct bank, 6" dia, plastic duct, DB	EA	97.82	
16712 5209	Plastic duct, type DB, female adapter			
5210	Conduit, dir bur in duct bank, DB female adptr, 1.5" dia, plastic	EA	9.54	
5220	Conduit, dir bur in duct bank, DB female adptr, 2" dia, plastic	EA	11.13	
5230	Conduit, dir bur in duct bank, DB female adptr, 3" dia, plastic	EA	16.59	
5240	Conduit, dir bur in duct bank, DB female adptr, 3.5" dia, plastic	EA	20.92	
5250	Conduit, dir bur in duct bank, DB female adptr, 4" dia, plastic	EA	22.39	
5260	Conduit, dir bur in duct bank, DB female adptr, 5" dia, plastic	EA	36.65	
5270	Conduit, dir bur in duct bank, DB female adptr, 6" dia, plastic	EA	46.79	
16712 5309	Plastic duct, type DB, male adapter			
5310	Conduit, dir bur in duct bank, 1.5" dia, plastic duct, DB male	EA	10.89	
5320	Conduit, dir bur in duct bank, 2" dia, plastic duct, DB male	EA	12.97	
5330	Conduit, dir bur in duct bank, 3" dia, plastic duct, DB male	EA	17.93	
5340	Conduit, dir bur in duct bank, 3.5" dia, plastic duct, DB male	EA	22.38	
5350	Conduit, dir bur in duct bank, 4" dia, plastic duct, DB male	EA	25.37	
5360	Conduit, dir bur in duct bank, 5" dia, plastic duct, DB male	EA	38.85	
5370	Conduit, dir bur in duct bank, 6" dia, plastic duct, DB male	EA	46.29	
16712 5409	Plastic duct, type DB, bell end and plug			
5410	Conduit, dir bur in duct bank, DB bell end & plug, 1.5" dia, plastic	EA	12.10	
5420	Conduit, dir bur in duct bank, DB bell end & plug, 2" dia, plastic	EA	14.84	
5430	Conduit, dir bur in duct bank, DB bell end & plug, 3" dia, plastic	EA	17.80	
5432	3 1/2" Plstc Duct Bell End & Plug Direct Burial In Plastic Duct B	EA	17.19	
5440	Conduit, dir bur in duct bank, DB bell end & plug, 4" dia, plastic	EA	23.34	
5450	Conduit, dir bur in duct bank, DB bell end & plug, 5" dia, plastic	EA	30.00	
5460	Conduit, dir bur in duct bank, DB bell end & plug, 6" dia, plastic	EA	35.80	
16712 5469	Plastic duct, type DB, base spacer			
5469	1 1/2" Base Spacer, avg 4" wide Direct Burial In Plastic Duct Bk	EA	4.07	
5470	Conduit, dir bur in duct bank, 2" dia, plastic duct, DB base spacer	EA	6.28	
5480	Conduit, dir bur in duct bank, 3" dia, plastic duct, DB base spacer	EA	7.92	
5490	Conduit, dir bur in duct bank, 4" dia, plastic duct, DB base spacer	EA	8.72	
5500	Conduit, dir bur in duct bank, 5" dia, plastic duct, DB base spacer	EA	9.68	
5510	Conduit, dir bur in duct bank, 6" dia, plastic duct, DB base spacer	EA	11.12	
16712 5519	Plastic duct, type DB, intermediate spacer			
5519	1 "Intmd Spacers, avg 4" wide Direct Burial In Plastic Duct Bk	EA	4.34	
5520	Conduit, dir bur in duct bank, 2" dia, plastic duct, DB intmd	EA	5.94	
5530	Conduit, dir bur in duct bank, 3" dia, plastic duct, DB intmd	EA	7.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5540	Conduit, dir bur in duct bank, 4" dia, plastic duct, DB intmd	EA	8.37	
5550	Conduit, dir bur in duct bank, 5" dia, plastic duct, DB intmd	EA	9.24	
5560	Conduit, dir bur in duct bank, 6" dia, plastic duct, DB intmd	EA	10.86	

16800 Special Systems

16801 Special Systems

16813 0010 Clock & program systems

16813 0099 Control panel with master clock

0100	Clock & program system control panel with master clock	EA	2,018.61	329.86
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16813 0199 Clock

0200	Clock & program system clock, 12", single, with buzzer	EA	179.30	18.01
0210	Clock & program system clock, 12", double, with buzzer	EA	426.69	29.56
0220	Clock & program system clock, decorative, up to 24"	EA	456.90	29.56

16813 0299 Time clock

0300	Clock & program system time clock	EA	232.32	10.02
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16813 0399 Time switch, digital

0400	Clock & program system time switch, digital, 4 circuit	EA	1,155.43	31.99
0420	Clock & program system time switch, digital, 6 circuit	EA	1,367.31	35.66
0440	Clock & program system time switch, digital, 8 circuit	EA	2,210.41	62.37

16813 0499 Burglar alarm

0500	Clock & program sys, burglar alarm card reader	EA	782.82	47.93
0510	Clock & program sys, burglar alarm exit cont lock, horn	EA	434.50	38.62
0520	Clock & program sys, burglar alarm exit cont lock, light	EA	480.98	38.62
0540	Clock & program sys, burglar alarm ind panel, 10 channel	EA	1,487.75	81.23

16813 0999 Intrusion detection

1000	Clock & program sys, control panel, 16 zone, intrusion	EA	2,451.13	713.24
1010	Clock & program sys, electric door strike, intrusion detection	EA	457.89	82.41

16813 1999 Access control, multiplexer/connector panel

2000	Clock & program sys, multiplexer/conn panel, 12 zone,	EA	3,053.15	627.62
2010	Clock & program sys, finger print reader w/ctrl unit,	EA	5,435.52	62.40
2020	Clock & program sys, infra red heat detector, access control	EA	780.37	58.34
2030	Clock & program sys, elec door release w/exit button, access	EA	865.33	41.69
2040	Clock & program sys, access control, signal booster	EA	400.21	48.28
2050	Clock & program sys, host PC with line printer, access	EA	5,526.01	142.64

16814 0010 Telephone equipment

16814 0099 Public telephone

16814 0099 Plywood backboard

0100	Tel eqpt, public, plywood backboard, 3/4" thick, 4' x 4'	EA	112.06	8.88
0120	Tel eqpt, public, plywood backboard, 3/4" thick, 4' x 8'	EA	131.08	17.97

16814 0499 Terminal cabinet

0500	Tel eqpt, public, terminal cabinet, 24" x 30" x 6"	EA	393.80	42.58
0510	Tel eqpt, public, terminal cabinet, 24" x 36" x 6"	EA	421.01	42.79
0520	Tel eqpt, public, terminal cabinet, 24" x 42" x 6"	EA	443.40	39.80
0530	Tel eqpt, public, terminal cabinet, 30" x 48" x 6"	EA	572.70	50.31
0540	Tel eqpt, public, terminal cabinet, 30" x 54" x 6"	EA	700.60	76.10
0550	Tel eqpt, public, terminal cabinet, 36" x 60" x 6"	EA	905.53	74.32

16814 0999 Terminal blocks

1000	Tel eqpt, public, circuit isln sw, term block (#22-8 AWG wire)	EA	12.20	3.10
1020	Tel eqpt, public, fuse holder, 600V, 3A, term block (#22-8 AWG	EA	13.52	1.39
1040	Tel eqpt, public, fuse holder, 600V, 10A, term block (#22-8 AWG	EA	20.23	2.78
1060	Tel eqpt, public, box, solderless w/lug, term block	EA	8.35	3.14
1080	Tel eqpt, box, solderless w/lugs, 600V, 60A, term blocks (#22-8 AWG	EA	8.44	3.18
1090	Tel eqpt, box, mini w/lugs, 300V, 30A, term blocks (#22-8 AWG	EA	6.18	2.36
1100	Tel eqpt, public, flat connection, term block (#22-8	EA	6.18	2.32
1120	Tel eqpt, public, flat conn, 300V, 20A, term block (#22-8 AWG	EA	6.18	2.39
1140	Tel eqpt, public, ground block, term block (#22-8 AWG wire)	EA	15.28	3.67
1160	Tel eqpt, public, self lifting, 300V, 40A, term block (#22-8 AWG	EA	6.55	2.39

16814 1299 Terminal block mounting channel

1300	Tel eqpt, public, 1.6', galv steel, term block mounting	EA	9.47	2.22
1310	Tel eqpt, public, 3.3', galv steel, term block mounting	EA	15.23	2.53
1320	Tel eqpt, public, 6.6', galv steel, term block mounting	EA	21.01	2.25
1350	Tel eqpt, public, 1.6', bichromated zinc, term block	EA	11.88	2.46

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1360	Tel eqpt, public, 3.3', bichromated zinc, term block	EA	17. 70	2. 39
1370	Tel eqpt, public, 6.6', bichromated zinc, term block	EA	23. 42	2. 00
1380	Patch Panel w/Bracket, 24 Port, Cat. V, w/RJ45 Connector		454. 73	
1390	Patch Panel w/Bracket, 48 Port, Cat. V, w/RJ45 Connector		780. 38	
1410	Mbdular Plug, RJ45, Cat V, on ea ch end of cable		10. 53	
1420	Mbdular Plug, RJ11, Cat V, on ea ch end of cable		6. 40	
16814 1499 Outlet block				
1500	Tel eqpt, public, outlet block	EA	9. 62	0. 93
1510	Tel eqpt, public, outlet block for floor box (box nouded)	EA	32. 69	13. 52
16814 1599 Telephones, desk or wall type				
1600	Tel eqpt, telephone, desk type	EA	242. 93	12. 52
1610	Tel eqpt, telephone, wall type	EA	252. 50	18. 33
16820 0010 Detection systems				
3570	Detection sys, limit switch, 10 A rated, HD, lever arm	EA	125. 92	11. 41
3572	Detection, ultrasonic lvl sensing xmtr, sensing range:4-20	EA	3, 152. 93	71. 11
5200	Detection sys, fire, smke detector, ceiling type	EA	132. 90	18. 30
16821 0010 Cathodic protection				
16821 0999 Anodes				
16821 0999 Magnesium type				
1000	Cathodic protection, anodes, magnesium type, 9 #	EA	164. 98	56. 28
1010	Cathodic protection, anodes, magnesium type, 17 #	EA	257. 91	82. 39
1020	Cathodic protection, anodes, magnesium type, 32 #	EA	390. 19	108. 33
1030	Cathodic protection, anodes, magnesium type, 48 #	EA	564. 46	150. 77
16821 1099 Graphite type with epoxy cap				
1100	Cathodic protection, 3" x 60" (32#), anodes, graphite type	EA	230. 52	65. 44
1110	Cathodic protection, 4" x 80" (68#), anodes, graphite type	EA	379. 20	84. 15
1120	Cathodic protection, 6" x 72" (80#), anodes, graphite type	EA	1, 215. 16	150. 22
1130	Cathodic protection, 6" x 36" (45#), anodes, graphite type	EA	623. 35	97. 72
16821 1999 Rectifiers				
2000	Cathodic prot, 28V/10A, silicon type, air cooled, rectifiers	EA	1, 101. 97	80. 77
2010	Cathodic prot, 20V/20A, silicon type, air cooled, rectifiers	EA	1, 154. 26	76. 45
2100	Cathodic prot, 28V/10A, silicon type, oil immersed, rectifiers	EA	1, 560. 05	81. 98
2110	Cathodic prot, 20V/20A, silicon type, oil immersed, rectifiers	EA	1, 651. 84	81. 09
16821 2999 Anode backfill, coke breeze				
3000	Cathodic protection, anode backfill, coke breeze	LB	0. 42	0. 13
16821 3999 Cable, OR2				
4000	Cathodic protection, cable, OR2, #8	MF	808. 57	247. 81
4010	Cathodic protection, cable, OR2, #6	MF	913. 15	238. 71
4020	Cathodic protection, cable, OR2, #4	MF	1, 075. 82	230. 50
4030	Cathodic protection, cable, OR2, #2	MF	1, 366. 31	225. 23
4040	Cathodic protection, cable, OR2, #1	MF	1, 587. 71	223. 86
4050	Cathodic protection, cable, OR2, #1/0	MF	1, 947. 92	242. 47
4060	Cathodic protection, cable, OR2, #2/0	MF	2, 261. 65	235. 07
4070	Cathodic protection, cable, OR2, #4/0	MF	3, 178. 01	254. 61
16821 4999 Test station				
5000	Cathodic prot, 7 term box flush curb w/lock cover, test station	EA	108. 23	17. 76
5010	Cathodic prot, plug, flush, 2" dia PVC cond, cplg, refrence cell	EA	206. 68	46. 50
16822 0010 Fire alarm and detection				
16822 0099 Control panel				
0100	Fire alarm & detection, control panel, 1 zone	EA	920. 06	126. 13
0110	Fire alarm & detection, control panel, 2 zone	EA	1, 086. 94	196. 63
0130	Fire alarm & detection, control panel, 4 zone	EA	1, 514. 76	326. 97
0150	Fire alarm & detection, control panel, 8 zone	EA	2, 724. 66	499. 74
0170	Fire alarm & detection, control panel, 12 zone	EA	3, 546. 98	680. 50
0190	Fire alarm & detection, control panel, 16 zone	EA	4, 536. 86	963. 85
0192	Fire Alarm Transmitter Type BT 2 -34 4-Zone W/Antenna Sys & Grnd	EA	2, 546. 90	115. 54
0193	Fire Alarm Radio Transmitter Typ e BT 2-4 16Zone, W/Antenna BSA-1	EA	3, 698. 02	239. 67
0194	Omni Directional UHF Antenna Kit GOGGI	EA	312. 11	77. 02
0195	Relay Fan Shutdown, Heavy Duty DPDT	EA	55. 03	16. 76
0196	Zone Card, 2-Zones Per Card	EA	160. 87	16. 76
16822 0299 Transmitter with directional antenna				
0300	Fire alarm & detection, 16 zone, transmitter w/directional	EA	5, 593. 45	337. 20

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16822 0350	Transmitter Equipment			
0352	Addressable Fire Alarm Panel, 400 Pts.	EA	3,423.36	77.03
0354	Additional Analog Loop Unit	EA	1,043.38	39.23
0356	Smoke Detector - Ionazation	EA	120.72	16.76
0358	Smoke Detector - Photoelectric	EA	130.44	16.76
0360	Heat Detector	EA	94.78	15.79
0362	Pull Station & Back Box	EA	102.73	12.23
0364	Control Module	EA	122.17	12.23
0366	Horn Strobe & Back Box	EA	122.17	12.23
0368	Twist Pair Cable	MF	197.39	13.66
0370	Duct Detector, Smoke	EA	267.87	19.93
0372	Fire Alarm Panel Surge Protector	EA	122.21	14.76
0374	Control Relay For F/A Panel	EA	76.18	8.41
0376	Transmitter W/8 Zones, W Antenn a, King Fisher Or Equal, Compl.	EA	3,486.57	308.00
16822 0380	Transmitters			
0381	MDNOCO Mdel RT-100 Interface Panel	EA	109.57	19.97
16822 0385	Lightning Arrestor			
0386	MDNOCO Mdel R-T LA	EA	55.45	15.16
0387	Ionization Detector HI Velocity MDL DI-A3, P/N 500-083263	EA	60.68	4.00
0388	Ionization Detector Air Duct MDL DI-B3, P/N 500-085081	EA	60.68	4.00
0389	Photoelectric Smoke Detector MDL PE-3, P/N 500-091540	EA	62.87	4.00
16822 0390	Antenna And Brackets			
0391	MDNOCO #190-400 Antenna	EA	96.19	12.84
0392	MDNOCO #199-008-00 Tripod Brk	EA	44.20	8.74
0393	MDNOCO #199-012-00 Eave Brk	EA	25.19	5.64
16822 0499	Emergency power supply			
0500	Fire alarm & detection, emergency power supply, 36 hour	EA	540.59	83.23
0502	24 Hour Emergency Power Supply	EA	343.01	73.24
0510	Fire alarm & detection, emergency power supply, 48 hour	EA	560.00	67.93
16822 0600	Radio Fire Alarm Transmitter And Detector			
0602	2 Zone	EA	6,986.57	244.05
0604	4 Zone	EA	8,052.29	299.54
0606	8 Zone	EA	9,277.54	581.26
0608	12 Zone	EA	10,371.44	790.23
16822 0700	Remove & Relocate Fire Alarm Control Panel			
0702	Remove & Relocate Fire Alarm Control Panel, 1 To 4 Zone	EA	445.75	
0704	Remove & Relocate Fire Alarm Control Panel, 8 To 16 Zones	EA	1,498.32	
16822 0999	Detectors			
1000	Fire alarm & detection, flame, ultra violet type, detector	EA	2,189.24	43.97
1100	Fire alarm & detection, pelec smoke, sgl stage,120V, detector	EA	134.43	16.65
1110	Fire alarm & detection, pelec smoke, releasing unit 120V,	EA	107.01	17.37
1200	Fire alarm & detection, ionization, std, detector	EA	128.75	26.39
1210	Fire alarm & detection, ionization, releasing unit,	EA	130.67	31.34
1220	Fire alarm & detection, ionization, self contained,	EA	114.96	25.50
1230	Fire alarm & detection, ionization, air duct, std,	EA	333.01	61.90
1240	Fire alarm & detection, ionization, air duct, self	EA	351.92	62.19
1242	Recessed Ceiling Fixture With standard Ionization Detector	EA	166.02	44.22
1244	Addressable Duct Detector Housin g,W/Sampling Tube,Photo Or Ion	EA	508.47	71.32
1300	Fire alarm & detection, 15_ rate-of-rise, thermal,136_-190_	EA	46.84	16.58
1310	Fire alarm & detection, thermal, releasing unit, detector	EA	107.59	35.80
1312	Ceil Fixture w/Thermal Detector	EA	79.63	30.60
1314	Addressable Thermal Detector, Fixed Rate Of Rise, W Base	EA	123.66	17.58
1398	Ceiling Fixture w/Flame Detector	EA	824.47	37.94
1400	Fire alarm & detection, 3,10 or 30 sec delay, flame, std,	EA	861.95	28.28
1402	Smoke/Heat Photoelectric 24 VDC 135 Deg/15 Deg ROR W Led	EA	104.52	18.65
1404	Photoelectric Smoke Detector Series 80, 24 VDC W Led	EA	89.65	15.69
1406	Photoelectric Smoke Detector Series 80,24VDC,W/Aux Relay,&LED	EA	97.25	12.84
1408	Photoelectric Duct Smoke Detecto r Tubl Incl 24 VDC W LED	EA	196.81	18.65
1410	Heat Det. 24VDC,135-195Deg, 15De g ROR,Comb W/Local Alarm Photoe	EA	130.28	38.34
1412	Water Floor Switch Alarm Pressure Activated	EA	118.40	23.50
1414	Combination Holder & Closer	EA	434.22	23.50
1416	Door Holder Assembly, Including Testing	EA	133.52	38.33
1418	Smoke Dctctr,Photoelec,Milt Sta 120 V	EA	65.38	15.98

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1420	Addressable Ion Sensor W Base	EA	190.22	15.98
1422	Addressable Photo Sensor W Base	EA	190.22	15.98
1424	Photoelectric Detector W/Heat & Base, Addressable	EA	187.30	15.98
1426	Individual Addressable Module (Monitor)	EA	125.09	15.98
1428	Zone Adapter Module (Controls)	EA	230.07	15.98
1430	Zone Adapter Module (Signal)	EA	244.65	15.98
16822 1999 Pull station				
2000	Fire alarm & detection, pull station, manual, std	EA	79.37	21.51
2010	Fire alarm & detection, pull station, manual, weatherproof	EA	144.21	21.01
2012	Addressable Manual Pull Station	EA	136.80	15.97
2014	Addressable Manual Pull Station, Weather Proof	EA	221.84	18.15
2016	Remove/Relocate Manual Pull Station, STD/WP	EA	30.00	
16822 2200 Combination 135 Thru 190 Degree Fized Temp Or				
2202	115Volt Photoelectric Smoke Detector W/Travelor	EA	49.76	19.33
2204	24VDC Photoelectric Smoke Detector	EA	80.40	31.67
2206	Photoelectric Smoke Detector, 9Volt DC Battery Operated	EA	62.24	21.82
16822 2999 Annunciation panel, remote				
3000	Fire alarm & detection, 1 zone, annunciation panel, remote	EA	232.06	27.03
3010	Fire alarm & detection, 4 zone, annunciation panel, remote	EA	313.06	35.20
3030	Fire alarm & detection, 8 zone, annunciation panel, remote	EA	433.40	87.01
3050	Fire alarm & detection, 12 zone, annunciation panel, remote	EA	645.76	112.87
3070	Fire alarm & detection, 16 zone, annunciation panel, remote	EA	768.12	215.67
3071	Remote LCD Annunciator	EA	184.74	27.49
3072	Power Failure Annunciator, Std Un	EA	376.49	46.07
16822 3200 Radio Equipment				
3202	Fire Alarm Antenna w/Mast	EA	214.91	77.03
3204	Fire Alarm Auto-Dialer	EA	472.20	36.37
3206	Combination Interface Pnl & Transmitter, King-Fisher #KFRTI-WP-8	EA	2,710.17	226.08
16822 4999 Alarm				
5000	Fire alarm & detection, alarm lamp, remote, 1 unit	EA	47.57	11.48
5010	Fire alarm & detection, alarm lamp, remote, 4 unit	EA	103.50	17.22
5030	Fire alarm & detection, alarm lamp, remote, 8 unit	EA	415.18	23.22
5050	Fire alarm & detection, alarm lamp, remote, 12 unit	EA	562.51	28.49
5100	Fire alarm & detection, alarm bell, 4"	EA	66.59	19.79
5120	Fire alarm & detection, alarm bell, 6"	EA	74.45	20.29
5140	Fire alarm & detection, alarm bell, 8"	EA	88.73	25.14
5160	Fire alarm & detection, alarm bell, 10"	EA	101.63	26.42
5200	Fire alarm & detection, alarm horn, std	EA	107.02	31.13
5210	Fire alarm & detection, alarm horn, weatherproof	EA	154.20	50.60
5300	Fire alarm & detection, alarm light & horn	EA	150.02	31.17
5302	Surface Mtd Horn/Strobe Unit	EA	117.62	28.88
5304	Recessed Mtd Horn/Strobe Unit	EA	135.46	39.23
5306	Remove/Relocate Fire Alarm Bell or Horn	EA	30.00	
5308	Remove/Relocate Alarm Lamp Remote	EA	20.00	
16822 5400 Visual Fire Signal Indicator				
5402	Two Zone Control Module (5Spcs) MDL CP-35, P/N 500-884879	EA	535.62	5.46
5404	Time Limit In/Out Variable (1 SPC) MDL TL-30U, P/N 500-885330	EA	108.07	4.57
5406	Power Supply 24VDC-120VAC, 10 Amp MDL PS-35, P/N 500-884950	EA	247.64	5.46
5408	Dual Switch Module (1 SPC), MDL SM-30, P/N 500-821670	EA	74.53	4.57
16822 5500 Interior Fire Signal System				
5501	Dual Zone Module MDL ZU-35, P/N 500-888583	EA	162.02	4.57
5502	Dual Zone W/Switches (1 SPC) MDL ZU-35DS, P/N 500-887255	EA	214.51	4.57
5503	Dual Contact Zone Module (1SPC) MDL ZN-31U, P/N 500-886170	EA	158.38	4.57
5504	Dual Zone Gate Valve Supv (1SPC) MDL ZN-34U, P/N 500-886180	EA	158.38	4.57
16822 5600 Sprinkler Alarm System				
5602	Alarm Extender Module (1SPC) MDL AE-30U, P/N 500-884320	EA	104.43	4.57
5604	Dual Relay MDD (SPDT-3AMP) (1SPC) MDL SR-30, P/N 500-821620	EA	109.53	4.57
5606	Multi-Relay (DPDT 3AMP) (2SPC) MDL SR-32, P/N 500-821790	EA	199.20	4.57
5608	Multi-Relay (SPDT2A) MDL SR-35, P/N 500-887690	EA	151.08	4.57
16822 5700 Heat Detection System				
5702	Battery Charger Transfr MDD(2SPC) MDL BC-35, P/N 500-884857	EA	172.96	4.57
5704	Battery Extender Module (1SPC) MDL BE-35, P/N 500-884859	EA	94.22	4.57
5706	5/10 AHBAT CHAS & BRKET (3 SPC) MDL BK-33, P/N 515-087135	EA	71.21	5.46

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5708	Battery Transfer Module (1 SPC) MDL TC-30U, P/N 500-885260	EA	285.55	5.46
16822 5800	City Fire Alarm For Basic Mt. See 16050			
5802	8 MDD Enclosure Kit/EA-31 Kit, MDL EA-31, P/N 599-021031	EA	311.80	5.46
5804	16 MDD Enclosure Kit/EA-32 Kit MDL EA-32, P/N 599-021032	EA	335.13	5.46
5806	24 MDD Enclosure Kit/EA-33 Kit MDL EA-33, P/N 599-021033	EA	411.68	5.46
5808	40 MDD Enclosure Kit/EA-35 Kit MDL EA-35, P/N 599-021035	EA	614.35	5.46
16822 5900	Cerberus Pyrotronics Rails And Brackets For System 3			
5902	EK-31 Rail Kit, MDL EK-31, P/N 545-083275	EA	92.84	2.71
5904	EK-32 Rail Kit, MDL EK-32, P/N 545-083276	EA	105.23	2.71
5906	EK-33 Rail Kit, MDL EK-33, P/N 545-083277	EA	124.18	2.71
5908	EK-35 Rail Kit, MDL EK-35, P/N 545-083278	EA	200.74	2.71
16822 5999	Alarm testing, level annunciation			
6000	Fire alarm & detection, set point type, alarm testing, level	LS	178.30	89.15
16822 6100	Cerberus Pyrotronics Bases For Detectors			
6101	Series 3 Low Profile Base, MDL 3-S, P/N 595-381804	EA	14.75	4.57
16822 6105	Cerberus Pyrotronics Manual Stations			
6106	Manual Stations N.O. SPST, MDL MS-51, P/N 500-620503	EA	42.46	4.57
16822 6110	Cerberus Pyrotronics Mini Horn/Mini Strobe Horn			
6111	24 VDC Mini Horn HI SND Out MDL HM-24, P/N 500-690860	EA	20.58	4.57
6112	24 VDC Mini Horn HI SND White P MDL HM-24W, P/N 500-687613	EA	20.58	4.57
6113	ADA Minihorn Flsh & SPFC Mt MDL HMF-5S, P/N 500-691957	EA	58.50	4.57
6114	15CD Non Sleeping Wall & Ceiling MDL HM5, P/N 500-693125	EA	67.24	4.57
6115	15CD/75, Ceiling & Wall Red MDL HM5/75, P/N 500-693126	EA	68.22	4.57
6116	30CD Non Sleeping Wall & Ceiling MDL HMB0, P/N 500-693127	EA	67.24	4.57
6117	75CD Non Sleeping Wall & Ceiling MDL HM5, P/N 500-693128	EA	69.19	4.57
6118	110CD Non Sleeping Wall & Ceiling MDL HM10, P/N 500-693129	EA	76.72	4.57
6119	Horn 120VAC Polarized, MDL HAC-120, P/N 190-114309	EA	28.36	4.57
16822 6120	Cerberus Pyrotronics Horn/ Strobe Horn			
6121	Multitone Signal, MDL M1, P/N 500-693130	EA	33.71	4.57
6122	Multitone Signal, MDL M4, P/N 500-693131	EA	33.71	4.57
6123	15CD Non Sleeping Wall & Ceiling MDL MTS15, P/N 500-693132	EA	76.72	4.57
6124	15CD Non Sleeping Wall & Ceiling MDL MTS4-15, P/N 500-693133	EA	76.72	4.57
6125	15CD/75CD Ceiling & Wall Red MDL MTS15/75, P/N 500-693134	EA	78.18	4.57
6126	15CD/75CD Ceiling & Wall Red MDL MTS4-15/75, P/N 500-693135	EA	79.96	5.46
6127	30CD Non Sleeping Wall & Ceiling MDL MTS30, P/N 500-693136	EA	78.50	5.46
6128	30CD Non Sleeping Wall & Ceiling MDL MTS4-30, P/N 500-693137	EA	78.50	5.46
6129	75CD Non Sleeping Wall & Ceiling MDL MTS75, P/N 500-693138	EA	83.60	5.46
6130	75CD Non Sleeping Wall & Ceiling Red MDL MTS4-75, P/N 500-693139	EA	83.60	5.46
16822 6135	Cerberus Pyrotronics Accessories			
6136	Horn, Double Projector MDL DPH, P/N 500-687639	EA	49.02	4.57
6137	Horn, Single Projector MDL SPH, P/N 500-687638	EA	35.89	4.57
16822 6140	Cerberus Pyrotronics CXL Command CTR			
6142	CXL Base System ND L CXL P/N 500- 686332	EA	18,329.23	145.49
16822 6150	Cerberus Pyrotronics CXL Color Graphics Computer And Printers			
16822 6155	Basic Cost Items			
6157	CXL U.L. List Ctr Grap Software, MDL CXL-G, P/N 500-691691	EA	22,156.74	
16822 6160	Cerberus Pyrotronics SCXL Command Ctr			
6162	SCXL Hrd Intr Mtl & Sft Pkg, MDL SCXL, P/N 500-692758	EA	27,624.60	145.49
6164	IBM UL Listed PC MDL CP7537-964 P/N 500-692870	EA	8,344.44	72.75
6166	IBM 19" Graphic Monitor UL MDL CP7554-001, P/N 500-692872	EA	5,501.94	55.63
6168	IBM 14" Graphic Monitor UL MDL MDL CP7544-001, P/N 500-692871	EA	2,385.26	55.63
6170	U.L. Listed Parallel Printer MDL PAL-1, P/N 500-692407	EA	1,438.29	34.95
16822 6200	Cerberus Pyrotronics MKL Equipment/ Basic System			
6201	MKL Main Board MDL MMB-1 P/N 500 890376	EA	2,420.92	72.75
6202	Display/ Control Keyboard MDL MKB-1 P/N 500-892077	EA	1,363.80	72.75
6203	MKL 6 AMP Power Supply MDL MPS-, P/N 500-490357	EA	469.92	6.99
6204	MKL 12AMP Power Supply MDL MPS-, 12, P/N 500-492209	EA	633.95	6.99
16822 6300	Complete MKL & MKLV Small System Pkgs			
6301	Mini MKL System Pkg, MDL MKL-SS P/N 599-692129	EA	4,399.85	40.90
6302	Mini MKL Voice System Package MDL MKLV-SS, P/N 599-693077	EA	7,352.20	72.75
16822 6400	Cerberus Pyrotronics Enclosures			
6401	MKL Door, MDL MDR-2, P/N 305- 092037	EA	264.25	9.09

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6402	Red MKL Door, MDL MDR-2R P/N 305 092038	EA	309.45	9.09
6403	MKL Full Size Enclosure, MDL MBR -2 P/N 310-092039	EA	300.70	9.09
6404	Plexiglass Door Insert, MDL-1 P/N 500-692069	EA	76.64	6.49
6405	Blank Metal Door Inserts MDL MDB -1, P/N 500-692070	EA	45.37	4.57
6406	Metal Louver Vent Door Inserts MDL MDG-1, P/N 500-692213	EA	81.82	4.57
6407	Middle, Dead Front, No Openings MDL MHD-1, P/N 305-092071	EA	54.85	4.57
6408	Bottom, Dead Front, NO Openings MDL MHD-2, P/N 305-092072	EA	54.85	4.57
6409	Bottom, Dead Front, Used W/DV- 100 MDL MHD-2W P/N 305-092625	EA	100.05	4.57
6410	Middle, DF W/Switch Openings MDL MHD-3, P/N 305-092073	EA	54.85	4.57
6411	Middle, DF W/Switch & Prtr Opnings MDL MHD-4, P/N 305-092074	EA	54.85	4.57
6412	Bottom, DF W/SW Opnings For MSE- 2 MDL MHD-5, P/N 305-092377	EA	127.75	4.57
6413	Blank Switch Plate W/Overlay MDL VSB-1, P/N 500-692075	EA	23.58	2.71
6414	Single Row Rail Kit For MBR-2 MDL MSR-1, P/N 545-092415	EA	114.71	2.71
6415	MKL Mini Encl (Backbox & Door) MDL MSE-2, P/N 500-892358	EA	375.22	5.46
6416	Remote Control/ Annunciator(MKB) MDL RCC-1, P/N 500-692533	EA	1,232.84	26.00
16822 6500 Cerberus Pyrotechnics System Expansion Accessories (MKL, MKLR)				
6501	Remote Power Supply/ Controller MDL PSR-1, P/N 500-891182	EA	466.36	5.46
6502	Style 4 Communication Module MDL Net-4, P/N 500-891181	EA	120.06	5.46
6503	Style 7 Communication Module MDL Net-7, P/N 500-091914	EA	229.41	5.46
6504	MKL 6 Amp Power Supply MDL MPS-6 P/N 500-490357	EA	466.36	5.46
6505	MKL 12 Amp Power Supply MDL MPS- 12, P/N 500-492209	EA	630.39	5.46
6506	Expansion Cardcage (4 Slots) MDL MDM-4, P/N 500-890269	EA	310.02	4.57
6507	Expansion Cardcage (2 Slots) MDL MDM-2, P/N 500-892766	EA	191.18	4.57
6508	Analog Loop Dr (2 Circuits) MDL ALD-2I, P/N 500-891618	EA	610.39	4.57
6509	Relay Module (4 Relays) MDL CRM -4, P/N 500-890401	EA	300.54	4.57
6510	Signal CKT Module (2 Circuits) MDL CSM-4, P/N 500-890402	EA	364.70	4.57
6511	Conventional Zone MDD (4 Zones) MDL CZM-4, P/N 500-890488	EA	355.22	4.57
6512	Thermal Strip Printer (Internal) , MDL TSP-40, PN 500-890775	EA	1,266.13	13.38
6513	Network I/O Interface Module MDL MDI-1, p/N 500-890827	EA	373.44	4.57
6514	Output Driver MDD (16 Outputs) MDL MDD-16, P/N 500-890828	EA	227.63	4.57
6515	Input Driver MDD (16 Inputs) MDL MD-16, P/N 500-891747	EA	227.63	4.57
6516	Intelligent Control PT (Output) MDL ICP, P/N 500-892467	EA	129.21	4.57
6517	Peripheral Interface Module MDL PIM-1, P/N 500-691324	EA	154.73	4.57
6518	Remote Control/Annunciator (MKB) MDL RCC-1, P/N 500-692533	EA	1,238.19	26.75
6519	Short Circuit Line Isolator MDL LIM-1, P/N 500-892361	EA	74.86	5.46
6520	Parallel Prtr Interface Module MDL PIM-2, P/N 500-692406	EA	741.53	6.49
6521	U.L. Listed Parallel Prtr MKL/ CXL MDL PAL-1, P/N 500-692407	EA	1,379.45	6.49
16822 6600 Cerberus Pyrotechnics MKLV Voice Equipment				
6601	Audio Control Module, MDL ACM-1 P/N 500-892082	EA	1,157.17	4.57
6602	Terminal Block Module, MDL TBM-1 P/N 500-892096	EA	191.18	4.57
6603	Microphone Master Module MDL MM -1, P/N 500-892079	EA	422.93	6.49
6604	Telephone Master Module MDL TMM- 1, P/N 500-892080	EA	468.14	6.49
6605	Switch And LED Module MDL VSM-1, P/N 500-892065	EA	200.65	4.56
6606	LED Module (8 LED Pairs) MDL VLM -1, P/N 500-892086	EA	191.17	4.56
6607	VSM/VLM Row To Row Cable MDL MRRC-1, P/N 500-692531	EA	19.93	2.71
6608	Back-Up Tone Card (ACM/OCC) MDL BTC-1, P/N 500-891185	EA	191.17	4.56
6609	Voice Module Cardcage (4 Slots) MDL OMM-1, P/N 500 891235	EA	310.01	4.56
6610	Voice Module Cardcage (2 Slots) MDL OMM-2, P/N 500-892767	EA	191.17	4.56
6611	Output Control Card Module MDL OCC-1, P/N 500-891184	EA	373.43	4.56
6612	AMP. Supervisory And B.U. Card MDL ASC-1, P/N 500-891187	EA	282.30	4.56
6613	AMP. & Riser Supervisory Card MDL ASC-2, P/N 500-892084	EA	282.30	4.56
16822 6700 Cerberus Pyrotechnics Digital Voice Message Player (Voice Link)				
6701	Single Chan Message Playback Unit MDL DV-100, P/N 500-692574	EA	1,288.32	6.49
6702	Two Chan Message Playback Unit MDL DV-100-2, P/N 500-692634	EA	1,561.71	6.49
6703	Input Contact Expander Module MDL DV-EM P/N 500-692575	EA	559.27	6.49
6704	STD Male EVAC MSG For DV-100 MDL Message #1, P/N 500-692613	EA	231.19	6.49
6705	STD Female EVAC MSG For DV-100 MDL Message #2, P/N 500-692614	EA	231.19	6.49
6706	Male EVAC/ Alert Msg For DV-100- 2 MDL Msg #3, P/N 500-692615	EA	231.19	6.49
6707	Female EVAC/Alert MSG For DV-100 -2 MDL Msg #4, P/N 500-692616	EA	231.19	6.49
6708	Program Message Kit (Custom) MDL PMK, P/N 500-692579	EA	231.19	6.49
16822 6800 Cerberus Pyrotechnics Accessories				
6801	8Ft Expansion Ribbon Cable (MDM) MDL MER-8, P/N 500-690849	EA	56.31	4.57
6802	MDD Ribbon Cable Extender MDL MRE-37, P/N 555-190941	EA	36.62	4.57
6803	Panel Tamper Switch (UL 1076) MDL TSW-2, P/N 500-692413	EA	49.02	4.57

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6804	TRI/TRX MOUNTING Plate MDL MPX -2, P/N 500-887821	EA	27.15	4.57
6805	Battery (15AH, 24 VDC) MDL BP-61 P/N 175-387194	EA	369.80	4.57
6806	Battery (35AH) MDL BTX-1 P/N 175 083897	EA	361.05	4.57
6807	Battery (55AH) MDL BTX-2 P/N 175 083898	EA	570.29	4.57
6808	TSP-40 Printer Paper, MDL TSP-40 -PP P/N 500-691888	EA	54.68	
6809	ACM-1 MNTG Bracket MDM Footprint MDL ACM-MPT, P/N 500-892752	EA	100.05	4.57
6810	Fiber Optic Mtg Plt MDM Footprt MDL MKL-MPFO, P/n 500-692880	EA	100.05	4.57
6811	MFG BRKT For PIM-1 W/Old MKB-1 MDL PIM-MB, P/N 500-691749	EA	27.15	4.57
16822 6900 Cerberus Pyrotronics MKL Module Firmware Upgrade Kits				
6901	MB-1 Firmware Upgrade Kit MDL MSU-1K, P/N 500-691254	EA	100.05	4.57
6902	MKB Firmware Upgrade Kit MDL MKB -UK, P/N 500-691781	EA	100.05	4.57
6903	ALD-21 Firmware Upgrade Kit MDL ALD-UK, P/N 500-691821	EA	45.37	4.57
6904	CZM-4 Firmware Upgrade Kit MDL CZM-UK, P/N 500-691824	EA	45.37	4.57
6905	mDI Firmware Upgrade Kit MDL MDI -UK, P/N 500-691977	EA	45.37	4.57
6906	CRM-4 Firmware upgrade Kit MDL CRM-UK, P/N 500-691823	EA	45.37	4.57
6907	PSR-1 Firmware Upgrade Kit MDL PSR-UK, P/N 500-691826	EA	45.37	4.57
6908	CM-300 Firmware Upgrade Kit MDL CM-UK, P/N 500-691825	EA	45.37	4.57
6909	CXL Firmware Upgrade Kit MDL CXL -UK, P/N 500-691779	EA	737.97	4.57
6911	MB Environmental Comp Upgrade MDL IEC-1, P/N 500-692054	EA	100.05	4.57
6912	MB History Logging Upgrade MDL SEG-Flash, P/N 500-692053	EA	100.05	4.57
6913	ACM-1 Firmware Upgrade Kit MDL ACM-UK, P/N 500-692927	EA	45.37	4.57
6914	OCC-1 Firmware Upgrade Kit MDL OCC-UK, P/N 500-692928	EA	45.37	4.57
6915	VSM-1/VLM-1 Firmware Upgrade Kit MDL VNET-UK, P/N 500-692929	EA	45.37	4.57
6916	BTC-1 Firmware Upgrade Kit MDL BTC-UK, P/N 500-692930	EA	45.37	4.57
6917	ASC And ZC Card Firmware Upgrade MDL GPSI-UK, P/N 500-692931	EA	45.37	4.57
6918	CSM-4 Firmware Upgrade Kit MDL CSM-UK, P/N 500-691822	EA	45.37	4.57
6919	Net-7 Firmware Upgrade Kit MDL Net-UK, P/n 500-691978	EA	45.37	4.57
16822 7000 Cerberus Pyrotronics Intelligent Initiating Devices				
16822 7001 Basic Cost Items				
7001	Intelligent ION Detection MDL ID 60I, P/N 500-090259	EA	85.47	4.57
7002	Intelligent ION HI ALT MDL ID 60IH, P/N 500-090514	EA	85.47	4.57
7003	Intelligent ION HI ALT Velocity MDL ID-60IA, P/N 500-090515	EA	89.12	4.57
7004	Intelligent ION HI ALT Vel, HI AL MDL ID-60IAH, P/N 500-090516	EA	89.12	4.57
7005	Intelligent ION Duct MDL ID-60IB P/N 500-090517	EA	89.12	4.57
7006	Intelligent ION Duct HI ALT MDL ID 60IBH, P/N 500-090518	EA	89.12	4.57
7007	Intelligent Photo MDL ILP-1, P/N 500-092650	EA	89.12	4.57
7008	Intelligent Photo W/135 Thermal MDL ILPT-1, P/N 500-092863	EA	102.24	4.57
7009	Intl Rate CMP/FIX Temp 135 Ther MDL ID-60T-135, P/N 500-090261	EA	81.10	4.57
7011	Intelligent Manual Station MDL MS-M, P/N 500-692158	EA	118.28	4.57
7012	Intel Man Station Single Action MDL MSI-10, P/N 500-091234	EA	98.59	4.57
7013	MSI-10 W/Local Fire Alarm Label MDL MSI-10LFA, P/N 500-691901	EA	107.34	4.57
7014	Intel Man Station Double Action MDL MSI-20, P/N 500-091670	EA	110.99	4.57
7015	MSI-20 W/ Local Fire Alarm Label MDL MSI-20LFA, P/N 500-691902	EA	118.28	4.57
7016	Single Input Module MDL TRI-60 P/n 500-891870	EA	100.05	4.57
7017	Single Input With Relay MDL TRI- 60R, P/N 500-891872	EA	113.17	4.57
7018	Dual Input Module MDL TRI-60D, P/N 500-891871	EA	127.75	4.57
7019	Conventional Zone Module MDL CZM -1, P/N 500-890736	EA	127.75	4.57
16822 7100 Cerberus Pyrotronics Detector Universal Bases				
7101	Universal Base, MDL DB-3S P/N 595-381804	EA	11.18	2.71
7102	Relay Base (For X or I Series) MDL DB-X3RS, P/N 500-083248	EA	52.66	4.57
7103	Audible Base (For X or I Series) MDL ADBI-60, P/N 500-090930	EA	49.02	4.57
7104	Flush Trim Ring For Bases MDL RA -ADB, P/N 500-689948	EA	11.84	4.57
16822 7200 Cerberus Pyrotronics Air Duct Smoke Detectors				
7201	Air Duct Housing, ION MDL AD-3I P/N 500-086495	EA	107.99	6.49
7202	Air Duct Housing, Photo MDL AD- 3P, P/N 500-086496	EA	112.36	6.49
7203	Duct Housing W Relay For X&I ION MDL AD-3XRI, P/N 500-086499	EA	141.52	6.49
7204	Duct Housing W Relay For X&I Photo MDL AD-3XRP, P/N 500-085600	EA	151.00	6.49
7205	Intell Duct Detector, ION MDL ID-60IB, P/N 500-090517	EA	92.68	6.49
7206	Intell Photo MDL ILP-1, P/N 500- 092650	EA	92.68	6.49
7207	Weatherproof Enclosure MDL EAD -3 P/N 500-686214	EA	299.73	6.49
7208	Reset Switch (For Series 3& X) MDL RSW-1, P/N 500-685607	EA	62.14	4.57
16822 7300 Cerberus Pyrotronics Universal Remote Lamps				
7301	One LED Lamp, Round Plate MDL RLI-1, P/N 500-390673	EA	20.58	4.57
7302	One LED Lamp, Rectangular Lamp MDL RLI-2, P/N 500-390674	EA	20.58	4.57

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16822 7400	MKL Printer, Color Graphics & Video Display Options & PC			
7401	Clr Grphcs Sftwre WInter- Face Cable, MDL MKL-G, P/N500-692050	EA	9,255.75	72.75
7402	Clr Term WIntfc Cbl & Hst Log MDL MKL-GT P/N 500-692048	EA	3,787.88	72.75
7403	U.L. Listed IBM Industrial P.C. MDL CP7537-964, P/N 500-692870	EA	8,344.44	72.75
7404	U.L. Lsted Indtrl 14"Graphic DIS Mtr, MDLCP7544-001, PN500-692871	EA	2,420.92	72.75
7405	UL Lsted Indtrl IBM 19"Grphc DIS Mtr, MDLCP7554-001PN500-692872	EA	5,537.60	72.75
7406	UL Lsted IBM Touch Slct SCR Adapt MDL CP6784 P/N 500-692877	EA	1,711.68	38.51
7407	19"Rack P.C.Rack M/G Brackets MDL CP6771 P/N 500-692873	EA	136.50	4.57
7408	19"Rack P.C.Rack M/G Slides MDL CP6023 P/N 500-692874	EA	109.53	4.57
7409	19" Rack Keyboard M/G Kit MDL CP6024, p/N 500-692875	EA	373.44	4.57
7411	19" Rack Mbnitor Shelf & Bezel MDL CP6311, P/N 500-692978	EA	459.47	4.57
7412	P.C. Front Bezel & Munting MDL CP6917, P/N 500-692879	EA	837.70	26.75
7413	Supv Interactive Mnochrome Term MDL MKL-VDT, P/N 500-691733	EA	1,965.26	72.75
7414	peripheral Interface Module MDL PIM-1, P/N 500-691324	EA	154.73	4.57
7415	Parallel Printer Interface MDD MDL PIM-2 P/N 500-692406	EA	737.97	4.57
7416	U.L. Listed Parallel Prtr MKL/ CXL MDL PAL-1, P/N500-692407	EA	1,393.72	13.66
16822 7500	Speakers			
7501	Spkrs, 1W 70.7 VRMS, Rnd, White Ceil MC, MDLSPk-9070 PN500687611	EA	42.62	9.09
16823 0010	Festoon cable system			
1000	Festoon sys, 20' L channel type track, galv steel	LF	6.20	2.53
1010	Festoon sys, channel track hanger, plated steel	EA	22.48	8.49
1020	Festoon sys, channel track joint clamp assembly	EA	19.31	8.63
1030	Festoon sys, end stop for channel track	EA	6.13	2.43
1040	Festoon sys, end clamp & cable saddle assembly w/steel saddle	EA	34.56	13.69
1050	Festoon sys, cable supp trolley, stl saddle w/sst ball bearing	EA	61.85	0.97
1060	Festoon sys, towing trolley w/stl saddle & sst ball bearing	EA	89.16	1.35
1070	Festoon sys, junction box w/2 term blocks & bracket	EA	275.06	61.09
1080	Festoon sys, watertight connector	EA	31.24	5.74
1100	Festoon sys, 12/C#16, flat festoon cable PVC jacketed, 600 V	LF	3.81	0.82
1110	Festoon sys, 12/C#14, flat festoon cable PVC jacketed, 600 V	LF	4.80	0.93
1120	Festoon sys, 8/C#16, flat festoon cable PVC jacketed, 600 V	LF	3.17	0.78
1130	Festoon sys, 8/C#14, flat festoon cable PVC jacketed, 600 V	LF	3.71	0.89
1140	Festoon sys, 7/C#12, flat festoon cable PVC jacketed, 600 V	LF	4.86	1.00
1150	Festoon sys, 4/C#14, flat festoon cable PVC jacketed, 600 V	LF	2.66	0.85
1160	Festoon sys, 4/C#12, flat festoon cable PVC jacketed, 600 V	LF	2.97	0.85
1170	Festoon sys, 80' L, complete w/7/c #12 & 4/c #14, wet env	LS	3,895.57	1,042.59
16824 0010	Radio frequency filter			
1010	Special systems, radio frequency filter, 50 amp	EA	2,672.77	90.62
1020	Special systems, radio frequency filter, 100 amp	EA	3,429.79	91.10
1030	Special systems, radio frequency filter, 150 amp	EA	4,384.19	97.39
1040	Special systems, radio frequency filter, 200 amp	EA	4,609.68	109.50
1050	Special systems, radio frequency filter, 250 amp	EA	5,959.21	156.84
1060	Special systems, radio frequency filter, 300 amp	EA	6,733.98	243.14
1070	Special systems, radio frequency filter, 500 amp	EA	11,013.52	276.91
16825 0010	Doorbell system			
0100	Doorbell sys, incl transformer, button & signal, 6" bell	EA	135.41	19.86
16830 0010	Electric heating			
16830 2810	Baseboard, fin tube			
2812	Electric heating, <250 watts/LF, baseboard fin tube, electrical	LF	35.10	8.37
2814	Electric heating, 250 watts/ LF, baseboard fin tube, electrical	LF	29.00	6.52
16830 3599	Thermostats			
3600	Electric heating, thermostats, integral	EA	43.87	3.55
3800	Electric heating, thermostats, line voltage, 1 pole	EA	61.60	4.93
3810	Electric heating, thermostats, line voltage, 2 pole	EA	61.60	5.14
16830 3899	Industrial thermostat			
3900	Electric heating, industrial thermostat, light duty	EA	52.01	5.50
3910	Electric heating, industrial thermostat, heavy duty	EA	74.67	5.71
16830 4000	Heat trace system			
4020	Electric heating, heat trace system 400 deg, 115 V, 2.5 w/LF	LF	7.28	0.25
4030	Electric heating, heat trace system 400 deg, 115 V, 5 w/LF	LF	7.28	0.25
16830 4100	Heat Trace, Electric Self Regulating 110V AC, 6W			
4110	Dry, Less Than 35'		7.55	
4120	Wet, Less Than 35'		7.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4130	Dry, W/O Ends, Mbre Than 35'		7.26	
4140	Wet, W/O Ends, Mbre Than 35'		7.26	
4150	End Connectors		11.04	
4160	Pressure Connector		11.04	
16830 5600 Unit heaters, heavy duty				
Note: Prices For 5 Kw Thru 15 Kw Units Include Built In Thermostat And Wall Munting Bracket				
6300	Electric heating, 208-240V, 5KW, w/fan & mtg brkt, 3ph, unit	EA	462.14	31.38
6500	Electric heating, 480V, 5KW, w/fan & mtg brkt, 3ph, unit	EA	593.65	28.97
6510	Unit Heaters, Electric, 7.5 KW w/Encl Coil, BI Tstat, Wall Brkt	EA	706.84	40.21
6540	Electric heating, 480V, 10KW, w/fan & mtg brkt, 3ph, unit	EA	847.52	50.96
6550	Unit Heaters, Electric, 12.5 KW w/Encl Coil, BI Tstat, Wall Brkt	EA	917.87	55.33
6580	Electric heating, 480V, 15KW, w/fan & mtg brkt, 3ph, unit	EA	1,324.80	84.75
6600	Electric heating, 480V, 20KW, w/fan & mtg brkt, 3ph, unit	EA	1,663.08	80.49
6610	Unit Heaters, Electric, 25 KW With Enclosed Coil	EA	1,400.46	78.88
6630	Electric heating, 480V, 30KW, w/fan & mtg brkt, 3ph, unit	EA	2,281.83	118.33
6632	Unit Heaters, Electric, 35 KW With Enclosed Coil	EA	1,594.78	95.32
6640	Electric heating, 480V, 40KW, w/fan & mtg brkt, 3ph, unit	EA	2,872.26	133.26
6650	Electric heating, 480V, 50KW, w/fan & mtg brkt, 3ph, unit	EA	3,460.65	153.68
16830 8110 Convector, floor unit				
8122	Electric heating, convector, floor unit, 9"H x 38"L x 4"D	EA	189.53	13.01
8126	Electric heating, convector, floor unit, 9"H x 50"L x 4"D	EA	215.97	12.66
8130	Electric heating, convector, floor unit, 9"H x 62"L x 4"D	EA	252.00	13.12
8134	Electric heating, convector, floor unit, 9"H x 74"L x 4"D	EA	281.92	12.45
16838 0010 Intrusion detection systems (OPA Funded)				
16838 0099 Fence sensor (OPA Funded)				
0100	Intrusion detection, 300' zone, capacitance prox, fence sensor	EA	4,491.48	1,063.00
0120	Intrusion detection, electric, 300' zone, fence sensor	EA	5,159.61	1,047.74
0140	Intrusion detection, electric field disturbance, fence sensor	EA	14,019.58	974.68
0160	Intrusion detection, tension wire, 8' high, fence sensor	EA	14,019.58	971.57
16838 0199 General sensor (OPA Funded)				
0200	Intrusion detection, capacitance prox, general sensor	EA	968.44	72.82
0220	Intrusion detection, glass break, general sensor	EA	159.34	69.29
0240	Intrusion detection, 500' zone, photo-electric, intr, general	EA	281.71	80.88
0260	Intrusion detection, 700' zone, photo-electric, ext, general	EA	1,026.53	73.03
16838 0299 Microwave sensor (OPA Funded)				
0300	Intrusion detection, 600' range, microwave sensor, bi-static	EA	4,230.03	1,072.11
0320	Intrusion detection, 100' range, microwave sensor, mono-static	EA	2,292.22	531.17
16838 0399 Miscellaneous equipment (OPA Funded)				
0400	Intrusion detection, simulators, glass break, misc eqpt	EA	70.88	
0420	Intrusion detection, simulators, vibration, misc eqpt	EA	213.52	65.51
0422	Intru Detect Glass Break Simul (OPA Funded)	EA	89.24	
0440	Intrusion detection, balanced mag w/cover tamper, switch, misc	EA	236.76	64.26
0460	Intrusion detection, switch, duress, footrail, misc eqpt	EA	232.11	64.47
0480	Intrusion detection, switch, duress, pushbutton, misc eqpt	EA	179.24	67.50
0500	Intrusion detection, switch, duress, wireless, misc eqpt	EA	236.18	64.26
0520	Intrusion detection, switch, access/secure, misc eqpt	EA	195.04	66.36
16838 0599 Motion sensor (OPA Funded)				
0600	Intrusion detection, 50' x 30' range, microwave, motion sensor	EA	457.17	76.92
0620	Intrusion detection, 60' range, passive infrared, motion sensor	EA	264.29	81.91
0640	Intrusion detection, 30' x 25' range, ultrasonic, motion sensor	EA	236.76	64.44
0660	Intrusion detection, vibration, motion sensor	EA	271.62	63.19
0680	Intrusion detection, 300' zone, video, exterior, motion sensor	EA	20,861.26	70.36
0700	Intrusion detection, interior, digital, motion sensor	EA	2,618.43	70.96
16838 0799 Processor, (security console) (OPA Funded)				
0800	Intrusion detection, processor, central (security console)	EA	31,040.47	282.14
0820	Intrusion detection, processor, local	EA	14,121.87	76.67
16838 0899 Software (OPA Funded)				
0900	Intrusion detection, software, application	EA	3,842.49	147.45
0920	Intrusion detection, software, system	EA	1,351.88	72.25
16838 0999 Accessories (OPA Funded)				
1000	Intrusion detection, access, buried guided radar, 300'	EA	10,214.15	993.16
1020	Intrusion detection, access, 30" x 48", fixed map display	EA	9,648.97	140.08

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1040	Intrusion detection, access, portable tester	EA	4,998.77	
1060	Intrusion detection, access, power suply, 4 hr 2 KVA	EA	8,834.93	70.61
1080	Intrusion detection, access, 60" x 96", security screen	EA	247.32	82.73
1100	Intrusion detection, access, video graphics display	EA	17,375.37	70.21
16839 0010	Access control equipment (OPA Funded)			
16839 0099	Entrance card (OPA Funded)			
0100	Access control eqpt, entrance card, barium ferrite	EA	12.78	
0120	Access control eqpt, entrance card, credential	EA	12.78	
0140	Access control eqpt, entrance card, proximity	EA	12.78	
0160	Access control eqpt, entrance card, weigand	EA	13.07	
16839 0499	Entrance card reader (OPA Funded)			
0500	Access control eqpt, entrance card reader, barium ferrite	EA	875.48	73.35
0520	Access control eqpt, entrance card reader, credential	EA	1,038.15	72.92
0540	Access control eqpt, entrance card reader, proximity	EA	695.37	57.41
0560	Access control eqpt, entrance card reader, weigand	EA	1,200.83	72.50
16839 0599	Local processor for card system (OPA Funded)			
0600	Access control eqpt, local processor for card system	EA	2,008.39	71.53
16839 0649	Scammer, eye retina (OPA Funded)			
0650	Access control eqpt, scanner, eye retina	EA	17,840.16	70.46
16839 0699	Gate opener, cantilever (OPA Funded)			
0700	Access control eqpt, gate opener, cantilever	EA	6,897.43	108.45
16839 0749	Switch, tamper (OPA Funded)			
0750	Access control eqpt, switch, tamper	EA	170.00	54.95
16839 0899	Accessories (OPA Funded)			
0900	Access control eqpt, access, electric door strike/bolt	EA	909.54	58.05
0920	Access control eqpt, access, electromagnetic lock	EA	1,612.52	57.27
0940	Access control eqpt, access, keypad for card reader	EA	991.68	87.83
16840 0010	Lightning protection			
16840 4000	Air terminals, copper			
4010	Lightning protection, air terminals, copper, 3/8" x 10"	EA	10.59	2.91
4020	Lightning protection, air terminals, copper, 1/2" x 12"	EA	13.61	2.56
4030	Lightning protection, air terminals, copper, 5/8" x 12"	EA	18.95	2.84
4040	Lightning protection, air terminals, copper, 1/2" x 24"	EA	25.69	3.48
4050	Lightning protection, air terminals, copper, 1/2" x 60"	EA	38.45	5.50
16840 4060	Air terminals, aluminum			
4070	Lightning protection, air terminals, aluminum 3/8" x 10"	EA	8.81	2.13
4080	Lightning protection, air terminals, aluminum 1/2" x 12"	EA	11.65	3.19
4090	Lightning protection, air terminals, aluminum 5/8" x 12"	EA	14.76	3.23
4100	Lightning protection, air terminals, aluminum 1/2" x 24"	EA	15.85	3.19
4110	Lightning protection, air terminals, aluminum 1/2" x 60"	EA	27.01	6.28
16840 4200	Air terminal bases, copper			
4210	Lightning protection, air term base, cu, adhesive 1/2"	EA	30.41	9.01
4220	Lightning protection, air term base, cu, bolted 1/2"	EA	39.83	13.23
4230	Lightning protection, air term base, cu, hinged 1/2"	EA	47.43	13.83
4240	Lightning protection, air term base, cu, side mounted 1/2"	EA	39.83	13.23
4250	Lightning protection, offset point support 1/2", air term	EA	43.02	12.87
4260	Lightning protection, concealed assenbly 1/2", air term base, cu	EA	73.03	25.50
4270	Lightning protection, tee connector 1/2", air term base,	EA	40.99	8.55
4280	Lightning protection, tripod, 36" for 60" air term air term	EA	58.71	17.66
4290	Lightning protection, intermediate, 1/2", air term	EA	27.16	8.01
16840 4300	Air terminal bases, aluminum			
4310	Lightning protection, adhesive 1/2", air term base, al	EA	26.70	9.82
4320	Lightning protection, bolted 1/2", air term base, al	EA	37.91	13.94
4330	Lightning protection, hinged 1/2", air term base, al	EA	46.80	15.75
4340	Lightning protection, side mounted 1/2", air term base, al	EA	37.21	13.62
4350	Lightning protection, offset point support 1/2", air term	EA	39.65	13.79
4360	Lightning protection, concealed assenbly 1/2", air term base, al	EA	69.64	26.85
4370	Lightning protection, tee connector 1/2", air term base,	EA	34.60	9.43
4380	Lightning protection, tripod, 36" for 60" air term air term	EA	58.66	18.58
4390	Lightning protection, intermediate, 1/2", air term	EA	25.24	9.29
16840 4400	Connector cable, copper			
4410	Lightning protection, connector cable, copper, through wall	EA	57.79	14.04

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4420	Lightning protection, connector cable, copper, through roof	EA	74.89	22.55
4430	Lightning protection, connector cable, copper, beam	EA	56.12	16.28
4440	Lightning protection, connector cable, copper, double bolt	EA	13.22	2.91
4450	Lightning protection, connector cable, copper, cable to bar	EA	26.90	5.64
16840 4500	Connector cable, aluminum			
4510	Lightning protection, through wall, connector cable, aluminum	EA	53.37	16.06
4520	Lightning protection, through roof, connector cable, aluminum	EA	69.58	23.97
4530	Lightning protection, connector cable, aluminum beam	EA	53.31	17.38
4540	Lightning protection, double bolt, connector cable, aluminum	EA	11.89	3.19
16840 4600	Bonding plates, copper			
4610	Lightning protection, bonding plates, copper, I beam 8" sq	EA	56.12	20.04
4620	Lightning protection, bonding plates, copper, purlin, 8" sq	EA	48.51	16.24
4630	Lightning protection, 16" sq, bonding plates, copper, large hd	EA	69.91	25.89
16840 4639	Bonding plates, aluminum			
4640	Lightning protection, 8" sq, bonding plates, aluminum I beam	EA	53.31	21.24
4650	Lightning protection, 8" sq, bonding plates, aluminum purlin	EA	45.76	17.16
4660	Lightning protection, 16" sq, bonding plates, aluminum large	EA	79.92	33.87
16840 4699	Cable support			
4700	Lightning protection, copper, loop fastener, cable support	EA	7.68	3.44
4710	Lightning protection, copper, adhesive cable holder, cable	EA	8.30	3.34
4720	Lightning protection, aluminum loop fastener, cable support	EA	7.59	3.48
4730	Lightning protection, aluminum adhesive cable holder, cable	EA	7.93	3.44
16840 4739	Bonding strap			
4740	Lightning protection, bonding strap, copper, 3/4" x 9.5"	EA	24.66	9.61
4750	Lightning protection, bonding strap, aluminum 3/4" x 9.5"	EA	22.74	10.14
16840 4759	Swivel adapter			
4760	Lightning protection, swivel adapter, copper, 1/2"	EA	10.79	1.38
4770	Lightning protection, swivel adapter, aluminum 1/2"	EA	10.16	1.53
16841 5000	Intrusion Alarm Equipment For Basic Materials			
16841 5100	Control Panel			
5101	Type A Relay Control Panel	EA	1,364.45	
5102	Type B Relay Control Panel	EA	949.62	
5103	Control Panel, Infra-red	EA	951.80	
16841 5200	Ultrasonic And Infrared Detection System			
5201	Infrared Control And Digital Communicator Systems	EA	2,376.57	
16841 5300	Type A Infrared Detectors And Remote Point Mtd.			
5301	Infrared Detectors	EA	388.44	
5302	Remote Point Module	EA	84.37	
16841 5400	Type B Ultrasonic And Infrared Multiplex System			
5401	Control Panel	EA	1,364.45	
5402	Command Display Center	EA	627.28	
5403	Long Range Passive Infrared Detector	EA	406.40	
5404	Wide Angle Passive Infrared Detector	EA	406.40	
5405	Ultrasonic Transducer Transmitter/Receiver	EA	3,222.33	
16841 5500	Type C Relay & Digital Communicator Control System			
5501	Relay And Digital Communicator Control Panel	EA	2,051.76	
5502	Personal Control	EA	517.99	
5503	Remote Keypad	EA	330.31	
16841 5700	Transformers & Transformer Cabinets			
5701	Transformer	EA	197.04	
5702	Transformer Cabinet Hinged And Ventilated With Receptacle	EA	179.34	
16841 5800	Magnetic Contact Switches			
5801	Recessed Magnetic Contact Switch	EA	61.38	
16841 5900	Roll-Up Door Contacts			
5901	Roll-Up Door Contact W/Aluminum Housing Spdt Sw., 18" Tubing&Jbox	EA	197.07	
16841 6000	Intrusion Alarm Equipment For Basic Materials			
16841 6100	Photocell Detectors			
6101	Photocell Detector Infrared Type	EA	609.34	
16841 6200	Passive Infrared Detectors			
6201	Passive Infrared Detector Wide-Angle	EA	373.18	
6202	Passive Infrared Detector 360 Degree Radial Pattern	EA	322.23	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6203	Passive Infrared Detector Plane Curtain Pattern	EA	322.23	
6204	Power Supply	EA	250.91	
16841 6300	Dual Detectors			
6301	Dual Detector	EA	174.41	
6302	Power Supply	EA	511.31	
16841 6400	Alarm Devices			
6401	Alarm Device, Mechanical Trigger	EA	295.36	
6402	Alarm Device, Electrical Trigger	EA	370.11	
6403	Alarm Bell	EA	95.18	
6404	Alarm Siren	EA	158.35	
6405	Alarm Device Power Supply	EA	392.81	
16841 6500	Remote Switches			
6501	Remote Switch	EA	87.02	
16841 6600	Hold-Up Switches			
6601	Hold-Up Switch	EA	87.03	
16841 6700	Digital Communicator			
6701	Digital Communicator With Standby Battery	EA	292.23	
16841 6800	Wiring Unshielded, Vinyl Insulated, Twisted Cu			
6801	Number 20Awg 2Cond	MF	636.77	
6802	Number 18Awg 2Cond	MF	448.00	
6803	Number 16Awg 2Cond	MF	471.19	
16841 7000	Intrusion / Security System			
7001	Security System Controller	EA	5,578.55	
7002	Battery Backup System W Batteries And Rack	EA	2,532.85	
7003	Card Reader, Proximity Type With Wall Standoff	EA	142.64	
7004	Proximity Reader Cards, Compatible Per 100 Cards	EA	1,320.85	
7005	Non-Plenum Wire (100' Min)	MF	333.04	
7006	System Instruction& Demonstration By Qualified MFG's Rep.	DAY	785.47	
16842	Intercom And Teacher Activated Security System			
16842 1000	Intercom And Teacher Activated Security System			
16842 1100	Central Control Rack			
	Note: These Items May Be Used For Other Systems In This Section.			
16842 1110	Cabinet			
1111	Cabinet	EA	341.68	
16842 1120	Central Switching Exchange			
1121	Microprocessor Panel	EA	2,516.04	
1122	Autotrol Panel	EA	1,254.55	
1123	Multiplexer Panel	EA	717.09	
1124	Multifunction Panel	EA	681.43	
16842 1130	Dc Regulated Power Supply			
1131	Power Supply	EA	250.91	
16842 1140	Am - Fm Tuner			
1141	Am - Fm Tuner	EA	394.86	
16842 1150	Channel 'A' Control Panel			
1151	Control Panel	EA	933.35	
1152	Pre-Amplifier	EA	520.30	
16842 1160	Channel 'B' Control Panel			
1161	Control Panel	EA	789.69	
1162	Pre-Amplifier	EA	520.30	
16842 1170	Speaker Selector Panel			
1171	Selector Panel	EA	2,156.85	
16842 1180	Local Sound System Control Panel			
1181	Control Panel	EA	215.27	
16842 1190	Power Amplifier			
1191	Power Amplifier	EA	971.37	
16842 1200	Central Control Rack (Con't)			
16842 1210	Microphone, Tape & Phone Receptacle Input Panel			
1211	Input Panel. Complete	EA	340.70	
16842 1220	Blank Panels			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1221	Blank Panels	EA	44.85	
16842 1230	Principals Signal Button			
1231	Principals Signal Button	EA	44.85	
16842 1240	Sound Mtion Picture Mdfication			
1241	Matching Transformer	EA	754.05	
1242	Relay	EA	44.79	
16842 1300	Emergency Sound Alarm System			
1311	Coded Tone Signal Amplifier	EA	789.69	
16842 1400	Loudspeakers			
16842 1410	Cost Adjustments			
1411	Mdifier Cost To Add Talk Back/ Listen	EA	322.23	
1412	Mdifier Cost To Add Steel Guard	EA	198.00	
16842 1500	Privacy/Call - In Switch			
1511	Mbunt In New Wall	EA	89.56	
1512	Mbunt On Existing Wall	EA	80.71	
16842 1600	Local Volume Controls			
1611	Typical Control For Speaker Circ uits - Complete	EA	92.48	
1612	Volume/Mixing Control For Amplif ier	EA	304.78	
1613	Special Mx. Contr. Box For Music Rm -Band Practice Rm(Excl. Cable	EA	258.22	
1614	Principal's & Gen. Office Sound C ontrol (Excludes Cable)	EA	190.90	
16842 1700	Microphone			
1711	Announcement Type (Offices Only)	EA	125.46	
1712	General Purpose Type	EA	125.46	
1713	Play Yard Type (Outside)	EA	165.39	
1714	25' Microphone W/Twist-Lock Plug On One End & Receptacle On Othe	EA	170.11	
1715	Flush Mbunt Box/W Receptacle	EA	79.25	
1716	Microphone Cable Heavy Duty	LF	1.98	
1717	Connector Plug	EA	53.62	
1718	Single Mc Receptacle W/S.S. Fac e Plate, Ref. P. 19.69	EA	65.33	
1719	Duplex Mc Receptacle W/S.S. Fac e Plate, Ref. P. 19.69	EA	83.06	
16842 1800	Microphone (Con't)			
1811	Desk Stand	EA	107.52	
1812	Play Yard Stand	EA	259.36	
1813	Reading Stand Mc Holder W/Flex Cable	EA	268.08	
16842 1900	Turntable			
1901	Portable W/Signal Cable Assembly And Power Cord	EA	322.75	
16842 2100	Cable			
2101	Intercom Cable	LF	0.77	
2102	Loudspeaker Cable	LF	0.60	
2103	Administrative Cable	LF	1.40	
2104	Mc Cable	LF	0.76	
2105	Solderless Connector	EA	6.45	
16842 2200	Antenna			
2201	Radio Antenna	EA	287.81	
2202	Mst W/Mbunting Hardware Assenbl y	EA	196.52	
2203	Transmission Line Cable	EA	1,127.72	
16842 2300	Pilot Lights			
2301	Pilot Light Mbunted As Specified	EA	79.40	
16842 2400	Equipment For Mtion Picture Projector			
2401	Female Plug	EA	89.26	
16842 2500	Signal Generator			
2501	Transistorized Signal Generator	EA	295.81	
16844 Retro-Fitting				
16844 1000	Retro-Fitting Existing Light Fixtures W Electro			
1001	Fixture W One Lamp	EA	55.88	
1002	Fixture W Two Lamps	EA	58.46	
1003	Fixture W Three Lamps	EA	64.86	
1004	Fixture W Four Lamps	EA	69.72	
1005	2'x2' Fixture W Two "U" Tubes	EA	76.53	
1006	2'x2' Fixture W Three Lamps	EA	74.69	
1007	8' Fixture, Two Lamps	EA	105.09	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1008	8' Fixture, Four Lamps	EA	164.91	
1009	Specular Reflector	EA	69.75	
1011	PCB Barrel Disposal	EA	560.67	
1012	55 Gallon Barrel	EA	85.96	
16844 2000	Replace Incandescent W 2 Piece Compact Fluoresc			
2001	9 Watt	EA	22.21	
2002	13 Watt	EA	22.21	
2003	18 Watt	EA	22.21	
2004	27 Watt	EA	25.67	
2005	Circular 20 Watt	EA	24.18	
2006	Circular 22 Watt	EA	23.22	
2007	Circular 30 Watt	EA	26.50	
2008	2 Lamp Concentric 50 Watt	EA	34.48	
2009	PAR 38 45 Watt Halogen	EA	10.70	
2011	1 Peice 15 Watt (SLS15)	EA	36.34	
2012	1 Peice 20 Watt (SLS20)	EA	38.37	
2013	H50 PAR 30 PD 1 Lamp	EA	13.59	
2014	PL-S Series W Adapter	EA	33.98	
2015	H. P. S. Adapter = Bulb	EA	87.82	
16844 3000	Occupancy Sensors			
3001	Wall Munted	EA	81.27	
3002	Ceiling Munted	EA	132.51	
3003	Wall Switch Replacement	EA	77.33	
3004	Sentry Switch	EA	70.46	
3005	Power Pack	EA	55.14	
16844 4000	Mbdular Furniture			
	Note: Pig-Tail Should Be Inclu			
4001	Install Pig-Tail To Supply Side	EA	9.59	
4002	Install Pig-Tail To Both Ends	EA	19.15	
4003	3' Pig-Tail Installed (Wire, 3/4" Liqatite Type EF Or LT, Contr)	EA	50.20	
16845	Nurse Call and Public Address Systems			
16845 0010	Nurse Call System			
0100	Nurse call system, single bedside call station	EA	198.14	16.35
0600	Nurse call system, pillow speaker	EA	208.59	11.84
0800	Nurse call system, double bedside call station	EA	355.60	35.07
1000	Nurse call system, duty station	EA	206.87	29.40
1600	Nurse call system, master control station for 20 stations	EA	3,720.21	331.91
1700	Nurse call system, cord set	EA	41.29	5.95
1750	Nurse call system, dome light, single	EA	27.23	4.42
1760	Nurse call system, dome light, double	EA	40.17	7.10
1800	Nurse call system, emergency call, button	EA	66.26	11.20
1810	Nurse call system, main eqpt panel	EA	783.01	27.14
1900	Nurse call system, nurses control station	EA	3,731.63	154.55
2000	Nurse call system, page/talk relay	EA	293.17	13.09
2050	Nurse call system, emergency call, pull cord	EA	59.69	11.52
2100	Nurse call system, re-entrant horn	EA	118.43	18.72
2200	Nurse call system, staff station	EA	226.94	17.48
2300	Remove/Relocate Nurse Call Light ing, Button or Pull Cord	EA	20.00	
16845 3000	Doctors In-Out Register			
3001	Doctors in-out register, registe r, 200 names	EA	11,231.24	
3002	combination control and recall, 200 names	EA	14,629.99	
3003	Doctors in-out register, recordi ng register	EA	5,677.40	
3004	Doctors in-out register, transfo rmers	EA	197.11	
3005	Doctors in-out register, pocket pages	EA	970.24	
16850 0010	Public address system			
1010	PA sys, eqpt, amplifier, 10 watt	EA	285.92	43.79
1020	PA sys, eqpt, amplifier, 35 watt	EA	434.90	53.77
1030	PA sys, eqpt, amplifier, 60 watt	EA	510.96	52.17
1040	PA sys, eqpt, amplifier, 100 watt	EA	579.52	116.54
1500	PA sys, eqpt, hand set instrument	EA	197.32	51.57
1600	PA sys, eqpt, microphone jack	EA	46.43	9.23
1610	PA sys, eqpt, microphone & stand	EA	237.16	21.68
1700	PA sys, eqpt, speakers, recessed mounted	EA	179.40	71.21

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1710	PA sys, eqpt, speakers, surface mounted	EA	92.87	23.50
1800	PA sys, eqpt, tape deck	EA	625.96	39.87
1900	PA sys, eqpt, terminal cabinet	EA	716.40	66.29
2000	PA sys, eqpt, trumpet driver, xfmr line, matching xfmr	EA	150.25	18.01
2100	PA sys, eqpt, volume control	EA	47.83	8.56
2200	PA sys, eqpt, weather proof horn	EA	150.02	23.07
2300	Remove/Relocate PA Speaker, Rece ssed / Surface	EA	25.00	
16854 8000	Cerberus Pyrotronics Systems			
16854 8400	Cerberus Pyrotronics System 3 Control Panel/ Con			
8401	Two Zone Cntrl Mdule (5Spcs) MDL CP-35, P/N 500-884879	EA	617.16	
8402	Pwr Sup 24VDC-120VAC, 10 Amp MDL PS-35, P/N 500-884950	EA	284.44	
8403	Dual Switch Mdule (1 SPC), MDL SM-30, P/N 500-821670	EA	84.72	
8404	Time Limit In/Out Vrble (1 SPC) MDL TL-30U, P/N 500-885330	EA	123.47	
16854 8500	Cerberus Pyrotronics System 3 Input Mdules			
8501	Dual Zone Mdule MDL ZU-35, P/N 500-888583	EA	185.80	
8502	Dual Zone WSwitches (1 SPC) MDL ZU-35DS, P/N 500-887255	EA	246.46	
8503	Dual Contact Zone Mdule (1SPC) MDL ZN-31U, P/N 500-886170	EA	181.60	
8504	Dual Zone Gate Vavle Supv (1SPC) MDL ZN-34U, P/N 500-886180	EA	181.60	
16854 8600	Cerberus Pyrotronics System 3 Output Mdules			
8601	Alarm Extender Mdule (1SPC) MDL AE-30U, P/N 500-884320	EA	119.26	
8602	Dual Relay MDD (SPDT-3AMP)(1SPC) MDL SR-30, P/N 500-821620	EA	125.16	
8603	Mlti-Relay (DPDT 3AMP) (2SPC) M DL SR-32, P/N 500-821790	EA	228.76	
8604	Mlti-Relay (SPDT2A) MDL SR-35, P/N 500-887690	EA	173.17	
16854 8700	Cerberus Pyrotronics System 3 Emergency Power Su			
8701	Battery Charger Trnsfr MDD(2SPC) MDL BC-35, P/N 500-884857	EA	198.44	
8702	Battery Extender Mdule (1SPC) M DL BE-35, P/N 500-884859	EA	107.47	
8703	5/10 AHBAT CHAS & BRKET (3 SPC) MDL BK-33, P/N 515-087135	EA	80.61	
8704	Battery Transfer Mdule (1 SPC) MDL TC-30U, P/N 500-885260	EA	328.24	
16854 8800	Cerberus Pyrotronics System 3 Enclosures			
8801	8 MDD Enclosure Kit/EA-31 Kit, M DL EA-31, P/N 599-021031	EA	358.58	
8802	16 MDD Enclosure Kit/EA-32 Kit M DL EA-32, P/N 599-021032	EA	385.52	
8803	24 MDD Enclosure Kit/EA-33 Kit M DL EA-33, P/N 599-021033	EA	473.97	
8804	40 MDD Enclosure Kit/EA-35 Kit M DL EA-35, P/N 599-021035	EA	708.13	
16854 8900	Cerberus Pyrotronics Rails And Brackets For Syst			
8901	EK-31 Rail Kit,MDL EK-31, P/N 54 5-083275	EA	106.43	
8902	EK-32 Rail Kit,MDL EK-32, P/N 54 5-083276	EA	120.74	
8903	EK-33 Rail Kit,MDL EK-33, P/N 54 5-083277	EA	142.65	
8904	EK-35 Rail Kit,MDL EK-35, P/N 54 5-083278	EA	231.09	
16854 9000	Cerberus Pyrotronics Accessories			
9001	Blank Face Plate, MDL BP-30,P/N 545-521095	EA	8.06	
16854 9100	Cerberus Pyrotronics Air Duct Smoke Detectors			
9101	ION Detectors FOr Duct Use, MDL DI-B3, P/N 500-085081	EA	68.73	
9102	Photoelectric Detector, MDL PE-3 P/N 500-091540	EA	71.25	
16854 9200	Cerberus Pyrotronics Detectors			
9201	Ionization Detector (Series 3), MDL DI-3, P/N 500-081806	EA	56.09	
9202	Ionization Detector HI Velocity MDL DI-A3, P/N 500-083263	EA	68.73	
9203	Ionization Detector Air Duct MDL DI-B3, P/N 500-085081	EA	68.73	
9204	Photoelectric Smoke Detector MDL PE-3, P/N 500-091540	EA	71.25	
16854 9300	Cerberus Pyrotronics Thermal Detector			
9301	Rate Of Rise/Fixed Temp 135 DEG MDL DT-135R, P/N 500-019614	EA	24.08	
16854 9400	Cerberus Pyrotronics Bases For Detectors			
9401	Series 3 Low Profile Base, MDL 3 -S, P/N 595-381804	EA	15.65	
16854 9500	Cerberus Pyrotronics Manual Stations			
9501	Manual Stations N.O. SPST, MDL MS-51, P/N 500-620503	EA	47.67	
16854 9600	Cerberus Pyrotronics Mni Horn/Mni Strobe Horn			
9601	24 VDC Mni Horn HI SND Out MDL HM-24, P/N 500-690860	EA	22.40	
9602	24 VDC Mni Horn HI SND White P MDL HM-24W, P/N 500-687613	EA	22.40	
9603	ADA Minihorn Flsh & SPFC Mnt MDL HMM-FS, P/N 500-691957	EA	66.20	
9604	15CD Non Sleeping Wall & Ceiling MDL HM5, P/N 500-693125	EA	76.31	
9605	15CD/75,Ceiling & Wall Red MDL H M5/75, P/N 500-693126	EA	77.42	
9606	30CD Non Sleeping Wall & Ceiling MDL HMB0, P/N 500-693127	EA	76.31	
9607	75CD Non Sleeping Wall & Ceiling MDL HM75, PN 500-693128	EA	78.55	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
9608	110CD Non Sleeping Wall & Ceiling MDL HM10, P/N 500-693129	EA	87.26	
9609	Horn 120VAC Polarized, MDL HAC- 120, P/N 190-114309	EA	31.38	
16854 9700	Cerberus Pyrotronics Horn/ Strobe Horn			
9701	Miltitone Signal, MDL MT, P/N 50 0-693130	EA	37.56	
9702	Miltitone Signal, MDL MF4, P/N 5 00-693131	EA	37.56	
9703	15CD Non Sleeping Wall & Ceiling MDL MTS15, P/N 500-693132	EA	87.26	
9704	15CD Non Sleeping Wall & Ceiling MDL MTS4-15, P/N 500-693133	EA	87.26	
9705	15CD/75CD Ceiling & Wall Red MDL MTS15/75, P/N 500-693134	EA	88.94	
9706	15CD/75CD Ceiling & Wall Red MDL MTS4-15/75, P/N 500-693135	EA	90.72	
9707	30CD Non Sleeping Wall & Ceiling MDL MTS30, P/N 500-693136	EA	89.04	
9708	30CD Non Sleeping Wall & Ceiling MDL MTS4-30, P/N 500-693137	EA	89.04	
9709	75CD Non Sleeping Wall & Ceiling MDL MTS75, P/N 500-693138	EA	94.93	
9710	75CD Non Sleeping Wall & Ceiling Red MDL MTS4-75, P/N 500-693139	EA	94.93	
16854 9800	Cerberus Pyrotronics Accessories			
9801	Horn, Double Projector MDL DPH, P/N 500-687639	EA	55.25	
9802	Horn, Single Projector MDL SPH, P/N 500-687638	EA	40.09	
16854 9900	Cerberus Pyrotronics CXL Command CTR			
9901	CXL Base System ND L CXL P/N 500- 686332	EA	21,132.31	
16855	Sound system			
16855 0099	Components			
0100	Sound system components, outlet, projector	EA	81.94	14.89
0200	Sound system components, outlet, microphone	EA	122.63	18.44
0400	Sound system components, speakers, ceiling or wall	EA	124.93	14.89
1000	Sound system components, monitor panel	EA	361.41	31.91
1400	Sound system components, volume control	EA	94.72	14.89
1600	Sound system components, amplifier, 250 watts	EA	1,492.12	139.00
1800	Sound system components, cabinets	EA	916.95	139.00
16855 1900	Intercom			
1910	Sound system intercom master station, 5 station capacity	EA	492.56	39.26
1920	Sound system intercom master station, 10 station capacity	EA	965.59	118.35
1930	Sound system intercom master station, remote, desk style	EA	176.87	17.04
1940	Sound system intercom master station, remote, flush wall	EA	164.08	22.57
16860	TV systems			
16860 0010	TV Sytens Mster Antenna			
0200	TV sys, master TV ant sys, 12 outlets, VHF reception & dist	EA	223.90	18.44
0650	TV sys, master TV ant sys, 10 outlets, VHF reception & dist	EA	140.34	9.61
16862 0010	Closed circuit TV system			
16862 0099	Camera			
16862 0099	General use			
0100	TV sys, CC, camera, general use, 9 mm lens	EA	665.52	93.89
0110	TV sys, CC, camera, general use, 12.5 mm lens	EA	648.09	93.89
0120	TV sys, CC, camera, general use, 25 mm lens	EA	642.28	93.89
0130	TV sys, CC, camera, general use, 50 mm lens	EA	659.71	93.89
0140	TV sys, CC, camera, general use, 75 mm lens	EA	688.76	93.89
0150	TV sys, CC, 12x zoom 15 mm - 180 mm lens, camera, general use	EA	1,493.72	200.98
0300	TV sys, CC, 12.5 mm lens, adverse env, camera, general use	EA	1,139.32	200.98
0310	TV sys, CC, 25 mm lens, adverse env, camera, general use	EA	1,156.75	200.98
0320	TV sys, CC, 50 mm lens, adverse env, camera, general use	EA	1,150.94	200.98
0330	TV sys, CC, 75 mm lens, adverse env, camera, general use	EA	1,179.99	200.98
0340	TV sys, CC, 12x zoom 15-180 mm lens, adverse env, camera,	EA	1,989.38	315.52
16862 0499	Very low light, 1" silicone intensifier Target Vidio Camera For Adverse Environments			
0500	TV sys, CC, 12.5mm lens, very low light camera (1" silicone	EA	13,589.77	200.98
0510	TV sys, CC, 25 mm lens, very low light camera (1" silicone	EA	13,531.67	200.98
0520	TV sys, CC, 50 mm lens, very low light camera (1" silicone	EA	13,647.87	200.98
0530	TV sys, CC, 75 mm lens, very low light camera (1" silicone	EA	13,694.35	200.98
0540	TV sys, CC, 12x zoom 15-180mm very low light camera (1" silicone	EA	14,635.54	200.98
0600	TV sys, CC, 12.5 mm lens, very low light camera, adverse env	EA	15,623.21	200.98
0610	TV sys, CC, very low light camera, adverse env, 25 mm lens	EA	15,797.50	200.98
0620	TV sys, CC, very low light camera, adverse env, 50 mm lens	EA	15,797.50	200.98
0630	TV sys, CC, very low light camera, adverse env, 75 mm lens	EA	15,820.74	200.98
0640	TV sys, CC, very low light camera, adverse env, 12x zoom 15-180mm	EA	15,886.48	315.52
16862 0799	Ultra low light, 1" silicone intensifier Target Video Camera			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0800	TV sys, CC, 6x zoom 18 mm - 108 mm lens, ultra low light camera	EA	16,002.67	315.48
0810	TV sys, CC, 10x zoom 15 mm - 150 mm lens, ultra low light camera	EA	16,002.67	315.48
0820	TV sys, CC, 12x zoom 15 mm - 180 mm lens, ultra low light camera	EA	16,002.67	315.48
16862 0999	Silicone diode tube			
1000	TV sys, CC, camera, silicone diode tube, 2/3" format	EA	1,869.60	46.59
1010	TV sys, CC, camera, silicone diode tube, 1" format	EA	3,903.04	46.96
16862 1099	Solid state			
1100	TV sys, CC, camera, solid state, 1/2" format	EA	359.05	10.69
1110	TV sys, CC, camera, solid state, 2/3" format	EA	1,172.43	27.52
16862 1199	Vidicon tube			
1200	TV sys, CC, camera, vidicon tube, 2/3" format	EA	661.16	45.72
1210	TV sys, CC, camera, vidicon tube, 1" format	EA	2,276.29	46.75
16862 1299	Zinc selenide tube			
1300	TV sys, CC, camera, zinc selenide tube, 2/3" format	EA	2,659.74	46.75
1310	TV sys, CC, camera, zinc selenide tube, 1" format	EA	3,043.19	46.84
16862 1399	Auto iris			
1400	TV sys, CC, camera, auto iris, 2/3" format, 5.7 mm lens	EA	365.07	7.95
1410	TV sys, CC, camera, auto iris, 2/3" format, 8.0 mm lens	EA	289.54	8.13
1420	TV sys, CC, camera, auto iris, 2/3" format, 16.0 mm lens	EA	260.49	8.52
1430	TV sys, CC, camera, auto iris, 1" format, 9.0 mm lens	EA	382.50	8.77
1440	TV sys, CC, camera, auto iris, 1" format, 12.5 mm lens	EA	301.16	8.88
1450	TV sys, CC, camera, auto iris, 1" format, 25.0 mm lens	EA	289.54	9.13
1460	TV sys, CC, camera, auto iris, 1" format, 50.00 mm lens	EA	295.35	9.09
16862 1999	Camera housing			
2000	TV sys, CC, camera housing, environmental	EA	500.49	12.87
2010	TV sys, CC, camera housing, interior	EA	231.82	11.87
16862 2099	Head end equipment			
2100	TV sys, CC, head end eqpt, video recorder w/rack mount	EA	1,012.50	5.81
2110	TV sys, CC, head end eqpt, video frame store	EA	27,583.13	30.71
2120	TV sys, CC, head end eqpt, ground loop corrector	EA	150.11	7.92
2130	TV sys, CC, head end eqpt, amplifier, video sync/dist	EA	2,868.15	30.56
2140	TV sys, CC, head end eqpt, amplifier, video equalizing	EA	213.06	6.42
2150	TV sys, CC, head end eqpt, amplifier, video dist	EA	242.11	9.38
2160	TV sys, CC, head end eqpt, video sync generator	EA	10,420.92	30.67
16862 2999	Poles, camera			
3000	TV sys, CC, poles, camera, cantilevered, fixed	EA	13,033.01	409.02
3010	TV sys, CC, poles, camera, cantilevered, swing	EA	15,821.72	410.88
3050	TV sys, CC, poles, camera, 15' straight	EA	1,273.93	39.95
3100	TV sys, CC, poles, pan/tilt	EA	12,800.62	410.26
3200	TV sys, CC, poles, mounting hardware, pan/tilt pole	EA	171.28	56.22
3210	TV sys, CC, poles, mounting hardware, wall mount, 16"	EA	123.17	28.23
3220	TV sys, CC, poles, mounting hardware, wall mount, 24"	EA	170.81	33.72
3230	TV sys, CC, poles, mounting hardware, wall mount, 36"	EA	245.76	43.13
16862 3999	Munt			
4000	TV sys, CC, mount, column, fixed floor/ceiling	EA	218.17	74.46
4010	TV sys, CC, mount, column, adjustable, floor	EA	286.12	109.08
4020	TV sys, CC, mount, column, adjustable, ceiling	EA	286.12	109.08
4030	Munt GFM TV / Monitor / Camera Bracket	EA	35.00	
16862 4099	Scanner Outdoor All Weather			
4100	TV sys, CC, 24 VAC, mount, in-outdoor, all weather, scanner	EA	1,362.70	101.45
4110	TV sys, CC, 115 VAC, mount, in-outdoor, all weather, scanner	EA	1,362.70	101.45
4120	TV sys, CC, 115 VAC, auto-scan, mount, in-outdoor, all weather,	EA	2,164.46	106.59
16862 4199	Housing			
4200	TV sys, CC, mount, housing, outdoor domed	EA	837.21	57.20
4210	TV sys, CC, mount, housing, outdoor, recessed wall/ceiling	EA	483.98	25.71
4220	TV sys, CC, mount, housing, outdoor, pendant/wall	EA	994.08	105.98
4230	TV sys, CC, mount, housing, indoor, corner	EA	465.38	170.95
4240	TV sys, CC, mount, housing, indoor, recessed	EA	483.98	115.79
4250	TV sys, CC, mount, housing, indoor, pendant	EA	994.08	191.10
16862 4999	Video motion detector			
5000	TV sys, CC, 1-16 cameras, digital multi-channel, video motion	EA	13,791.29	942.67
16862 5999	Video monitor			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
6000	TV sys, CC, video monitor, 5"	EA	351.79	23.61
6010	TV sys, CC, video monitor, 9"	EA	351.79	38.33
6020	TV sys, CC, video monitor, 12"	EA	456.37	35.62
6030	TV sys, CC, video monitor, 15"	EA	630.67	40.87
6040	TV sys, CC, video monitor, 19"	EA	863.06	44.90
16862 6999	Microprocessor, matrix switcher/controller			
7000	TV sys, CC, 16 camera, 2 monitor, microprocessor, matrix	EA	6,393.23	109.58
7010	TV sys, CC, 16 camera, 4 monitor, microprocessor, matrix	EA	6,393.23	92.82
7020	TV sys, CC, 32 camera, 2 monitor, microprocessor, matrix	EA	7,682.63	217.31
7030	TV sys, CC, 32 camera, 4 monitor, microprocessor, matrix	EA	7,682.63	189.14
7040	TV sys, CC, 64 camera, 8 monitor, microprocessor, matrix	EA	11,719.52	527.91
16862 7500	MTV			
16862 7510	Television System			
16862 7520	Television Antenna System			
7522	Television Antenna	EA	285.42	64.08
7524	Yagi Antenna	EA	379.27	64.08
7526	Television Antenna Elements	EA	148.28	16.15
7528	Television Antenna Mast	EA	138.26	48.42
16862 7540	Television Head-End Equipment			
7542	Television Line Splitter & Mixer	EA	99.48	32.27
7544	Television Line Splitter	EA	182.05	80.70
7546	Television Two-Way Splitter	EA	21.58	8.06
7548	Television Frequency Filter	EA	1,019.71	322.76
16862 7600	MTV or CATV			
16862 7610	Television System			
16862 7620	Television Outlets			
7622	Wall Box and Receiver Outlet Television Outlets	EA	42.06	15.33
7624	Wall Box w/Lockable Cover, Exclude Outlet Plug Television	EA	53.13	16.94
7626	Receiver Outlet Plug Television Outlets	EA	15.15	4.03
7628	Camera Outlet Plug Television Outlets	EA	17.08	4.07
7630	Audio Outlet Plug Television Outlets	EA	27.69	4.07
7632	Male Plug Television Outlets	EA	15.15	4.07
7634	12' RG-bu Cable w/G-59 & TV Fittings Television Outlets	EA	14.55	4.07
16863 1200	Distribution System			
16863 1210	Coaxial Cable			
1211	Rg-11U #14Awg	MF	1,019.17	
1212	Rg-6U #18Awg	MF	1,192.32	
1213	Rg-11U Foam #14Awg	MF	1,248.06	
1214	Rg-6U Foam #18Awg	MF	761.03	
1215	Pair #18 Insulated, Shielded, Jacketed Audio Cable	MF	642.16	
16863 1220	Tv Distribution Rack			
1221	Steel Rack Cabinet W/Shelves	EA	825.46	
1222	Switch And Pilot Light	EA	101.46	
1223	Surface Raceway With Outlets	LF	11.45	
1224	Service Label	EA	12.51	
16863 1230	Head End Amplifier			
1231	Head. End Amplifier	EA	550.82	
16863 1240	Uhf In-Line Booster Amplifier And Power Supply			
1241	Uhf In-Line Booster	EA	295.81	
16863 1250	Preamplifiers			
1251	Vhf Preamplifier	EA	385.61	
1252	Uhf Preamplifier	EA	295.81	
16863 1260	Power Supplies			
1261	Common Power Supply	EA	550.87	
16863 1270	Line Splitter And Mixer			
1271	Line Splitter	EA	34.57	
1272	Two-Way Splitter	EA	41.72	
1273	Frequency Filter	EA	107.52	
16863 1280	Power Line Filters			
1281	120-Volt Power Supply Line Filter	EA	227.17	
16863 1290	Wall Box And Receiver Outlets			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1291	Wall Box With Lockable Cover, Ex cluding Outlet Plug	EA	107.52	
1292	Tv Receiver Outlet Plug	EA	41.72	
1293	Tv Camera Outlet Plug	EA	41.72	
1294	Audio Outlet Plug	EA	32.77	
1295	12 Ft Rg. 6U Cable With G-59 And Tv Set Fittings	EA	70.03	
1296	Male Plug Pl-259	EA	41.72	
16863 4050 TV Distribution Outlets				
4051	TV Sys VHF Recept Distrib 12 Out	OUT	134.46	
4052	TV Sys UHF Recept Distrib 100 Ot	OUT	93.55	
16865 0010 Control & instrumentation				
0100	Control & instm LED mult digit, ind device, totalizer/counter	EA	314.53	5.81
0120	Control & instm liquid crystal, ind device, totalizer/counter	EA	236.68	12.91
16900 Power Transmission & Distribution				
16910 Power transmission & distribution				
16916 0010 Primary unit substation				
16916 0999 Oil circuit breaker				
Note: Sp 14.4 Thru 69 Kv 1200 Amp. Frame Munted. Standard Equipment				
1000	Swyd substa oil circuit breaker, 14.4 KV, 500 MVA	EA	21,584.35	324.58
1010	Swyd substa oil circuit breaker, 23 KV, 750 MVA	EA	41,721.36	648.02
1020	Swyd substa oil circuit breaker, 34.5 KV, 1500 MVA	EA	47,467.28	647.66
1030	Swyd substa oil circuit breaker, 46 KV, 2500 MVA	EA	54,768.39	648.09
1040	Swyd substa oil circuit breaker, 69 KV, 3500 MVA	EA	62,064.71	798.39
1050	Swyd substa oil circuit breaker access,adj 3 shot,recloser relay	EA	850.92	52.70
1060	Swyd substa oil circuit breaker access, 1 ph, overcurrent relay	EA	4,482.36	33.75
1070	Swyd substa oil CB access, 3ph, directional overcurrent relay	EA	3,728.97	44.86
1080	Swyd substa oil CB access, 3ph, under/over volt, voltage relay	EA	2,655.75	33.75
1090	Swyd substa oil CB access, differential relay package	EA	5,159.81	148.72
16916 1999 Oil transformer				
Note: Standard Nema Design - Two Winding Three Phase, 60 Hz. Oil Filled Load Tap Changer 10 Pct Range				
16916 1999 14.4 KV				
2000	Swyd substa oil xfmr, 14.4 KV, 2 winding, 3 phase, 1000 KVA	EA	23,812.99	243.80
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		1,579.41	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		2,707.56	
2350	Swyd substa, oil xfmr, for a mtd external control power unit,add		676.89	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		225.63	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,128.15	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		2,820.38	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		3,384.45	
2010	Swyd substa oil xfmr, 14.4 KV, 2 winding, 3 phase, 2000 KVA	EA	30,651.33	347.59
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,040.60	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		3,498.16	
2350	Swyd substa, oil xfmr, for a mtd external control power unit,add		874.54	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		291.51	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,457.57	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		3,643.92	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		4,372.70	
2020	Swyd substa oil xfmr, 14.4 KV, 2 winding, 3 phase, 5000 KVA	EA	63,895.39	657.60
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		4,322.68	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		7,410.31	
2350	Swyd substa, oil xfmr, for a mtd external control power unit,add		1,852.58	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		617.53	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		3,087.63	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		7,719.07	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		9,262.89	
2030	Swyd substa oil xfmr, 14.4 KV, 2 winding, 3 phase, 7500 KVA	EA	82,809.20	713.67
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		5,525.09	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		9,471.59	
2350	Swyd substa, oil xfmr, for a mtd external control power unit,add		2,367.90	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		789.30	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		3,946.50	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		9,866.24	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		11,839.49	
2040	Swyd substa oil xfmr, 14.4 KV, 2 winding, 3 phase, 10000 KVA	EA	98,774.26	895.46
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		6,588.34	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		11,294.29	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,823.57	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		941.19	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		4,705.96	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		11,764.89	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		14,117.87	
16916 2049 23 KV				
2050	Swyd substa oil xfmr, 23 KV, 2 winding, 3 phase, 1000 KVA	EA	26,389.25	331.31
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		1,742.25	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		2,986.71	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		746.68	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		248.89	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,244.46	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		3,111.16	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		3,733.39	
2060	Swyd substa oil xfmr, 23 KV, 2 winding, 3 phase, 2000 KVA	EA	34,215.91	379.13
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,263.87	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		3,880.91	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		970.23	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		323.41	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,617.05	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		4,042.62	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		4,851.14	
2070	Swyd substa oil xfmr, 23 KV, 2 winding, 3 phase, 5000 KVA	EA	68,801.63	686.62
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		4,641.12	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		7,956.20	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		1,989.05	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		663.02	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		3,315.08	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		8,287.71	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		9,945.25	
2080	Swyd substa oil xfmr, 23 KV, 2 winding, 3 phase, 7500 KVA	EA	89,506.43	940.81
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		5,939.59	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		10,182.15	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,545.54	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		848.51	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		4,242.56	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		10,606.41	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		12,727.69	
2090	Swyd substa oil xfmr, 23 KV, 2 winding, 3 phase, 10000 KVA	EA	106,199.21	881.96
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		7,108.08	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		12,185.29	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		3,046.32	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		1,015.44	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		5,077.20	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		12,693.01	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		15,231.61	
16916 2099 34.5 KV				
2100	Swyd substa oil xfmr, 34.5 KV, 2 winding, 3 phase, 1000 KVA	EA	29,443.73	350.15
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		1,929.81	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		3,308.25	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		827.06	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		275.69	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,378.44	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		3,446.10	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		4,135.32	
2110	Swyd substa oil xfmr, 34.5 KV, 2 winding, 3 phase, 2000 KVA	EA	38,418.16	591.50
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,539.28	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		4,353.04	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		1,088.26	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		362.75	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,813.77	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		4,534.42	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		5,441.30	
2120	Swyd substa oil xfmr, 34.5 KV, 2 winding, 3 phase, 5000 KVA	EA	69,903.51	778.63
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		4,683.25	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		8,028.43	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,007.11	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		669.04	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		3,345.18	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		8,362.95	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		10,035.54	
2130	Swyd substa oil xfmr, 34.5 KV, 2 winding, 3 phase, 7500 KVA	EA	90,368.61	838.86
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		5,999.94	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		10,285.62	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,571.40	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		857.13	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		4,285.67	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		10,714.18	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		12,857.02	
2140	Swyd substa oil xfmr, 34.5 KV, 2 winding, 3 phase, 10000 KVA	EA	108,787.56	727.25
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		7,207.80	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		12,356.24	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		3,089.06	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		1,029.69	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		5,148.43	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		12,871.08	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		15,445.29	
16916 2149 46 KV				
2150	Swyd substa oil xfmr, 46 KV, 2 winding, 3 phase, 1000 KVA	EA	32,744.29	287.85
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,142.10	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		3,672.18	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		918.04	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		306.01	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,530.07	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		3,825.19	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		4,590.22	
2160	Swyd substa oil xfmr, 46 KV, 2 winding, 3 phase, 2000 KVA	EA	42,765.50	331.90
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,818.59	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		4,831.87	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		1,207.97	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		402.66	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		2,013.28	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		5,033.19	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		6,039.83	
2170	Swyd substa oil xfmr, 46 KV, 2 winding, 3 phase, 5000 KVA	EA	77,262.23	577.08
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		5,198.36	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		8,911.48	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,227.87	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		742.62	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		3,713.12	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		9,282.79	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		11,139.35	
2180	Swyd substa oil xfmr, 46 KV, 2 winding, 3 phase, 7500 KVA	EA	100,961.73	869.04
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		6,660.00	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		11,417.14	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,854.28	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		951.43	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		4,757.14	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		11,892.85	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		14,271.42	
2190	Swyd substa oil xfmr, 46 KV, 2 winding, 3 phase, 10000 KVA	EA	120,114.39	707.16
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		8,000.68	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		13,715.46	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		3,428.86	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		1,142.95	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		5,714.77	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		14,286.93	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		17,144.32	
16916 2199 69 KV				
2200	Swyd substa oil xfmr, 69 KV, 2 winding, 3 phase, 1000 KVA	EA	36,467.65	231.47
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		2,377.74	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		4,076.12	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		1,019.03	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		339.68	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		1,698.39	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		4,245.96	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		5,095.16	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2210	Swyd substa oil xfmr, 69 KV, 2 winding, 3 phase, 2000 KVA	EA	47,694.89	335.52
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		3,128.65	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		5,363.40	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		1,340.85	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		446.95	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		2,234.75	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		5,586.87	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		6,704.24	
2220	Swyd substa oil xfmr, 69 KV, 2 winding, 3 phase, 5000 KVA	EA	85,430.84	428.92
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		5,770.16	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		9,891.71	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		2,472.93	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		824.31	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		4,121.55	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		10,303.86	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		12,364.64	
2230	Swyd substa oil xfmr, 69 KV, 2 winding, 3 phase, 7500 KVA	EA	111,426.38	747.93
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		7,392.52	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		12,672.89	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		3,168.22	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		1,056.07	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		5,280.37	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		13,200.93	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		15,841.12	
2240	Swyd substa oil xfmr, 69 KV, 2 winding, 3 phase, 10000 KVA	EA	132,686.84	668.44
2245	Swyd substa, oil xfmr, for mtd forced air cooling unit, add		8,880.75	
2300	Swyd substa, oil xfmr, for 50 Hz operation, add		15,224.15	
2350	Swyd substa, oil xfmr, for a mtd external control power unit, add		3,806.04	
2360	Swyd, oil xfmr, for intl mtd current xfmr & linear coupler, add		1,268.68	
2370	Swyd, oil xfmr, for mtd lightning arr, 15 KV station type, add		6,343.40	
2380	Swyd, oil xfmr, for mtd lightning arr, 34.5 KV station type, add		15,858.49	
2390	Swyd, oil xfmr, for mtd lightning arr, 69 KV station type, add		19,030.19	
16916 2999 Switchgear, with air circuit breaker				
16916 2999 4.16 KV				
Note: Section Medium Voltage, Metal Clad Switchgear, 3 Phase, 3 Wire With Ground. Includes Breaker Element, Housing, Control Switch Two Lamps - 3 Cable Terminals				
3000	Swyd substa, switchgear, w/air CB, 1200 A, 75 MVA, 4.16 KV	EA	30,106.98	590.76
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		6,549.48	
3010	Swyd substa, switchgear, w/air CB, 1200 A, 250 MVA, 4.16 KV	EA	30,106.98	557.88
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		6,549.48	
3020	Swyd substa, switchgear, w/air CB, 1200 A, 350 MVA, 4.16 KV	EA	31,480.51	534.26
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		6,836.85	
3030	Swyd substa, switchgear, w/air CB, 2000 A, 250 MVA, 4.16 KV	EA	42,079.25	510.83
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		9,158.70	
3040	Swyd substa, switchgear, w/air CB, 2000 A, 350 MVA, 4.16 KV	EA	43,417.53	432.84
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		9,440.78	
3050	Swyd substa, switchgear, w/air CB, 3000 A, 350 MVA, 4.16 KV	EA	59,790.81	663.07
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		13,035.50	
16916 3059 7.2 KV Complete With Air Circuit Breaker				
3060	Swyd substa, switchgear, w/air CB, 1200 A, 500 MVA, 7.2 KV	EA	33,689.04	487.38
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		7,330.81	
3070	Swyd substa, switchgear, w/air CB, 2000 A, 500 MVA, 7.2 KV	EA	46,810.07	695.32
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		10,193.67	
3080	Swyd substa, switchgear, w/air CB, 3000 A, 500 MVA, 7.2 KV	EA	62,235.63	770.68
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		13,564.89	
16916 3089 13.8 KV Complete With Air Circuit Breaker				
3090	Swyd substa, switchgear, w/air CB, 1200 A, 500 MVA, 13.8 KV	EA	33,804.44	515.27
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		7,348.12	
3100	Swyd substa, switchgear, w/air CB, 1200 A, 750 MVA, 13.8 KV	EA	35,190.43	380.66
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		7,637.35	
3110	Swyd substa, switchgear, 13.8 KV, w/air CB, 1200 A, 1000 MVA	EA	36,551.52	351.80
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		7,922.85	
3120	Swyd substa, switchgear, w/air CB, 2000 A, 500 MVA, 13.8 KV	EA	46,903.42	759.60
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		10,207.68	
3130	Swyd substa, switchgear, w/air CB, 2000 A, 750 MVA, 13.8 KV	EA	50,615.99	682.28
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		11,008.57	
3140	Swyd substa, switchgear, 13.8 KV, w/air CB, 2000 A, 1000 MVA	EA	54,404.13	512.18

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		11,820.81	
3150	Swyd substa, switchgear, w/air CB, 3000 A, 500 MVA, 13.8 KV	EA	62,235.63	879.17
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		13,564.89	
3160	Swyd substa, switchgear, w/air CB, 3000 A, 750 MVA, 13.8 KV	EA	66,023.78	656.22
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		14,377.13	
3170	Swyd substa, switchgear, 13.8 KV, w/air CB, 3000 A, 1000 MVA	EA	67,378.08	508.84
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		14,661.61	
16916 3199 Switchgear, without air circuit breaker				
16916 3199 4.16 KV				
3200	Swyd substa, switchgear, 4.16 KV, w/o air CB, 1200 A, 250 MVA	EA	6,477.95	191.90
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,378.38	
3210	Swyd substa, switchgear, 4.16 KV, w/o air CB, 1200 A, 350 MVA	EA	7,058.93	151.11
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,506.20	
3220	Swyd substa, switchgear, 4.16 KV, w/o air CB, 2000 A, 250 MVA	EA	8,776.84	240.81
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,869.62	
3230	Swyd substa, switchgear, 4.16 KV, w/o air CB, 2000 A, 350 MVA	EA	9,586.20	261.97
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,031.69	
3240	Swyd substa, switchgear, 4.16 KV, w/o air CB, 3000 A, 350 MVA	EA	11,561.54	220.04
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,466.27	
16916 3249 7.2 KV Less Air Circuit Breaker Element				
3250	Swyd substa, switchgear, 7.2 KV, w/o air CB, 1200 A, 500 MVA	EA	7,741.15	269.21
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,649.20	
3260	Swyd substa, switchgear, 7.2 KV, w/o air CB, 2000 A, 500 MVA	EA	10,039.81	265.57
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,140.40	
3270	Swyd substa, switchgear, 7.2 KV, w/o air CB, 3000 A, 500 MVA	EA	12,247.65	202.43
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,609.85	
16916 3279 13.8 KV Less Air Circuit Breaker Element				
3280	Swyd substa, switchgear, 13.8 KV, w/o air CB, 1200 A, 500 MVA	EA	7,818.08	229.47
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,660.74	
3290	Swyd substa, switchgear, 13.8 KV, w/o air CB, 1200 A, 750 MVA	EA	8,399.06	227.36
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		1,788.55	
3300	Swyd substa, switchgear, 13.8 KV, w/o air CB, 1200 A, 1000 MVA	EA	9,772.60	220.59
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,075.92	
3310	Swyd substa, switchgear, 13.8 KV, w/o air CB, 2000 A, 500 MVA	EA	10,332.76	338.60
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,184.35	
3320	Swyd substa, switchgear, 13.8 KV, w/o air CB, 2000 A, 750 MVA	EA	10,913.74	274.79
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,312.16	
3330	Swyd substa, switchgear, 13.8 KV, w/o air CB, 2000 A, 1000 MVA	EA	12,532.12	321.34
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,652.52	
3340	Swyd substa, switchgear, 13.8 KV, w/o air CB, 3000 A, 500 MVA	EA	12,731.25	420.27
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,682.39	
3350	Swyd substa, switchgear, 13.8 KV, w/o air CB, 3000 A, 750 MVA	EA	13,893.22	396.87
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		2,938.03	
3360	Swyd substa, switchgear, 13.8 KV, w/o air CB, 3000 A, 1000 MVA	EA	14,966.99	379.14
3365	Swyd substa, switchgear, for weatherproof NEMA 3R encl, add		3,156.03	
16916 3369 Accessories				
3370	Swyd substa, 15 KVA, control power xfmr, 5 KV, switchgear	EA	3,950.68	
3380	Swyd substa, 30 KVA, control power xfmr, 5 KV, switchgear	EA	4,647.86	
3390	Swyd substa, 75 KVA, control power xfmr, 5 KV, switchgear	EA	5,345.04	
3400	Swyd substa, 15 KVA, control power xfmr, 15 KV, switchgear	EA	4,647.86	
3410	Swyd substa, 30 KVA, control power xfmr, 15 KV, switchgear	EA	5,345.04	
3420	Swyd substa, 75 KVA, control power xfmr, 15 KV, switchgear	EA	6,042.21	
3430	Swyd substa, 3 phase, 6 KV, lightning arrester, switchgear	EA	1,952.10	
3440	Swyd substa, 3 phase, 9 KV, lightning arrester, switchgear	EA	2,091.54	
3450	Swyd substa, 3 phase, 15 KV, lightning arrester, switchgear	EA	2,370.41	
3460	Swyd substa, time&instl device, overcurrent ph prot, switchgear	EA	4,520.04	
3470	Swyd substa, AC ammeter with switch, switchgear access	EA	1,452.46	
3480	Swyd substa, indicating wattmeter, switchgear access	EA	3,892.58	
3490	Swyd substa, indicating varmeter, switchgear access	EA	4,380.61	
3500	Swyd substa, indicating watt-hour meter, switchgear	EA	3,578.85	
3510	Swyd substa, time/instantaneous device, ground prot, switchgear	EA	5,809.82	
3520	Swyd substa, differential generator, switchgear access	EA	1,603.51	
3530	Swyd substa, 5 & 15 KV, current transformers, switchgear access	EA	1,070.17	
3540	Swyd substa, 5 & 15KV w/primary fuses, PT, switchgear access	EA	1,731.33	
16916 3550 Assesory Items - Added Cost For Substation,				

Note: Secondary Distribution Sections Listed In 3000 Series Above

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3551	1200A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	4,246.25	
3552	2000A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	5,578.45	
3553	3000A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	7,499.77	
3554	3-phase Pothead Termination Accessories, Secondary Distr Sect	EA	2,504.69	
3555	5 KV, 15 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	7,363.08	
3556	5 KV, 30 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	9,942.43	
3557	5 KV, 75 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	18,473.26	
3558	15 KV, 15 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sec	EA	14,449.24	
3559	15 KV, 30 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sec	EA	15,803.24	
3560	15 KV, 75 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sec	EA	21,627.29	
3561	6 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sec	EA	3,160.16	
3562	9 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sec	EA	3,613.53	
3563	15 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sec	EA	5,654.95	
3564	Overcurrent Phase Protection, Time And Instantaneous Device 67	EA	3,504.48	
3565	AC Ammeter With Switch	EA	1,176.33	
3566	AC Vmeter w/Sw & Potential Xfrmr	EA	1,176.33	
3567	Indicating Wattmeter	EA	1,891.93	
3568	Indicating Varmeter	EA	2,288.94	
3569	Indicating Watthour Meter, 2 Ele	EA	1,318.47	
3570	Ground Protection, Time Or Instantaneous Device 67n	EA	3,528.99	
3571	Differential Generator Protection Single Phase	EA	6,944.01	
3572	Current Transformers 5 And 15 KV Single Secondary	EA	694.77	
3573	Potential Transformers 5 KV And 15KV 50/60Hz w/Primary Fuses	EA	4,527.64	
16916 3599 Vacuum circuit breaker				
3600	Swyd substa, vacuum CB, 1200 A, 500 MVA, 13.8 KV	EA	11,594.46	135.53
3610	Swyd substa, vacuum CB, 1200 A, 750 MVA, 13.8 KV	EA	15,603.24	209.54
3620	Swyd substa, vacuum CB, 1200 A, 1000 MVA, 13.8 KV	EA	18,080.65	214.03
3630	Swyd substa, vacuum CB, 2000 A, 500 MVA, 13.8 KV	EA	14,573.93	147.81
3640	Swyd substa, vacuum CB, 2000 A, 750 MVA, 13.8 KV	EA	19,163.69	172.31
3650	Swyd substa, vacuum CB, 2000 A, 1000 MVA, 13.8 KV	EA	22,699.31	210.73
3660	Swyd substa, vacuum CB, 3000 A, 500 MVA, 13.8 KV	EA	22,666.05	233.75
3670	Swyd substa, vacuum CB, 3000 A, 750 MVA, 13.8 KV	EA	26,326.23	247.37
3680	Swyd substa, vacuum CB, 3000 A, 1000 MVA, 13.8 KV	EA	28,445.78	275.34
16916 3999 Gas SF6 circuit breaker				
4000	Swyd substa, gas SF6 CB, 1200 A, 500 MVA, 13.8 KV	EA	25,247.54	184.03
4010	Swyd substa, gas SF6 CB, 1200 A, 750 MVA, 13.8 KV	EA	32,219.33	213.60
4020	Swyd substa, gas SF6 CB, 1200 A, 1000 MVA, 13.8 KV	EA	40,564.66	293.92
4030	Swyd substa, gas SF6 CB, 2000 A, 500 MVA, 13.8 KV	EA	31,480.51	294.72
4040	Swyd substa, gas SF6 CB, 2000 A, 750 MVA, 13.8 KV	EA	39,614.26	328.45
4050	Swyd substa, gas SF6 CB, 2000 A, 1000 MVA, 13.8 KV	EA	50,295.96	424.88
4060	Swyd substa, gas SF6 CB, 3000 A, 500 MVA, 13.8 KV	EA	49,333.13	462.88
4070	Swyd substa, gas SF6 CB, 3000 A, 750 MVA, 13.8 KV	EA	53,980.98	451.50
4080	Swyd substa, gas SF6 CB, 3000 A, 1000 MVA, 13.8 KV	EA	65,861.03	591.27
16916 5000 "Switchyard", Substation Secondary Distribution Section				
Note: Medium Voltage, Metal Clad Switchgear, 3 Phase, 3 Wire With Ground. Includes Breaker Element, Housing, Control Switch Two Lamps - 3 Cable Terminals				
16916 5100 4.8 Kv Switchgear Section Complete With Air Circuit Breaker				
5101	1200A, 75MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	20,454.73	559.38
5102	1200A, 250 MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	21,650.80	559.38
5103	1200A, 350 MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	30,075.08	638.38
5104	2000A, 250 MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	42,024.08	712.85
5105	2000A, 350 MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	61,717.30	860.71
5106	3000A, 350 MVA, 4.8KV SwGr, w/Air Crt Brkr, Secondary Distr Section	EA	55,541.53	857.91
16916 5200 4.8 Kv Switchgear Section Less Air Circuit Breaker Element				
5201	1200A, 250 MVA, 4.8KV SwGr, w/oAir Crt Brkr, Secondary Distr Section	EA	8,520.34	352.26
5202	1200A, 350MVA, 4.8KV SwGr, w/oAir Crt Brkr, Secondary Distr Section	EA	11,762.93	352.26
5203	2000A, 250MVA, 4.8KV SwGr, w/oAir Crt Brkr, Secondary Distr Section	EA	12,211.00	466.82
5204	2000A, 350MVA, 4.8KV SwGr, w/oAir Crt Brkr, Secondary Distr Section	EA	15,130.99	577.09
5205	3000A, 350MVA, 4.8KV SwGr, w/oAir Crt Brkr, Secondary Distr Section	EA	21,693.72	577.09
16916 5300 Assesory Items - Added Cost For Substation,				
Note: Secondary Distribution Sections Listed In 5000 Series Above				
5301	1200A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	4,655.20	
5302	2000A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	6,127.89	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
5303	3000A, Xfrmr Throat Connection Accessories, Secondary Distr Sect	EA	8,247.72	
5304	3-phase Pothead Termination Accessories, Secondary Distr Sect	EA	2,659.24	
5305	5 KV, 15 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	8,176.53	
5306	5 KV, 30 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	11,040.84	
5307	5 KV, 75 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	20,514.14	
5308	15 KV, 15 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	16,045.55	
5309	15 KV, 30 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	17,549.14	
5311	15 KV, 75 KVA, Control Pwr Xfrmr Accessories, Secondary Distr Sect	EA	24,016.61	
5312	6 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sect	EA	3,509.28	
5313	9 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sect	EA	4,012.75	
5314	15 KV, 3-Phase Lightning Arrester Accessories, Secondary Distr Sect	EA	6,279.70	
5315	Overcurrent Phase Protection, Time And Instantaneous Device 67	EA	3,891.64	
5316	AC Ammeter With Switch	EA	1,306.29	
5317	AC Vmeter w/Sw & Potential Xfrmr	EA	1,306.29	
5318	Indicating Wattmeter	EA	2,100.94	
5319	Indicating Varmeter	EA	2,541.82	
5321	Indicating Watthour Meter, 2 Ele	EA	1,464.13	
5322	Ground Protection, Time Or Instantaneous Device 67n	EA	3,918.86	
5323	Differential Generator Protection Single Phase	EA	7,711.17	
5324	Current Transformers 5 And 15 KV Single Secondary	EA	771.53	
5325	Potential Transformers 5 KV And 15KV 50/60HZ w/Primary Fuses	EA	5,027.84	
16917 0010 Secondary unit substations				
16917 1000 Fused load break switch				
Note: Items Are Equipped With 3 Pole - 2 Position Selector Switch For Automatic Transferring One Line To An Alternate Incoming Line. 2 Position Floor Md. Type, Metal Compartment Includes Weatherproofing, Fuses, Transformer Throat, Pothead Terminations Thru 500 Mm, With Surge Protection. Manual Transferring Of One Line To An Alternate Incoming Line.				
1010	Substn, 112.5-1500KVA xfrmr, 15 KV, 600A, 2 posn floor mtd, fused	EA	12,970.85	247.54
1020	Substn, 2000 & 2500KVA xfrmr, 15 KV, 600A, 2 posn floor mtd, fused	EA	12,970.85	213.14
1030	Substn, 112.5-1500KVA xfrmr, 15 KV, 600A, 2 posn selector, fused	EA	17,430.90	234.00
1040	Substn, 2000 & 2500KVA xfrmr, 15 KV, 600A, 2 posn selector, fused	EA	17,430.90	217.92
1050	Substn, primary lightning arrestors, accessories, fused LB	EA	1,045.77	
1060	Substn, accessories, key interlock, fused LB sw	EA	1,202.63	
16917 2000 Oil transformer, 13.8 KV primary				
Note: Oil Filled, 75 Kva Thru 2500 Kva Standard Nema Design - 3 Phase Cover Munted Tap Changer Liquid Level Gauge, Thermometer, Pressure Vacuum Automatic Control For Auxiliary Cooling Equipment. Weatherproof				
16917 2009 480y/277 V secondary				
2010	Substn, oil xfrmr, 75 KVA, 13.8 KV pri, 480y/277 V secondary	EA	3,893.96	98.49
2020	Substn, oil xfrmr, 112.5KVA, 13.8 KV pri, 480y/277 V secondary	EA	3,950.74	77.30
2030	Substn, oil xfrmr, 150 KVA, 13.8 KV pri, 480y/277 V secondary	EA	5,210.52	104.38
2040	Substn, oil xfrmr, 225 KVA, 13.8 KV pri, 480y/277 V secondary	EA	7,234.74	153.55
2050	Substn, oil xfrmr, 300 KVA, 13.8 KV pri, 480y/277 V secondary	EA	9,604.64	262.57
2060	Substn, oil xfrmr, 500 KVA, 13.8 KV pri, 480y/277 V secondary	EA	12,800.70	355.63
2070	Substn, oil xfrmr, 750 KVA, 13.8 KV pri, 480y/277 V secondary	EA	16,557.28	493.92
2080	Substn, oil xfrmr, 1000 KVA, 13.8 KV pri, 480y/277 V secondary	EA	19,130.39	615.90
2090	Substn, oil xfrmr, 1500 KVA, 13.8 KV pri, 480y/277 V secondary	EA	28,323.48	577.89
2100	Substn, oil xfrmr, 2000 KVA, 13.8 KV pri, 480y/277 V secondary	EA	31,476.90	1,003.15
2110	Substn, oil xfrmr, 2500 KVA, 13.8 KV pri, 480y/277 V secondary	EA	33,756.67	986.25
16917 2199 208y/120 V secondary				
2200	Substn, oil xfrmr, 75 KVA, 13.8 KV pri, 208y/120 V secondary	EA	3,883.50	103.13
2210	Substn, oil xfrmr, 112.5KVA, 13.8 KV pri, 208y/120 V secondary	EA	3,926.34	77.67
2220	Substn, oil xfrmr, 150 KVA, 13.8 KV pri, 208y/120 V secondary	EA	3,983.49	79.75
2230	Substn, oil xfrmr, 225 KVA, 13.8 KV pri, 208y/120 V secondary	EA	7,189.42	152.45
2240	Substn, oil xfrmr, 300 KVA, 13.8 KV pri, 208y/120 V secondary	EA	9,544.21	240.36
2250	Substn, oil xfrmr, 500 KVA, 13.8 KV pri, 208y/120 V secondary	EA	12,719.36	321.14
2260	Substn, oil xfrmr, 750 KVA, 13.8 KV pri, 208y/120 V secondary	EA	16,451.54	472.01
2270	Substn, oil xfrmr, 1000 KVA, 13.8 KV pri, 208y/120 V secondary	EA	19,008.38	575.15
2280	Substn, oil xfrmr, 1500 KVA, 13.8 KV pri, 208y/120 V secondary	EA	28,139.89	912.31
16917 2500 Assessories - Added Cost For Series 2000 Oil Filled Substation, Transformers				
16917 2500 Basic Cost Items				
2501	Forced Air Cooling, 750KVA & Abv Rating(Up 15%)	EA	12.86	
2502	Ctrl Power Xformer f/Fans & Aux	EA	6.43	
2503	Sudden Pressure Relay	EA	2,273.27	
2504	Throats Or Flanges (HV Or LV)	EA	4,513.20	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
2505	Lightning Arrestors (3-1Pole)	EA	2,971.77	
2506	Single Feeder Switch With Fuses 3 Pole, 2 Position, Open-Close	EA	16,491.83	
2507	Oil Fuse Cutout, 15KV, 200A, Free Stand Air Filled Term Compart	EA	15,429.75	
16917 2510	Add For Transformer Liquid Containment Area- Reinforced Concrete Curb With 6" Slab			
2511	112.5KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2512	150KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2513	225KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2514	300KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2515	500KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2516	750KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2517	1000KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	1,967.21	207.71
2518	1500KVA, Reinf Curb w/6"Slab Xformer Liquid Containment Area	EA	2,316.95	207.71
2519	2000/2500KVA, Reinf Curb w/6"Slab Xformer Liquid	EA	2,317.23	207.71
2520	75KVA, Reinf Curb w/6"Slab Xformer Liquid Containment	EA	1,967.21	207.71
16917 3000	Dry transformer, 4160 V primary			
16917 3009	480y/277 V secondary			
3010	Substn, dry xfmr, 112.5KVA, 4160 V pri, 480y/277 V secondary	EA	4,505.42	68.89
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,521.00	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-210.08	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		210.08	
3020	Substn, dry xfmr, 150 KVA, 4160 V pri, 480y/277 V secondary	EA	5,384.60	90.25
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		3,025.06	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-252.09	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		252.09	
3030	Substn, dry xfmr, 225 KVA, 4160 V pri, 480y/277 V secondary	EA	7,398.78	153.62
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		4,177.49	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-348.12	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		348.12	
3040	Substn, dry xfmr, 300 KVA, 4160 V pri, 480y/277 V secondary	EA	9,502.89	205.39
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		5,401.74	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-450.15	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		450.15	
3050	Substn, dry xfmr, 500 KVA, 4160 V pri, 480y/277 V secondary	EA	15,070.36	391.05
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,642.23	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-720.19	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		720.19	
3060	Substn, dry xfmr, 750 KVA, 4160 V pri, 480y/277 V secondary	EA	18,779.01	485.33
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		10,802.78	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-900.23	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		900.23	
3070	Substn, dry xfmr, 1000 KVA, 4160 V pri, 480y/277 V secondary	EA	22,605.54	687.90
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		12,963.34	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,080.28	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,080.28	
3080	Substn, dry xfmr, 1500 KVA, 4160 V pri, 480y/277 V secondary	EA	33,499.24	753.64
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		19,445.01	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,620.42	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,620.42	
3090	Substn, dry xfmr, 2000 KVA, 4160 V pri, 480y/277 V secondary	EA	37,272.93	870.49
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		21,605.56	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,800.46	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,800.46	
3100	Substn, dry xfmr, 2500 KVA, 4160 V pri, 480y/277 V secondary	EA	40,421.70	979.55
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		23,406.38	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,950.53	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,950.53	
3110	Substn, dry xfmr, 3000 KVA, 4160 V pri, 480y/277 V secondary	EA	44,925.37	1,132.87
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		25,926.68	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,160.56	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,160.56	
3120	Substn, dry xfmr, 3750 KVA, 4160 V pri, 480y/277 V secondary	EA	50,412.31	1,755.50
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		28,807.42	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,400.62	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,400.62	
16917 3150	Primary 4800V (Delta Or Wye) Secondary 480Y/277 Or 480V			
3152	112.5KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	12,979.07	203.45
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,605.63	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-633.80	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		633.80	
3154	150KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	13,487.26	238.20
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,885.46	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-657.12	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		657.12	
3156	225KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	13,748.40	296.11
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,988.18	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-665.68	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		665.68	
3158	300KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	15,197.95	316.24
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,818.78	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-734.90	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		734.90	
3160	500KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	16,912.05	480.03
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		9,747.24	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-812.27	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		812.27	
3162	750KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	19,595.92	538.89
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		11,296.03	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-941.34	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		941.34	
3164	1000KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	22,808.34	710.29
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		13,085.02	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,090.42	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,090.42	
3166	1500KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	26,998.31	800.03
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		15,532.34	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,294.36	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,294.36	
3168	2000KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	35,218.11	890.32
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		20,380.88	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,698.41	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,698.41	
3170	2500KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	38,801.59	1,043.90
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		22,423.83	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,868.65	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,868.65	
3172	3000KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	43,510.79	1,216.43
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		25,106.50	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,092.21	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,092.21	
3174	3750KVA, Substat, Sec 480y/277V Pri 4800V, Dry Xfmr, or 480V	EA	50,943.65	1,760.05
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		29,066.22	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,422.19	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,422.19	
16917 3199 208y/120 V secondary				
3200	Substn, dry xfmr, 112.5KVA, 4160 V pri, 208y/120 V secondary	EA	5,081.76	75.03
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,866.80	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-238.90	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		238.90	
3210	Substn, dry xfmr, 150 KVA, 4160 V pri, 208y/120 V secondary	EA	5,360.20	89.81
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		3,010.42	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-250.87	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		250.87	
3220	Substn, dry xfmr, 225 KVA, 4160 V pri, 208y/120 V secondary	EA	7,365.08	152.92
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		4,157.27	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-346.44	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		346.44	
3230	Substn, dry xfmr, 300 KVA, 4160 V pri, 208y/120 V secondary	EA	9,458.73	204.43
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		5,375.24	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-447.94	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		447.94	
3240	Substn, dry xfmr, 500 KVA, 4160 V pri, 208y/120 V secondary	EA	15,000.64	389.26
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,600.39	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-716.70	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		716.70	
3250	Substn, dry xfmr, 750 KVA, 4160 V pri, 208y/120 V secondary	EA	18,691.86	483.06
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		10,750.49	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-895.87	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		895.87	
3260	Substn, dry xfmr, 1000 KVA, 4160 V pri, 208y/120 V secondary	EA	22,500.97	684.72
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		12,900.59	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,075.05	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,075.05	
3270	Substn, dry xfmr, 1500 KVA, 4160 V pri, 208y/120 V secondary	EA	33,342.37	763.67
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		19,350.89	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,612.57	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,612.57	
3280	Substn, dry xfmr, 2000 KVA, 4160 V pri, 208y/120 V secondary	EA	37,098.64	866.39
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		21,500.99	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,791.75	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,791.75	
16917 3300 Primary 4800V (Delta Or Wye) Secondary 208Y/120 Or 240V				
3302	112.5KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	13,445.46	207.76
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,885.46	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-657.12	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		657.12	
3304	150KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	13,487.26	238.20
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,885.46	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-657.12	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		657.12	
3306	225KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	13,748.40	304.60
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		7,988.18	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-665.68	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		665.68	
3308	300KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	15,197.95	346.64
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,818.78	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-734.90	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		734.90	
3310	500KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	16,912.05	481.96
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		9,747.24	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-812.27	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		812.27	
3312	750KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	19,595.92	522.43
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		11,296.03	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-941.34	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		941.34	
3314	1000KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	22,808.34	671.40
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		13,085.02	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,090.42	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,090.42	
3316	1500KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	26,998.31	782.21
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		15,532.34	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,294.36	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,294.36	
3318	2000KVA, Substat, Sec 208y/120V Pri 4800V, Dry Xfmr, or 240V	EA	35,218.11	881.17
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		20,380.88	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,698.41	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,698.41	
16917 3499 Dry transformer, 13800 V primary				
16917 3499 480y/277 V secondary				
3500	Substn, dry xfmr, 112.5KVA, 13800 V pri, 480y/277 V secondary	EA	3,932.57	54.11
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,177.29	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-181.44	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		181.44	
3510	Substn, dry xfmr, 150 KVA, 13800 V pri, 480y/277 V secondary	EA	4,577.04	69.29
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,540.52	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-211.71	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		211.71	
3520	Substn, dry xfmr, 225 KVA, 13800 V pri, 480y/277 V secondary	EA	5,433.90	97.02
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,998.57	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-249.88	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		249.88	
3530	Substn, dry xfmr, 300 KVA, 13800 V pri, 480y/277 V secondary	EA	7,274.24	141.51
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		4,064.55	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-338.71	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		338.71	
3540	Substn, dry xfmr, 500 KVA, 13800 V pri, 480y/277 V secondary	EA	14,944.87	339.54
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,566.93	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-713.91	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		713.91	
3550	Substn, dry xfmr, 750 KVA, 13800 V pri, 480y/277 V secondary	EA	18,918.44	513.20
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		10,886.44	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-907.20	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		907.20	
3560	Substn, dry xfmr, 1000KVA, 13800 V pri, 480y/277 V secondary	EA	22,772.87	649.89
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		13,063.73	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,088.64	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,088.64	
3570	Substn, dry xfmr, 1500KVA, 13800 V pri, 480y/277 V secondary	EA	33,750.22	741.83
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		19,595.60	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,632.97	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,632.97	
3580	Substn, dry xfmr, 2000KVA, 13800 V pri, 480y/277 V secondary	EA	37,551.81	770.80
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		21,772.89	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,814.41	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,814.41	
3590	Substn, dry xfmr, 2500KVA, 13800 V pri, 480y/277 V secondary	EA	40,720.32	1,057.37
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		23,585.55	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,965.46	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,965.46	
3600	Substn, dry xfmr, 3000KVA, 13800 V pri, 480y/277 V secondary	EA	45,260.01	1,306.03
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		26,127.46	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,177.29	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,177.29	
3610	Substn, dry xfmr, 3750KVA, 13800 V pri, 480y/277 V secondary	EA	55,622.55	1,751.96
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		31,933.57	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-2,661.13	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		2,661.13	
16917 3699 208y/120 V secondary				
3700	Substn, dry xfmr, 112.5KVA, 13800 V pri, 208y/120 V secondary	EA	4,468.24	61.50
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,498.69	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-208.22	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		208.22	
3710	Substn, dry xfmr, 150 KVA, 13800 V pri, 208y/120 V secondary	EA	5,340.45	80.89
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		2,998.57	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-249.88	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		249.88	
3720	Substn, dry xfmr, 225 KVA, 13800 V pri, 208y/120 V secondary	EA	7,337.20	131.12
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		4,140.55	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-345.05	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		345.05	
3730	Substn, dry xfmr, 300 KVA, 13800 V pri, 208y/120 V secondary	EA	9,423.88	183.47
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		5,354.33	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-446.19	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		446.19	
3740	Substn, dry xfmr, 500 KVA, 13800 V pri, 208y/120 V secondary	EA	14,944.87	339.54
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		8,566.93	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-713.91	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		713.91	
3750	Substn, dry xfmr, 750 KVA, 13800 V pri, 208y/120 V secondary	EA	18,622.14	440.88
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		10,708.66	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-892.39	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		892.39	
3760	Substn, dry xfmr, 1000KVA, 13800 V pri, 208y/120 V secondary	EA	22,417.31	612.98
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		12,850.40	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,070.87	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,070.87	
3770	Substn, dry xfmr, 1500KVA, 13800 V pri, 208y/120 V secondary	EA	33,216.88	799.23
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		19,275.59	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,606.30	
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,606.30	
3780	Substn, dry xfmr, 2000KVA, 13800 V pri, 208y/120 V secondary	EA	36,959.20	823.19
3785	Swyd substa, dry xfmr, for gas filled xfmr, add		21,417.32	
3790	Swyd substa, dry xfmr, for single phase operation, deduct		-1,784.78	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
3795	Swyd substa, dry xfmr, for weatherproof NEMA 3R enclosure, add		1,784.78	
16917 3999	Switchgear			
	Note: Low Voltage Drawout Switchgear 277/480 Volt, 3 Phase 4 Wire			
16917 3999	With air circuit breaker			
	Note: Circuit Breaker With Solid State Long- Time And Instantaneous Trips			
4000	Substn, switchgear 277/480 V, manual, 800 A, w/air circuit	EA	3,349.99	92.13
4010	Substn, switchgear 277/480 V, manual, 1600 A, w/air circuit	EA	5,563.98	148.83
4020	Substn, switchgear 277/480 V, manual, 2000 A, w/air circuit	EA	7,108.26	172.49
4030	Substn, switchgear 277/480 V, electric, 3200 A, w/air circuit	EA	10,853.84	180.79
4040	Substn, switchgear 277/480 V, electric, 4000 A, w/air circuit	EA	16,838.34	247.82
16917 4099	Without air circuit breaker			
4100	Substn, switchgear 277/480 V, 800 A, w/o air circuit breaker	EA	2,296.55	43.52
4110	Substn, switchgear 277/480 V, 1600 A, w/o air circuit breaker	EA	2,560.01	42.00
4120	Substn, switchgear 277/480 V, 2000 A, w/o air circuit breaker	EA	3,094.27	57.03
4130	Substn, switchgear 277/480 V, 3200 A, w/o air circuit breaker	EA	4,057.01	51.70
4140	Substn, switchgear 277/480 V, 4000 A, w/o air circuit breaker	EA	5,120.14	56.91
16917 4199	Blank section filler - No Provisions For Future Breaker			
4200	Substn, switchgear 277/480 V, 600 - 2000 A, blank section	EA	519.62	26.21
4210	Substn, switchgear 277/480 V, blank section filler, 3000 A	EA	733.43	29.55
4220	Substn, switchgear 277/480 V, blank section filler, 4000 A	EA	961.08	46.07
16917 4299	Accessories			
4300	Substn, switchgear 277/480 V, ammeter & switch, complete,	EA	1,742.95	
4310	Substn, switchgear 277/480 V, circuit breaker lifting device,	EA	1,236.25	
4320	Substn, switchgear 277/480 V, current limiting fuses, 15 KV,	EA	2,320.44	
4330	Substn, switchgear 277/480 V, sgl sec 5 - 800 A, current xfmr,	EA	464.79	
4340	Substn, switchgear 277/480 V, key interlock, access	EA	1,161.96	
4350	Substn, switchgear 277/480 V, potential transformers w/fuses,	EA	377.64	
4360	Substn, switchgear 277/480 V, short time delay, access	EA	325.35	
4370	Substn, switchgear 277/480 V, shunt trip & auxiliary switch,	EA	203.34	
4380	Substn, switchgear 277/480 V, 3 phase, 15 KV, surge capacitors,	EA	464.79	
4390	Substn, switchgear 277/480 V, voltmeter & switch, complete,	EA	1,742.95	
4400	Substn, switchgear 277/480 V, watt-hour meter, complete, access	EA	1,394.36	
4410	Substn, switchgear 277/480 V, wattmeter, complete, access	EA	1,278.16	
4420	Substn, switchgear 277/480 V, weatherproofing, per vert sect,	EA	2,085.58	
16918 0999	Sectionalizing switches			
	Note: Feeders 200 Amp Replaceable Bushing Wells Recessed Locking Assembly Oil Level And Oil Fill Plugs			
1000	Sectionalizing sw, 1 sw up & 2 sw downstream 15 KV 200A, 3 ph	EA	13,187.14	196.72
1010	Sectionalizing sw, fused up & 2 sw downstream 15 KV 200A, 3 ph	EA	12,341.10	99.36
1020	Sectionalizing sw, 2 sw up & 2 sw downstream 15 KV 200A, 3 ph	EA	13,107.23	136.28
1030	Sectionalizing sw, 2 fuses up & 2sw downstream 15 KV 200A, 3 ph	EA	15,240.74	101.34
16919 0010	Surge & lighting arresters			
16919 0999	Lighting arrester Single Phase			
1000	Lightning arrester, metal top for outdoor mtg, 3 KV, 1 phase	EA	500.42	77.10
1002	4.5KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	527.88	72.72
1004	6KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	527.88	72.72
1020	Lightning arrester, metal top for outdoor mtg, 7.5 KV, 1 phase	EA	568.98	66.90
1022	9KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	617.38	72.04
1040	Lightning arrester, metal top for outdoor mtg, 10 KV, 1 phase	EA	577.11	60.13
1042	12KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	691.73	71.62
1060	Lightning arrester, metal top for outdoor mtg, 15 KV, 1 phase	EA	676.36	63.34
1062	18KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	993.04	88.99
1080	Lightning arrester, metal top for outdoor mtg, 21 KV, 1 phase	EA	791.88	78.92
1082	24KV, Ltng Arrestors, IMK, M1 Top For Outdoor Use, 1 Phase	EA	1,178.57	106.83
1100	Lightning arrester, metal top for outdoor mtg, 27 KV, 1 phase	EA	980.12	73.08
1300	Lightning arrester, porc top for cubicle mtg, 3 KV, 1 phase	EA	472.53	72.70
1302	4.5KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Mounting, 1 Phase	EA	527.88	72.72
1304	6KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Mounting, 1 Phase	EA	527.88	72.72
1320	Lightning arrester, porc top for cubicle mtg, 7.5KV, 1 phase	EA	508.55	59.62
1322	9KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Mounting, 1 Phase	EA	617.38	72.04
1340	Lightning arrester, porc top for cubicle mtg, 10 KV, 1 phase	EA	516.69	53.66
1342	12KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Mounting, 1 Phase	EA	691.73	71.62
1360	Lightning arrester, porc top for cubicle mtg, 15 KV, 1 phase	EA	606.64	56.66

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1362	18KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Munting, 1 Phase	EA	993.04	88.99
1380	Lightning arrester, porc top for cubicle mtg, 21 KV, 1 phase	EA	695.44	69.06
1382	24KV, Ltng Arsr, IMK, Porcelain Top For Cubicle Munting, 1 Phase	EA	1,178.57	106.83
1400	Lightning arrester, porc top for cubicle mtg, 27 KV, 1 phase	EA	813.96	60.47
1600	Lightning arrester, 1 phase, distribution class, 3 KV	EA	461.78	53.66
1620	Lightning arrester, 1 phase, distribution class, 9 KV	EA	592.04	53.66
1990	1 Crossarm Brk Rvsbl 3-27KV IMK	EA	380.56	74.63
2000	Lightning arrester, 1 unit, access, pole mtd bracket, 3-27 KV	EA	349.36	69.95
2020	Lightning arrester, 3 unit, access, pole mtd bracket, 3-27 KV	EA	496.00	53.66
16919 2999 Fused cutout				
3000	Lightning arrester, fused cutout, enclosed, 5 KV	EA	1,912.21	53.66
3020	Lightning arrester, fused cutout, open, 15 KV	EA	1,954.52	56.66
3022	3KV La Int Class, Lightning Arsr	EA	516.37	72.85
3024	3KV La Station Class, Ltng Arsr	EA	479.69	73.23
3026	9KV La Int Class, Lightning Arsr	EA	596.67	72.21
3028	9KV La Station Class, Ltng Arsr	EA	617.38	72.04
16920 Pole line construction				
16921 0010 Wood crossarm With All Hardware And Braces				
16921 0099 Single arm				
0100	Pole line constr, 3.5" x 4.5" x 5'-7", wd crossarm complete, sgl	EA	116.97	28.52
0150	Pole line constr, 3.5" x 4.5" x 8', wd crossarm complete, sgl	EA	136.45	28.48
0200	Pole line constr, 3.75" x 4.75" x 10', wd crossarm complete, sgl	EA	146.37	38.17
16921 0999 Double arm				
1000	Pole line constr, 3.5" x 4.5" x 5'-7", wd crossarm complete, dbl	EA	272.44	75.87
1050	Pole line constr, 3.5" x 4.5" x 8', wd crossarm complete, dbl	EA	290.31	74.77
1100	Pole line constr, 3.75" x 4.75" x 10', wd crossarm complete, dbl	EA	316.05	79.46
16921 1200 Fiberglass Crossarm Complete W All Hardware				
16921 1210 Single Phase, 15 Degree Angle				
1220	Fiberglass Cutout & Arrestor Bracket, 18", Mn Ult Load 800#	EA	214.33	16.10
1230	Fbgs Insulator Bracket, 14", 11/16" Dia Hole, Mn Ult Ld 1200#	EA	251.38	22.60
1240	Fbgs Insulator Bracket, 14", 1" Lead Thd, Mn Ult Load 1200#	EA	255.63	24.21
16921 1300 Two Phase, 15 Degree Angle				
1310	Fbgs Insulator Bracket, 36", Minimum Ultimate Load 1200#	EA	305.59	29.05
16921 1400 Mscellaneous				
1410	Fbgs Deadend Crossarm 36", Mn Ult Load 7000# Per Conductor	EA	427.09	29.06
1420	Fbgs Deadend Crossarm 36", Mn Ult Load 12000# Per Conductor	EA	499.89	37.13
1430	Pole Top Pin, Hot Dip Galv., 18", 1" Lead Threaded	EA	74.29	5.61
1440	Three Phase Equipment Munting Bracket	EA	371.39	6.46
16921 3000 Incoming Min Circuit Breaker Structure				
Note: Includes Structure, Main Breaker, 42KA Bus Bracing, 600A Tin Plated Copper Bus, NEMA 1 Enclosure, 15" Cabinet Depth, And 1/4"x2" Tin Plated Copper Horizontal Ground Bus.				
3001	225A, Main Ckt Breaker Section	EA	3,358.71	27.14
3002	400A, Main Ckt Breaker Section	EA	7,373.50	190.96
3003	600A, Main Ckt Breaker Section	EA	7,461.94	245.20
3004	800A, Main Ckt Breaker Section	EA	10,847.14	381.88
3005	1200A, Main Ckt Breaker Section	EA	15,883.78	432.20
16921 4000 Incoming Fusible Min Disconnect Section				
Note: Includes Structure, Fuses, 42KA Bus Bracing, 600A Tin Plated Copper Bus, NEMA 1 Enclosure, 15" Cabinet Depth, And 1/4"x2" Tin Plated Copper Horizontal Ground Bus.				
4001	200A, Fusible Min Disc. Section	EA	2,877.77	191.10
4002	400A, Fusible Min Disc. Section	EA	4,001.70	245.41
4003	600A, Fusible Min Disc. Section	EA	7,965.57	382.31
4004	800A, Fusible Min Disc. Section	EA	9,354.24	382.31
4005	1200A, Fusible Min Disc. Section	EA	13,335.43	432.63
16922 0010 Guying				
16922 0099 Down guy				
0100	Pole line constr, guying, down guy, 25' to 40' pole	EA	579.14	107.48
0150	Pole line constr, guying, down guy, 45' to 60' pole	EA	678.14	107.48
0200	Pole line constr, guying, down guy, 65' to 75' pole	EA	908.56	107.48
16922 0999 Head guy				
1000	Pole line constr, 25' to 40' pole, guying, head guy, 50' span	EA	591.07	165.41

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1050	Pole line constr, 45' to 60' pole, guying, head guy, 50' span	EA	637.26	165.41
1100	Pole line constr, 65' to 75' pole, guying, head guy, 50' span	EA	777.28	165.41
16922 1999 Insulator				
16922 1999 Guy strain				
2000	Pole line constr, guying, insulator, guy strain	EA	182.30	89.87
16922 2049 Pin type				
2050	Pole line constr, 5KV class 55-3, guying, insulator, pin	EA	63.96	25.30
2100	Pole line constr, 15KV class 55-5, guying, insulator, pin	EA	73.01	26.49
16922 2499 Suspension type				
2500	Pole line constr, 5KV class 52-2, guying, insulator,	EA	93.37	36.09
2550	Pole line constr, 15KV class 52-4, guying, insulator,	EA	95.52	30.93
2600	Pole line constr, 25KV class 2 x 52-4, guying, insulator,	EA	146.18	38.84
2650	Pole line constr, 50KV class 4 x 52-4, guying, insulator,	EA	246.77	61.95
16922 2999 Spool type				
3000	Pole line constr, 5KV class 53-5, guying, insulator, spool	EA	35.13	12.82
3050	Pole line constr, 15KV class 2 x 53-5, guying, insulator, spool	EA	94.95	36.86
3100	Pole line constr, 25KV class 3 x 53-5, guying, insulator, spool	EA	129.42	39.18
16922 3499 Secondary rack				
3500	Pole line constr, 2 spool, guying, insulator, secondary	EA	61.21	20.65
3550	Pole line constr, 3 spool, guying, insulator, secondary	EA	88.50	34.06
3600	Pole line constr, 4 spool, guying, insulator, secondary	EA	103.30	36.05
3602	1 Spool Secondary Rack	EA	51.66	19.80
16923 0010 Load break switch				
Note: Group Operated, 3-Insulator, Vertical Break, High Strength Pin Insulators Worm Gear Operating Mechanism Operating Rods, Mechanisms, And Switch Bases Are Galvanized Steel				
16923 0099 Outdoor				
0100	Pole line constr, 600A, load break sw, 3 phase, 7.2KV,	EA	2,380.27	122.37
0120	Pole line constr, 1200A, load break sw, 3 phase, 7.2KV,	EA	4,824.31	121.61
0140	Pole line constr, 1600A, load break sw, 3 phase, 7.2KV,	EA	7,204.18	205.69
0160	Pole line constr, 2000A, load break sw, 3 phase, 7.2KV,	EA	7,290.25	206.03
0500	Pole line constr, 600A, load break sw, 3 phase, 14.4KV,	EA	2,955.44	122.12
0520	Pole line constr, 1200A, load break sw, 3 phase, 14.4KV,	EA	6,236.10	121.49
0540	Pole line constr, 1600A, load break sw, 3 phase, 14.4KV,	EA	7,204.18	205.69
0560	Pole line constr, 2000A, load break sw, 3 phase, 14.4KV,	EA	7,290.25	206.03
1000	Pole line constr, 600A, load break sw, 3 phase, 23KV, outdoor	EA	3,249.85	142.18
1020	Pole line constr, 1200A, load break sw, 3 phase, 23KV, outdoor	EA	5,791.21	141.34
1040	Pole line constr, 1600A, load break sw, 3 phase, 23KV, outdoor	EA	7,476.17	243.57
1060	Pole line constr, 2000A, load break sw, 3 phase, 23KV, outdoor	EA	7,564.04	243.90
16924 0010 Service distribution poles				
Note: Embedded, Bearing Plate On Base End, Pole Cap On Top End, Grounding Nut, Galvanized Finish.				
16924 0099 Steel, square, tapered shaft				
0100	Service distribution pole, 20', stl, square, tapered shaft	EA	599.95	69.39
0120	Service distribution pole, 25', stl, square, tapered shaft	EA	670.16	69.40
0140	Service distribution pole, 30', stl, square, tapered shaft	EA	742.69	87.80
0160	Service distribution pole, 35', stl, square, tapered shaft	EA	815.56	87.04
0180	Service distribution pole, 40', stl, square, tapered shaft	EA	972.57	85.43
16924 0299 Galvanized, round, tapered shaft				
0300	Service distribution pole, 40', stl, galv, round, tapered shaft	EA	1,204.96	166.55
0320	Service distribution pole, 45', stl, galv, round, tapered shaft	EA	1,420.42	167.82
0340	Service distribution pole, 50', stl, galv, round, tapered shaft	EA	1,634.43	181.83
0360	Service distribution pole, 55', stl, galv, round, tapered shaft	EA	1,897.10	233.58
0380	Service distribution pole, 60', stl, galv, round, tapered shaft	EA	2,160.70	212.76
0400	Service distribution pole, 65', stl, galv, round, tapered shaft	EA	2,415.04	264.18
0420	Service distribution pole, 70', stl, galv, round, tapered shaft	EA	2,722.98	268.21
0440	Service distribution pole, 75', stl, galv, round, tapered shaft	EA	3,244.95	370.62
0460	Service distribution pole, 80', stl, galv, round, tapered shaft	EA	3,768.64	385.17
0480	Service distribution pole, 85', stl, galv, round, tapered shaft	EA	4,234.95	486.23
0500	Service distribution pole, 90', stl, galv, round, tapered shaft	EA	4,800.77	510.40
0520	Service distribution pole, 95', stl, galv, round, tapered shaft	EA	5,338.03	645.20
0540	Service distribution pole, 100', stl, galv, round, tapered shaft	EA	6,045.13	666.04
0700	Service distribution pole, 40', stl, galv, 12 sided, tapered	EA	1,321.16	126.35
0720	Service distribution pole, 45', stl, galv, 12 sided, tapered	EA	1,420.42	123.01

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
0740	Service distribution pole, 50', stl, galv, 12 sided, tapered	EA	1,587.95	124.19
0760	Service distribution pole, 55', stl, galv, 12 sided, tapered	EA	1,815.77	169.22
0780	Service distribution pole, 60', stl, galv, 12 sided, tapered	EA	2,032.88	141.75
0800	Service distribution pole, 65', stl, galv, 12 sided, tapered	EA	2,240.75	182.68
0820	Service distribution pole, 70', stl, galv, 12 sided, tapered	EA	2,490.58	174.80
0840	Service distribution pole, 75', stl, galv, 12 sided, tapered	EA	2,745.31	228.99
0860	Service distribution pole, 80', stl, galv, 12 sided, tapered	EA	4,250.86	334.24
0880	Service distribution pole, 85', stl, galv, 12 sided, tapered	EA	5,861.70	525.26
0900	Service distribution pole, 90', stl, galv, 12 sided, tapered	EA	7,415.19	586.04
0920	Service distribution pole, 95', stl, galv, 12 sided, tapered	EA	9,056.31	846.38
0940	Service distribution pole, 100', stl, galv, 12 sided, tapered	EA	10,925.38	959.78
0960	Service distribution pole, 105', stl, galv, 12 sided, tapered	EA	12,526.63	1,240.09
16924 0999 Ladder clips				
1000	Service distribution pole, ladder clips	EA	162.68	
1002	Ladder Clips	EA	12.55	
1004	Coal Tar Epoxy Coating from Base To 1' above Groundline	EA	94.18	
1006	Ground Sleeve-2' @ Groundline	EA	94.73	
16924 1100 Arms With Baseplates And Endplates				
1102	4' Arm WBaseplate & Endplate	EA	247.02	36.53
1104	5' Arm WBaseplate & Endplate	EA	268.99	36.32
1106	6' Arm WBaseplate & Endplate	EA	333.77	55.22
1108	7' Arm WBaseplate & Endplate	EA	352.99	55.01
1110	8' Arm WBaseplate & Endplate	EA	417.12	74.04
1112	9' Arm WBaseplate & Endplate	EA	439.08	73.70
1114	10' Arm WBaseplate & Endplate	EA	583.19	91.71
1116	11' Arm WBaseplate & Endplate	EA	607.85	91.41
16924 1200 Standard VangsLoad Bearing At Any Angle.				
1202	15,000#Std Vangs-Load Bearing @ Any Angle	EA	103.08	40.65
1204	30,000#Std Vangs-Load Bearing @ Any Angle	EA	116.54	39.76
1206	45,000#Std Vangs-Load Bearing @ Any Angle	EA	134.95	38.83
16924 1300 Armless Construction Brackets				
16924 1310 Verticals Insulator And Equipment Bracket				
1311	12" 1 Pos Vert Insul&Equip Brkt	EA	113.78	39.89
1312	7" 1 Pos Vert Insul&Equip Brkt	EA	105.28	40.48
1313	12" 3 Pos Vert Insul&Equip Brkt	EA	127.59	39.17
1314	18" 3 Pos Vert Insul&Equip Brkt	EA	187.13	58.96
1315	18" 1 Pos Vert Insul&Equip Brkt	EA	179.06	59.38
16924 1320 Horizontal And Multiple Insulator Brackets				
1321	Sidepole 1 7/8" Clearance Horiz & Multiple Insul Brackets	EA	98.66	41.04
1322	Sidepole 2" Clearance Horiz & Multiple Insul Brackets	EA	116.52	39.76
1323	Sidepole 9" Clearance Horiz & Multiple Insul Brackets	EA	170.41	59.89
1324	Sidepole 10" Clearance Horiz & Multiple Insul Brackets	EA	212.53	57.90
1325	Sidepole 15" Clearance Horiz & Multiple Insul Brackets	EA	272.64	77.56
1326	Sidepole 20" Clearance Horiz & Multiple Insul Brackets	EA	295.01	76.76
16924 1330 Pole Top Bracket And Pins				
1331	Pole Top Pin-5"	EA	101.25	40.78
1332	Pole Top Bracket-5"	EA	105.59	40.44
16924 1340 Angle Pins				
1341	Angle Pin-25 Degree 6"	EA	100.66	40.87
1342	Angle Pin-2k Degree 7 1/4"	EA	114.75	39.85
16924 1350 Static And Neutral Wire Brackets				
1351	Neutral Wire Bracket	EA	89.98	41.89
1352	Static Wire Bracket	EA	108.93	40.23
16924 1360 Cutout, Arrestor And Terminator Brackets				
1361	Cutout And Arrestor, Includes Munting Bracket	EA	103.64	40.61
1362	Equipment Munting T Bracket	EA	115.87	39.76
1363	15KV Cutout	EA	169.22	40.53
1364	9/10 KV Arrestor	EA	152.54	40.57
16924 1370 Msc. Brackets				
1371	Spacer Cable	EA	128.98	39.08
1372	Conduit Support	EA	100.37	40.87
1373	Cluster Bracket For M. Transformer On Pole, 3 Dia.	EA	193.76	40.70
16924 1380 Pole Mounted, 15Kv, 200 Ampree, Solenoid				
Note: Operated High Voltage Switch And Pole Munting Bracket.				

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1381	15Kv, 1 Ph, Solenoid Switch W Pole Bracket	EA	947.40	102.15
1382	Equipment Munting T Bracket	EA	116.91	40.87
16924 1390 Steel Crossarm Complete With Munting Hardware				
1391	48-5/8" Long Steel Crossarm Double Application	EA	134.28	28.51
1392	72-5/8" Long Steel Crossarm Double Application	EA	159.67	28.46
16924 1400 Fiberglass Crossarms				
1402	Fiberglass Bull Horn Crossarm	EA	157.49	39.85
16924 1500 Removal & Relocation Of Steel Service Poles				
1502	Removal & Relocation Of Steel Service Poles WArms Up To 60'	LF	14.87	
16924 1600 Special Steel Bases For Poles				
1602	Spin-in Steel Base For Poles	EA	84.64	
16924 1999 Prestressed concrete, square				
2000	Service distribution pole, 30', prestressed conc, square	EA	2,150.54	366.13
2020	Service distribution pole, 35', prestressed conc, square	EA	2,230.01	392.16
2040	Service distribution pole, 40', prestressed conc, square	EA	2,381.60	435.30
2060	Service distribution pole, 45', prestressed conc, square	EA	2,501.38	404.80
2080	Service distribution pole, 50', prestressed conc, square	EA	2,708.84	497.60
2100	Service distribution pole, 55', prestressed conc, square	EA	2,931.22	457.25
2120	Service distribution pole, 60', prestressed conc, square	EA	3,135.37	507.95
2130	65',Prestressed ConcSq Pole For Distribution	EA	3,930.67	647.99
2140	70',Prestressed ConcSq Pole For Distribution	EA	4,401.36	703.34
16924 2999 Aluminum round, tapered seamless shaft				
3000	Service distribution pole, 20', al, round, tapered seamless	EA	993.71	113.57
3020	Service distribution pole, 25', al, round, tapered seamless	EA	1,093.79	87.63
3040	Service distribution pole, 30', al, round, tapered seamless	EA	1,227.90	113.87
3060	Service distribution pole, 35', al, round, tapered seamless	EA	1,410.82	109.72
3080	Service distribution pole, 40', al, round, tapered seamless	EA	1,814.85	91.49
16924 3100 Wood Pole, Class 3, Yellow Pine Penta-Treated				
Note: Treated To 8 Lb Retention Machine Dig And Set				
16924 3110 Wood Poles Class 3 Pine				
3112	Wood Pole, Cl 3,Pine,Treated,25' (7.6M),Machine Dig & Set	EA	457.31	91.24
1101	For Class 2 Pole Add		51.58	
1102	For Class 1 Pole Add		90.26	
1111	For Class 4 Pole Deduct		-25.79	
1112	For Class 5 Pole Deduct		-77.37	
1113	For Class 6 Pole Deduct		-103.16	
3114	Wood Pole, Cl 3,Pine,Treated,30' (9.1M),Machine Dig & Set	EA	571.37	90.30
1101	For Class 2 Pole Add		70.03	
1102	For Class 1 Pole Add		122.55	
1111	For Class 4 Pole Deduct		-35.01	
1112	For Class 5 Pole Deduct		-105.04	
1113	For Class 6 Pole Deduct		-140.06	
3116	Wood Pole, Cl 3,Pine,Treated,35' (10.7M),Machine Dig & Set	EA	732.84	132.99
1101	For Class 2 Pole Add		88.06	
1102	For Class 1 Pole Add		154.11	
1111	For Class 4 Pole Deduct		-44.03	
1112	For Class 5 Pole Deduct		-132.09	
1113	For Class 6 Pole Deduct		-176.12	
3118	Wood Pole, Cl 3,Pine,Treated,40' (12.2M),Machine Dig & Set	EA	856.44	132.36
1101	For Class 2 Pole Add		106.93	
1102	For Class 1 Pole Add		187.13	
1111	For Class 4 Pole Deduct		-53.47	
1112	For Class 5 Pole Deduct		-160.40	
1113	For Class 6 Pole Deduct		-213.86	
3120	Wood Pole, Cl 3,Pine,Treated,45' (13.7M),Machine Dig & Set	EA	991.65	163.15
1101	For Class 2 Pole Add		126.64	
1102	For Class 1 Pole Add		221.62	
1111	For Class 4 Pole Deduct		-63.32	
1112	For Class 5 Pole Deduct		-189.96	
1113	For Class 6 Pole Deduct		-253.28	
3122	Wood Pole, Cl 3,Pine,Treated,50' (15.2M),Machine Dig & Set	EA	1,136.08	162.90
1101	For Class 2 Pole Add		146.77	
1102	For Class 1 Pole Add		256.84	
1111	For Class 4 Pole Deduct		-73.38	
1112	For Class 5 Pole Deduct		-220.15	

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
1113	For Class 6 Pole Deduct		-293.54	
3124	Wood Pole, Cl 3, Pine, Treated, 55' (16.8M), Machine Dig & Set	EA	1,281.14	199.13
1101	For Class 2 Pole Add		167.73	
1102	For Class 1 Pole Add		293.53	
1111	For Class 4 Pole Deduct		-83.87	
1112	For Class 5 Pole Deduct		-251.60	
1113	For Class 6 Pole Deduct		-335.47	
3126	Wood Pole, Cl 3, Pine, Treated, 60' (18.3M), Machine Dig & Set	EA	1,442.64	198.79
1101	For Class 2 Pole Add		191.22	
1102	For Class 1 Pole Add		334.63	
1111	For Class 4 Pole Deduct		-95.61	
1112	For Class 5 Pole Deduct		-286.82	
1113	For Class 6 Pole Deduct		-382.43	
3128	Wood Pole, Cl 3, Pine, Treated, 65' (19.8M), Machine Dig & Set	EA	2,733.28	228.70
1101	For Class 2 Pole Add		440.60	
1102	For Class 1 Pole Add		771.04	
1111	For Class 4 Pole Deduct		-220.30	
1112	For Class 5 Pole Deduct		-660.89	
1113	For Class 6 Pole Deduct		-881.19	
3130	Wood Pole, Cl 3, Pine, Treated, 70' (21.3M), Machine Dig & Set	EA	3,026.95	228.36
1101	For Class 2 Pole Add		492.57	
1102	For Class 1 Pole Add		862.00	
1111	For Class 4 Pole Deduct		-246.29	
1112	For Class 5 Pole Deduct		-738.86	
1113	For Class 6 Pole Deduct		-985.14	
3132	Wood Pole, Cl 3, Pine, Treated, 75' (22.9M), Machine Dig & Set	EA	3,351.81	251.04
1101	For Class 2 Pole Add		549.86	
1102	For Class 1 Pole Add		962.26	
1111	For Class 4 Pole Deduct		-274.93	
1112	For Class 5 Pole Deduct		-824.79	
1113	For Class 6 Pole Deduct		-1,099.72	
16924 3200	Removal & Relocation Of Wood Poles W Cross Arm			
3210	Rem & Relocate Wood Pole With Cross Arms, Up To 75'	EA	705.37	
16925 0010	Primary fuse cutout Includes The Fuse And Cut-out Switch			
16925 0099	Non-loadbreak current limiting			
0100	Pole line, pri fuse cutout, 15A, 8.3KV-95KV, non-lbrk CL	EA	273.84	111.97
0150	Pole line, pri fuse cutout, 25A, 8.3KV-95KV, non-lbrk CL	EA	316.15	111.12
0200	Pole line, pri fuse cutout, 40A, 8.3KV-95KV, non-lbrk CL	EA	358.47	110.53
0250	Pole line, pri fuse cutout, 15A, non-lbrk CL, 17.1KV-95KV,	EA	297.08	97.54
0300	Pole line, pri fuse cutout, 15A, non-lbrk CL, 17.1KV-125KV,	EA	297.08	93.22
0500	Pole line, pri fuse cutout, 15A, 17.1KV, holder w/fuse, non-lbrk	EA	486.48	93.22
0502	100A Pri Fuse Cutout 8.3KV-95KV Non-Loadbreak Current Limiting	EA	319.32	108.44
0504	200A Pri Fuse Cutout 8.3KV-95KV Non-Loadbreak Current Limiting	EA	319.32	107.81
16925 0999	Loadbreak current limiting			
1000	Pole line, pri fuse cutout, 15A, 8.3KV-95KV, lbrk CL	EA	391.20	92.71
1050	Pole line, pri fuse cutout, 25A, 8.3KV-95KV, lbrk CL	EA	433.51	117.97
1100	Pole line, pri fuse cutout, 40A, 8.3KV-95KV, lbrk CL	EA	475.83	116.87
1150	Pole line, pri fuse cutout, 15A, 17.1KV-95KV, lbrk CL	EA	428.38	104.90
1200	Pole line, pri fuse cutout, 15A, 17.1KV-125KV, lbrk CL	EA	428.38	104.90
1202	100A Pri Fuse Cutout 8.3KV-95KV Loadbreak Current Limiting	EA	355.73	111.97
1204	200A Pri Fuse Cutout 8.3KV-95KV Loadbreak Current Limiting	EA	369.10	112.05
16925 1249	Fuseholder w/fuse			
1250	Pole line, pri fuse cutout, 15A, 8.3KV, holder w/fuse, lbrk CL	EA	486.48	92.71
1300	Pole line, pri fuse cutout, 25A, 8.3KV, holder w/fuse, lbrk CL	EA	835.54	117.97
1350	Pole line, pri fuse cutout, 40A, 8.3KV, holder w/fuse, lbrk CL	EA	877.86	116.87
1400	Pole line, pri fuse cutout, 15A, 17.1KV, holder w/fuse, lbrk CL	EA	486.48	92.71
1402	100A 8.3KV Pri Fuseholder w/Fuse Non-Loadbreak Current Limiting	EA	200.11	98.59
1404	200A 8.3KV Pri Fuseholder w/Fuse Non-Loadbreak Current Limiting	EA	242.58	109.89
16925 1999	Capacitors, pole mounted			
2000	Pole line, pri fuse cutout, 6 KVAR, capacitors, pole mounted	EA	703.76	92.71
16925 2100	Accessories			
2102	Hot Line Clamp	EA	30.84	11.55
2104	Stirrup	EA	33.79	11.68
16926 0010	Structure assembly			
16926 0099	Pole			
	Note: Insulator W/Pin, Bayonet, Bolts, Washers, And Neutral Wire Brackets			

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
16926 0099 5 KV				
0100	Pole, 5KV, 1 insul w/pin, 2 bolts, 1 neutral brckt type OH-1	EA	193.20	87.89
0150	Pole, 5KV, 2 insul w/pin, 2 bolts,1 neutral brckt,type OH-2	EA	309.52	141.88
0200	Pole, 5KV, 2 suspension insul, 2 bolts,2 neutral brckt,type OH-3	EA	305.71	86.53
0250	Pole, 5KV, 1 suspension insul, 1 bolt,1 neutral brckt,type OH-4	EA	152.86	38.17
0300	Pole, 5KV, 2 suspension insul, 2 bolts,2 neutral brckt,type OH-5	EA	207.51	57.85
0350	Pole, 5KV, 4 suspension insul, 4 bolts, type OH-6	EA	417.25	137.95
0400	Pole, 5KV, 3 suspension insul, 3 bolts, type OH-7	EA	311.26	96.94
0450	Pole, 5KV, 6 suspension insul, 6 bolts, type OH-8	EA	627.63	220.50
0500	Pole, 5KV, 6 suspension insul, 6 bolts,2 neutral brckt,type OH-9	EA	720.17	250.63
0550	Pole, 5KV, 3 suspension insul, 3 bolts,1 neutral brckt,type OH-10	EA	360.11	110.02
0600	Pole, 5KV, 1 cross arm w/3 pin insul,1 neutral brck,type OH-11	EA	335.23	136.76
0650	Pole, 5KV, 2 cross arms w/3 pin insul,2 neutral brck,type OH-12	EA	713.93	325.49
0700	Pole, 5KV,1 neutral bracket, 2 cross armw/3 suspen, insul,OH-13	EA	505.58	168.92
0750	Pole, 5KV, 1 cross arm w/3 pin insul, type OH-14	EA	303.36	120.55
0800	Pole, 5KV, 2 cross arms w/3 pin insul, type OH-15	EA	617.20	274.33
0850	Pole, 5KV, 2 cross arms w/3 suspension insul, type OH-16	EA	451.71	120.56
16926 0999 15 KV				
Note: Insulator W/Pin, Bayonet, Bolts, Washers, And Neutral Wire Brackets				
1000	Pole, 15KV, 1 insul w/pin, 2 bolts,1 neutral brckt,type OH-1	EA	205.08	87.63
1100	Pole, 15KV, 2 insul w/pin, 2 bolts,1 neutral brckt,type OH-2	EA	333.27	144.97
1150	Pole, 15KV, 2 suspen insul, 2 bolts,2 neutral brckt,type OH-3	EA	310.01	75.96
1200	Pole, 15KV, 1 suspen insul, 1 bolt,1 neutral brckt,type OH-4	EA	155.01	35.46
1250	Pole, 15KV, 2 suspension insul,2 bolts,2 neutral brckt,type OH-5	EA	211.81	50.44
1300	Pole, 15KV, 4 suspension insul, 4 bolts, type OH-6	EA	425.85	125.08
1350	Pole, 15KV, 3 suspension insul, 3 bolts, type OH-7	EA	317.71	88.69
1400	Pole, 15KV, 6 suspension insul, 6 bolts, type OH-8	EA	640.53	198.54
1450	Pole, 15KV, 6 suspen insul, 6 bolts,2 neutral brckt,type OH-9	EA	733.06	220.20
1500	Pole, 15KV, 3 suspen insul, 3 bolts,1 neutral brck,type OH-10	EA	366.56	98.30
1550	Pole, 15KV, 1 cross arm w/3 pin insul,1 neutral brckt,type OH-11	EA	387.12	149.20
1600	Pole, 15KV, 2 cross arms w/3 pin insul,2 neutl brckt,type OH-12	EA	785.18	347.07
1650	Pole, 15KV,1 neutl brckt,2 cross arms,w/3 suspen insul, OH-13	EA	512.03	157.07
1700	Pole, 15KV, 1 cross arm w/3 pin insul, type OH-14	EA	335.50	120.26
1750	Pole, 15KV, 2 cross arms w/3 pin insul, type OH-15	EA	684.97	294.17
1800	Pole, 15KV, 2 cross arms w/3 suspension insul, type OH-16	EA	458.16	134.65
16926 1999 25 KV				
Note: Insulator W/Pin, Bayonet, Bolts, Washers, And Neutral Wire Brackets				
2000	Pole, 25KV, 2 suspen insul, 2 bolts,2 neutl brckt, type OH-3	EA	411.18	77.52
2100	Pole, 25KV, 1 suspension insul, 1 bolt,1 neutl brckt,type OH-4	EA	208.08	31.10
2150	Pole, 25KV, 2 suspen insul, 2 bolts,2 neutl brckt, type OH-5	EA	312.66	49.64
2200	Pole, 25KV, 4 suspension insul, 4 bolts, type OH-6	EA	632.80	169.30
2250	Pole, 25KV, 3 suspension insul, 3 bolts, type OH-7	EA	471.09	93.43
2300	Pole, 25KV, 6 suspension insul, 6 bolts, type OH-8	EA	937.97	237.26
2350	Pole, 25KV, 6 suspen insul, 6 bolts,2 neutl brckt, type OH-9	EA	1,047.70	327.30
2400	Pole, 25KV,1 neutl brckt,2 cross arms w/3 suspen insul, OH-13	EA	660.22	165.28
2450	Pole, 25KV, 2 cross arms w/3 suspension insul, type OH-16	EA	617.72	180.85
16926 2499 50 KV				
Note: Insulator W/Pin, Bayonet, Bolts, Washers, And Neutral Wire Brackets				
2500	Pole, 50KV, 2 suspen insul, 2 bolts, 2 neutl brckt, type OH-3	EA	614.07	118.36
2550	Pole, 50KV, 1 suspension insul, 1 bolt,1 neutl brckt,type OH-4	EA	311.51	55.77
2600	Pole, 50KV, 2 suspen insul, 2 bolts,2 neutl brckt, type OH-5	EA	517.05	120.51
2650	Pole, 50KV, 4 suspension insul, 4 bolts, type OH-6	EA	1,034.32	264.13
2700	Pole, 50KV, 3 suspension insul, 3 bolts, type OH-7	EA	775.57	191.81
2750	Pole, 50KV, 6 suspension insul, 6 bolts, type OH-8	EA	1,551.14	403.17
2800	Pole, 50KV, 6 suspen insul, 6 bolts, 2 neutl brckt, type OH-9	EA	1,684.23	404.32
2850	Pole, 50KV, 3 suspen insul, 3 bolts, 1 neutl brckt, type OH-10	EA	826.32	187.37
2900	Pole, 50KV,1 neutl brckt,2 cross arms w/3 suspension insul, OH-1	EA	967.07	260.20
2950	Pole, 50KV, 2 cross arms w/3 suspension insul, type OH-16	EA	917.42	240.43
16926 3999 Overhead to underground conversion				
Note: Which Includes Insulator W/Pin, Bolts, Washers, Crossarms, Fused Cut Out, Arrestors, Ground Rods, Clamps, Conduit, Mulding, Cable Termination And Neutral Wire Brackets. (Pole Not Included)				
16926 3999 5 KV				
4000	Insul, crossarm type OU-1-a, fused cutout, gnd, ovhd/ugnd	EA	5,254.57	1,283.75

MNOR CSI	DESCRIPTION	UOM	TOTAL DIRECT UNIT	DEMOLITION UNIT COST
4050	Insul, crossarm type 0U-1-b, fused cutout, gnd, ovhd/ugnd	EA	5,231.33	1,284.26
4100	Insul, crossarm type 0U-1-c, fused cutout, gnd, ovhd/ugnd	EA	5,237.14	1,283.83
4150	Insul, crossarm type 0U-1-d, fused cutout, gnd, ovhd/ugnd	EA	5,266.19	1,282.56
16926 4199 15 KV				
4200	Insul, crossarm type 0U-1-a, fused cutout, gnd, ovhd/ugnd	EA	5,550.87	1,274.23
4250	Insul, crossarm type 0U-1-b, fused cutout, gnd, ovhd/ugnd	EA	5,533.44	1,274.19
4300	Insul, crossarm type 0U-1-c, fused cutout, gnd, ovhd/ugnd	EA	5,539.25	1,274.19
4350	Insul, crossarm type 0U-1-d, fused cutout, gnd, ovhd/ugnd	EA	5,574.11	1,274.19
16926 4400 25 Kv Structures (Pole Not Included)				
4402	Type 0U-1-a 25KV, Ovhd To Ugnd Conversion Structures, w/o Poles	EA	6,547.73	1,238.96
4404	Type 0U-1-b 25KV, Ovhd To Ugnd Conversion Structures, w/o Poles	EA	6,598.23	1,238.11
4406	Type 0U-1-c 25KV, Ovhd To Ugnd Conversion Structures, w/o Poles	EA	6,614.18	1,237.82
4408	Type 0U-1-d 25KV, Ovhd To Ugnd Conversion Structures, w/o Poles	EA	7,163.26	1,501.52
16926 5000 Transformer stations, w/o pole				
16926 5000 5 KV				
5010	Xfmr stations, insul, type T1-a, crossarm fused cutout, mtg, 5K	EA	4,199.45	
5050	Xfmr stations, insul, type T2-c, crossarm fused cutout, mtg, 5K	EA	4,735.59	1,070.86
5100	Xfmr stations, insul, type T3-a, crossarm fused cutout, mtg, 5K	EA	6,923.36	1,499.89
5150	Xfmr stations, insul, type T3-c, crossarm fused cutout, mtg, 5K	EA	7,004.70	1,497.77
5200	Xfmr stations, insul, type T4-a, crossarm fused cutout, mtg, 5K	EA	3,591.37	964.99
16926 5249 15 KV				
5250	Xfmr stations, insul, type T1-a, crossarm fused cutout, mtg,	EA	4,542.23	813.04
5300	Xfmr stations, insul, type T2-c, crossarm fused cutout, mtg,	EA	5,095.80	1,099.68
5350	Xfmr stations, insul, type T3-a, crossarm fused cutout, mtg,	EA	7,452.06	1,559.30
5400	Xfmr stations, insul, type T3-c, crossarm fused cutout, mtg,	EA	7,545.01	1,559.30
5450	Xfmr stations, insul, type T4-a, crossarm fused cutout, mtg,	EA	3,806.33	1,274.69
16926 5500 23 Kv Stations (Pole Not Included)				
5502	Type T1-a 23KV Xfmr Sta w/oPole w/o Pole	EA	3,768.01	1,198.40
5504	Type T2-c 23KV Xfmr Sta w/oPole w/o Pole	EA	3,362.49	1,020.08
5506	Type T3-a 23KV Xfmr Sta w/oPole w/o Pole	EA	4,333.39	1,449.27
5508	Type T3-c 23KV Xfmr Sta w/oPole w/o Pole	EA	4,333.39	1,449.27
5510	Type T4-a 23KV Xfmr Sta w/oPole w/o Pole	EA	3,059.08	886.87
16926 5700 Ground transformer, w/o pole				
5710	Pole line const, type Ts-1, structure assm ground	EA	4,491.16	